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Mental Health

in BRICS Countries: A Global Perspective

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INTRODUCTION

Alina V Martynova

Changes in the political, economic and social sphere, most actively occurring in the world in the last two decades, intensification of globalization processes leading to the world division of labor, redistribution of human and production resources, standardization of legislation, convergence of different cultures - all this leads to significant changes in the social and economic sphere of different countries of the world. In this transitional period, it is extremely important to determine the level and quality of life of the population, the state of its health, which was one of the reasons for the activation at the end of the last century and the beginning of the new one of the World Health Organization (WHO) activities to develop conceptual approaches to health protection, including mental health, and to conduct national programs in this area. During this period, many national and international programs were organized for timely detection of various types of mental pathology, their qualified diagnosis and treatment, determination of the scale of damage and other consequences associated with mental ill-health of the population. An important condition for conducting these collaborative studies was the use of methods and tools that made it possible to obtain comparable indicators of medico-demographic, social, clinical and other characteristics of the surveyed population of different countries and continents.

It is known that health priorities are determined by epidemiological trends in the prevalence of various types of pathology, their impact on the indicators of working capacity and the duration of a full human life. Mental and behavioral disorders make a significant contribution to the estimation of the total

burden of disease worldwide. Recent WHO-initiated studies of the global burden of mental illness ^[10, 11, 21], based on the DALY burden of mental illness, have shown that mental disorders have emerged as a major cause of illness in all countries. In this publication, we analyzed modern approaches to studying the prevalence of mental pathology and the results obtained by assessing the state of mental health of the population in selected countries of the world. As it is known, the most important indicators of epidemiology of mental disorders are morbidity, population morbidity and risk of morbidity, but researchers of different psychiatric schools interpret their content differently. In this regard, it seems important to provide a modern definition of the terms used ^[20].

The influence of ethno-cultural factors on some indicators of mental health of the population has been established. Statistically significant as lower in value than the national average was estimated indicators of primary morbidity in all psychiatric pathology for the North Caucasian and combined Turkic and Mongolian population groups. In the period from 2005 to 2015, the differences in the primary morbidity rates of psychosis and dementia were equally statistically significant (in descending order of the indicator value) for such ethno-cultural groups as Slavic - Finno-Ugric - United Turkic and Mongolian - North Caucasian. At the same time, the rates of primary morbidity of Psychoses dementia in the Slavic group were higher or close to the national average. Despite the keen interest in the study of epidemiology of psychiatry diseases, epidemiology of psychiatry disease in BRICS countries as well as other Asian, African or Latin America's countries is still underestimated. Moreover, the comparison of different public health policies in the area of psychiatry pathology can define epidemiology situations in psychiatry and it should be valuable analysis to understand the reason for possible variability.

Urbanization, armed conflict, natural disasters and catastrophes have led to an increase in the number of homeless people, among whom the proportion of psychotic patients is as high as 50 percent. In addition to substance abuse, risk factors for the development of mental disorders include increased poverty, violence and environmental pollution. Pandemics, conflict and displacement, increasing global income inequality, and growing economic and political uncertainty are not contributing to a stable global mental health situation. People with mental disorders face multiple human rights violations and restrictions on freedoms, denial of their civil, political, economic and social rights. Unlike other classes of illness, the indirect costs of mental disorders exceed the direct costs of treatment. A significant proportion of the burden of mental disorders is borne by families and careers. Social costs are associated with a poor quality of life for people with mental disorders and their families, and with alienation and delinquency among young people whose childhood mental health problems have not been adequately addressed. Funding and adequate use of procurement of medicines is essential in the formulation and implementation of policies to improve access to mental health care.

In the past, workshops that used to receive raw materials and orders from industrial enterprises have been deprived of this opportunity under free market conditions. Many issues that are not within the competence of psychiatrists, but to a greater extent to the protection of the mental health of the population as a whole are becoming increasingly important. In this respect, the development of psychological care and social work in the country requires further special development and implementation. Alongside the aspiration of **'no health without mental health'**, the world has entered an era of a new aspiration - **'no sustainable development without mental health'**. This

vision requires significant and urgent investment at the international, national and community levels, not only in the health sector but also in other development sectors. The ratification of the United Nations Sustainable Development Goals (SDGs) in 2015 recognizes mental health and the prevention of mental disorders as specific targets for health systems. The use of epidemiological research methods opens up new opportunities for structural and dynamic assessment of primary morbidity and primary disability in mental disorders and the possibility of studying the public health impact on them. This applies primarily to measures for the prevention of pregnancy and childbirth, prevention of childhood infections, and prevention of severe trauma and poisoning. According to the current literature, primary prevention interventions for mental disorders should be divided into two groups.

Measures that have already been tested and proven to be effective, and measures that require further efforts on the part of the state and society as a whole to prove and realize their effectiveness. The first group of measures includes mental health education, education of children and adolescents, labor and recreation. The second is health care in general, including infection control, trauma and psychogenic influences, medical genetic counseling, women's counseling, etc. The second is health care in general, including infection control, trauma and psychogenic influences, medical genetic counseling, women's counseling. The program also provides counseling and childbirth care, early detection of developmental abnormalities, conflict prevention, psychological counseling, and substance use prevention. The quality of preventive care in administrative regions and federal districts can be assessed by the criterion of preventing disability due to mental disorders and by the criterion of reducing primary morbidity (primary diagnosis, primary detection). This assessment can be carried out for such groups of

disorders as mental disorders in general, psychoses and dementia, non-psychotic mental disorders, mental retardation, psychotic and non-psychotic mental disorders with epilepsy. The general trend towards a decrease in the primary morbidity rate of psychiatric disorders observed in the country as a whole and in the federal districts is particularly characteristic of personality disorders in adulthood, as well as neurotic, stress-related and somatoform disorders. This is due to a reduction in the negative impact of psychosocial factors on the population factors. Thus, epidemiology on psychiatry diseases in Russia could be characterized by the fact that over a longer time period, from 2000 to 2015, differences in the levels of show-and-tell were assessed as statistically significant, but arranged in a different sequence. Also, there is an obvious difference in ethno-cultural factors on psychiatry morbidity within the Russian Federation which also confirms the significance of epidemiological overview of psychiatry epidemics process throughout BRICS, Asian and African countries.

Russian Federation

Total situation on epidemiology of psychiatry diseases in Russia could not be estimated as stable. An analysis of the state of regional and municipal psychiatric services in the Russian Federation in comparison with the indicators of general and primary morbidity of mental disorders is necessary to determine the directions of reforming psychiatric care in the country. The main condition for the development of services is a balanced combination of inpatient and outpatient psychiatric care. On some epidemiology data the Finno-Ugric group ranked first in terms of the indicator value, then followed the Slavic, united Turkic and Mongolian groups. The North Caucasian population group had the lowest indicator. The data from a study of 300

schizophrenia patients who were hospitalized and undergoing dispensary observation in the Republic of Dagestan in 2015 are of interest from a demographic perspective. Regardless of whether the schizophrenic patients were disabled or not, there were no statistically significant differences between them in terms of nationality and urban or rural residence. In both the entire group of schizophrenia patients and the subgroup of schizophrenia patients with disabilities, an equally statistically significant majority of patients had secondary or higher education, lived in favorable housing conditions, and had a family and children. Statistically significant differences between the entire group of schizophrenia patients and the subgroup of schizophrenia patients with disabilities were found in terms of employment and duration of illness. Schizophrenia patients with disabilities were less likely to be employed and more likely to have illness duration of more than 5 years. Differences by age at onset were not statistically significant. On the basis of a 25-year nationwide observation, a chronological relationship between the dynamics of indicators characterizing the normal and pathological course of pregnancy and childbirth and the dynamics of indicators of primary morbidity and primary disability in mental disorders has been established. According to the data obtained, the response rate of primary morbidity and primary disability in mental disorders to the onset and continuation of the dynamics of indicators characterizing normal or pathological pregnancy and childbirth was measured in 15-year or 5-year periods. It has also been noted that the speed of response can be very fast (from the beginning the processes are synchronous).

There may be no response at all. The results of the study confirmed the hypothesis that there is a causal relationship between the state of health of pregnant women and women in labor, the state of mental health of their offspring and the state of

mental health of the population as a whole. On the basis of 20 years of observation, a chronological relationship was established between the dynamics of indicators characterizing the use of traditional and innovative forms of organizing obstetric and gynecological care in the country and federal districts and the dynamics of primary morbidity rates of mental disorders. A chronological relationship between the dynamics of indicators characterizing infectious morbidity in childhood and the dynamics of indicators of primary morbidity and primary disability in mental disorders has been established. According to the data obtained, the speed of response of primary morbidity and primary disability rates in mental disorders to the onset and continuation of the dynamics of indicators characterizing the incidence of childhood infections can be measured in 15-year, 10-year or 5-year periods. For the incidence of some infections, there may be no response of mental health indicators. The results of the study confirmed the hypothesis that there is a causal relationship between infectious morbidity in children and the state of mental health of the population as a whole. Indicators of the primary morbidity rate of mental disorders have been analyzed in their comparison with indicators of the activity of health services in the prevention and treatment of infectious diseases in children.

A chronological link was established between the dynamics of mortality rates from some infectious and parasitic diseases in children under one year of age, the number of children who died and were discharged from infectious hospitals, and the number of infectious hospital beds, on the one hand, and the dynamics of primary morbidity rates of mental disorders, on the other. The results of the study confirmed the hypothesis that there is a causal relationship between the organization of prevention of infectious diseases in children and the state of mental health of

the population as a whole. According to the data of state statistical observation for the period from 1990 to 2015, a chronological relationship has been established between the dynamics of indicators of the nature of trauma, poisoning and other external influences, and the dynamics of indicators of primary morbidity and primary disability in mental disorders. The speed of response of mental health indicators to the beginning and continuation of the processes of dynamics of the listed influences can be measured in 15-year, 10-year or 5-year periods. Synchronized response of mental health indicators to brain injury has been noted. The hypothesis that there is a causal relationship between the state of mental health, the nature of these environmental factors and the preventive measures taken in the country in relation to them was confirmed. The statistical significance of these causal links, which is more pronounced than the national average, can be considered as a criterion of a comparatively higher quality of medical care organization in the region. In this connection, the structure and dynamics of the network of psychiatric services, the structure and dynamics of the human resource potential of medical and non-medical specialists are characterized for a number of regions. It has been established that measures of secondary prevention of psychiatric disorders (prevention of general morbidity by aggravating mental disorders) should be aimed at improving the quality of psychiatric care by ensuring the sustainability of its human resources and its accessibility to the population. The example of epilepsy shows approaches to the organization of treatment care in recent decades with its division between neurologists and psychiatrists in accordance with the ICD-10 criteria. There has been a decrease in the stigmatization of epilepsy patients, who previously were mostly referred to psychiatrists. Morbidity, or prevalence, is defined as the total number of patients, which includes those previously reported and those who became newly

ill during the year. Depending on the depth of the retrospective analysis, prevalence can be measured at a point in time, in which it reflects the number of persons who have the disorder under study at a given time; year prevalence, which reflects the number of persons who became ill in the year preceding the survey; and lifetime prevalence, which reflects the presence of mental disorders during a person's lifetime. These indicators are calculated per 100, 1,000, 10,000 or 100,000 population.

Asia

As is known, Asia is the largest continent in the world in terms of area, with more than 3.5 billion people (more than 50 percent of the world's population). The main dynamically developing states of this region - Japan, China and India - are characterized by very high population density and different socio-economic and cultural living conditions. According to the World Bank classification, these states are classified as high, lower-middle and low-income countries, respectively. The resources of mental health services in these countries also differ significantly ^[2-7]. For example, Japan has 9.4 and 59 psychiatrists and nurses per 100,000 population, respectively, while China and India have 1.3 and 2; 0.2 and 0.05, respectively. Obviously, these indicators of mental health staffing, as well as other socioeconomic indicators, cannot but influence the reliability of epidemiological indicators and the quality of mental health services in the region. In addition, given the huge populations of China and India (about 1.5 billion and 1.2 billion, respectively), special conditions of sample formation (volume of material, its representativeness, adaptation of diagnostic tools, etc.) must be observed in order to make adequate national estimates of morbidity. Let us focus on individual countries of the Asian region. Japan. In recent years, national and cross-national

epidemiologic studies ^[8, 9, 13] using the WMH-WHO version of the CIDI interview and the DSM-IV have shown that morbidity (based on 12-month rates) for the major groups of mental disorders in Japan was very low compared with similar rates in Western countries. Table 3 shows the values of morbidity rates based on epidemiologic surveys of urban and rural populations in four prefectures in Japan ^[8]. The total number of people surveyed was more than 1600.

As can be seen from the data presented in Table 3, among all identified disorders, 17 percent could be categorized as severe and 47 percent as moderate disorders. The researchers attribute the low rates of alcohol and drug addiction to the strict state policy in this area. The authors note the generally low rate of people seeking help from mental health services - even among those with serious mental disorders, only about 20 percent of this category of patients sought specialized help. On this basis, it is concluded that the main task of improving mental health policy in Japan is to work with the population in the field of psychiatric education, as well as to ensure accessibility of mental health services.

People's Republic of China

Epidemiologic studies in China conducted in recent years ^[15, 18, 23, 24], have been devoted to the study of the prevalence of disorders in individual localities and provinces such as Beijing and Shanghai on relatively small samples of 1,000-3,000 people. For comparison, it should be noted that in countries in Europe, Latin America, and Africa with smaller and more populations, sample sizes ranged from 2,000 to 5,000, and in the United States - up to 10,000 people ^[19, 20, 22]. Table 4 shows the results of studies of the prevalence of major mental disorders (for 12 months) in Beijing and Shanghai in the period 2002-2003 ^[20]. ^[20], in ^[12, 14, 15, 18], the difficulties of conducting epidemiologic studies

in China are discussed. In this regard, it seems to us that generalizing the results obtained or making any predictions based on the results of surveys in China should be done with some caution.

Republic of India

In terms of the mental health care system in that country, it should be noted that, traditionally, India's mental health service has had very modest human and other resources. Thus, according to a review by the Indian Ministry of Health ^[17] and work ^[5], the rate of psychiatrists was only 0.2 per 100,000 populations, which is similar to that of Central African states, some of which are at the feudal stage of development. The existing shortage of psychiatric personnel and other resources in the country, some provinces of the country are trying to replace it with public forms of assistance to the mentally ill and their families, which is provided by various non-governmental, non-profit organizations and associations. National-level epidemiologic studies have been conducted using diagnostic tools with vague characteristics and descriptions ^[1, 16]. Morbidity estimates were based on the results of 10 studies conducted between 1973 and 2000 on different population groups, among which there were samples that did not meet accepted international standards for epidemiologic studies. Table 5 presents the average morbidity rates (lifetime) for major mental disorders. In our opinion, as in the case of China, these results have significant errors and can be used with significant reservations.

Conclusion

In all regions of the world there is an increase in the prevalence of morbidity of the population with mental disorders, especially depressive and anxiety disorders, and a corresponding

increase in the burden of loss due to these disorders. The current socio-economic conditions of the population do not contribute sufficiently to the stabilization of the state of mental health of the population. The least stable situation is observed in low-income states. A qualitative and timely assessment of morbidity and morbidity is necessary in order to effectively allocate the limited material resources allocated in the field of mental health care and to reduce losses due to mental disorders. The issues of prevention, diagnosis and adequate treatment (primarily of depressive states and disorders) within the framework of primary health care require special attention. Modern schemes of epidemiological research should be implemented taking into account the sociocultural level of the population (adaptation of diagnostic tools, quality training and education of personnel), as well as the clear use of statistical criteria and requirements in the collection and analysis of information obtained in the course of research. In our opinion, in the absence of regular monitoring of the state of mental health of the population, the use of morbidity assessments based on 12-month studies presents more reliable results compared to lifetime morbidity assessments.

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1 Mental Health and Artificial Intelligence (AI) in healthcare

**Siti Rahayu
Cory**

“Mental health is an extremely important public health issue and that mental well-being is fundamental to a good quality of life and the productivity of individuals, families and communities. The Ministers resolved to collaborate in promoting mental health and well-being in order to bring better health and socio-economic benefits”.

(The BRICS Health Ministers, Moscow, October 30, 2015) ^[28]

The BRICS (Brazil, Russia, India, China, and South Africa) coalition comprises a significant association of fast-growing economies, as articulated by the Russian Government's statement on its website. BRICS, an acronym derived from the initial letters of its member countries, was first conceptualized by Mr. Vladimir V. Putin, President of the Russian Federation, in 2006. Initially coined as BRIC, the association expanded with South Africa's inclusion in 2011. Since 2009, the coalition has convened annual summits of its heads of states. The inaugural formal summit, with all five members, was convened in Yekaterinburg, Russia, in June 2009, while the first five-member summit occurred in China in 2011. The most recent summit was held in Fortaleza, Brazil, in July 2014. Beyond the annual summits, BRICS engages in various high-level formats of interaction, including Meetings of Foreign Ministers, High Representatives responsible for national security affairs, Ministers of Finance and Central Bankers, Ministers of Health,

Agriculture, and Heads of Statistical Agencies. The collective population of the five BRICS countries amounts to 45 percent of the world's population, covering 30 percent of the Earth's territory, and boasting a combined nominal GDP representing 25 percent of the world GDP ^[14].

BRICS is a political and economic grouping comprising five major emerging economies: Brazil, Russia, India, China, and South Africa. Since 2009, these countries have collaborated to foster economic cooperation, trade, and investment among themselves. A primary objective of the BRICS nations is to challenge the dominance of Western powers in the global economy. They seek to establish a more equitable and balanced international economic order founded on mutual respect and cooperation. To facilitate their goals, the BRICS countries have established various mechanisms for political and economic cooperation, including the BRICS Summit, the BRICS Business Council, and the BRICS Development Bank. These institutions serve as platforms for member countries to address common issues and challenges, and to devise joint strategies for addressing them.

Indonesia, although not a member of BRICS, has engaged in various BRICS-related initiatives, such as the BRICS Business Forum and the New Development Bank (NDB) meetings. While expressing interest in strengthening economic ties with BRICS countries, Indonesia has signed several bilateral agreements with them. Despite not being a formal member, Indonesia plays a crucial role in the ASEAN region and works towards enhancing economic integration with neighboring countries, including BRICS members. During the latest BRICS summit in South Africa in August 2023, China advocated for inviting new members to the forum, with Indonesia being considered by all five BRICS member governments. Indonesia's potential value for BRICS is evident due to its large population, rapidly growing

economy poised to become one of the world's top five economies by 2045, and strategic influence in Southeast Asia, a region where major powers like the United States and China vie for influence.

However, Indonesia was not among the six countries selected for potential BRICS membership, despite submitting a letter of interest. President Joko Widodo publicly stated that Indonesia opted not to submit a letter of interest to allow more time for studying the benefits and drawbacks of BRICS membership, particularly in the economic domain, and to consult with ASEAN partners. Joining BRICS could be interpreted in the West as a shift towards the Chinese camp, potentially impacting Indonesia's balanced foreign policy approach. Such a move could affect the credibility of Indonesia's long standing "free and active" doctrine, which emphasizes strategic independence and engagement with multiple global powers ^[29].

Mental health has been a secondary agenda item for prominent global forums such as the G20, G7, and BRICS. Leading up to the 2023 G20 summit in New Delhi, the health ministerial meeting did not prioritize mental health but extended support to the World Health Organization, notably endorsing its Gujarat Declaration on Traditional Medicine. While the G20 has demonstrated fleeting attention to mental health, it largely follows the lead of the G7 in this regard, as evidenced by its 2023 Hiroshima Summit. Responses to mental health challenges can be strengthened and rendered more effective by integrating mental health interventions firmly within national health policies and plans. Moreover, the development of dedicated mental health policies and plans can provide more detailed guidance and direction. Therefore, as part of the BRICS countries and the global community, it is imperative to prioritize understanding mental health issues, leveraging Artificial Intelligence (AI)

technologies, integrating mental health education into curricula both domestically and internationally, and engaging in open discussions to pave the way for a better future, particularly in combating mental disorder.

Mental Health and Human Behavior

“We can see other people’s behavior, but not their experience. The other person’s behavior is an experience of mine. My behavior is an experience of the other. The task of social phenomenology is to relate my experience of the other’s behavior to the other’s experience of my behavior.” (R.D. Laing, (Ye olde xero xenford annvaire 2008/2009, A congeries of writings by Paul Green) ^[25].

The ego is often described as the executive of the personality because it manages the gateways to action, selects which features of the environment to respond to, and decides how to satisfy instincts. Personality theory has historically played a dissenting role in the field of psychology. Personality theorists have often been seen as rebels, challenging conventional ideas, practices, methods, and theories in medicine, experimental sciences, and research techniques. The personality is conceptualized as consisting of three major systems: the Id, the ego, and the superego. Behavior typically results from an interaction among these three systems, rather than any one system operating independently. Personality development is influenced by four primary sources of tension: physiological growth processes, frustrations, conflicts, and threats. Two common methods of resolving frustrations, conflicts, and anxieties are identification and displacement ^[5]. For a comprehensive discussion of Freud’s theory of learning, readers may refer to Hilgard and Bower (1966).

Intelligence resides in the brain, but the mind's location is not necessarily confined to the brain. The normal mind encompasses not only the cognitive ability to think and acquire knowledge but also the capacity for emotional response and integration, muscular coordination, nerve function, and more. Therefore, when we refer to a disordered mind, we are not necessarily implying a disordered intelligence or a malfunctioning brain. Rather, we are referring to a disruption in the ability to react effectively. In cases of personality disorder, there is often an accompanying emotional disturbance. Emotions play a crucial role in shaping personality, and disruptions in emotional functioning can lead to mental disorders ^[6].

Mental health is an essential component of overall health and well-being, as highlighted in the World Health Organization's definition of health, which encompasses complete physical, mental, and social well-being rather than just the absence of disease or infirmity. Socioeconomic factors can significantly impact mental health, necessitating comprehensive strategies encompassing promotion, prevention, treatment, and recovery through a whole-of-government approach ^[38].

Increasingly, mental disorders are acknowledged as significant contributors to the global disease burden. The WHO recognizes mental health as a fundamental human right crucial for the development of all nations. The Lancet Commission advocates for greater investment in mental health services as part of Universal Health Coverage (UHC) and emphasizes the importance of integrating these services into global health responses. Addressing the mental health needs of individual countries requires a deep understanding of the impact of these disorders, including their prevalence in the population, their health burden, and broader health implications. Mental disorders persist as leading causes of global burden, with no evidence of a

reduction in burden since 1990. Estimated Years of Life Lost (YLLs) due to mental disorders remain disproportionately low and do not adequately account for premature mortality among individuals with mental disorders. Research aimed at establishing causal pathways between mental disorders and other fatal health outcomes is recommended to inform strategies within the Global Burden of Disease (GBD) study.

To alleviate the burden of mental disorders, coordinated efforts from governments and the global health community are crucial for delivering effective prevention and treatment programs. The WHO's special initiative for mental health has played a pivotal role in expanding community mental health services, reaching an additional 50 million people, including at least 320,000 individuals receiving services for mental, neurological, and substance use conditions for the first time ^[15].

Mental Disorder or Mental Illness?

The distinction between mental disorder and mental illness is often subtle, with the two terms used interchangeably. However, there are nuanced differences:

1. **Mental Disorder:** This is a broad term encompassing any condition that affects an individual's thinking, feeling, behavior, or mood. It includes a wide range of conditions, such as anxiety disorders, mood disorders, psychotic disorders, and personality disorders. Mental disorders are typically diagnosed based on specific criteria outlined in diagnostic manuals like the Diagnostic and Statistical Manual of Mental Disorders (DSM).
2. **Mental Illness:** This term is commonly used in colloquial language to refer to conditions affecting mental health and well-being. It can include both diagnosed mental disorders and other mental health issues that may not meet specific diagnostic criteria. Mental illness is a more general term that

encompasses any condition impacting a person's mental health.

In summary, mental disorder is a clinical term used for diagnosing specific conditions based on established criteria, while mental illness is a broader term covering a range of mental health issues. In the book, ten mental disorders are discussed: Depressive Disorder, Anxiety Disorder, Bipolar Disorder, Narcissistic Personality Disorder (NPD), Schizophrenia, Autism Spectrum Disorders, Conduct Disorder, Attention Deficit Hyperactivity Disorder (ADHD), eating disorders, and Idiopathic Developmental (ID)/ Intellectual Disability Disorder (IDD). Further knowledge about each disorder is outlined below.

1. Depressive disorder

Depression is a prevalent mental disorder characterized by a persistent depressed mood or loss of interest or pleasure in activities over an extended period. Unlike typical mood fluctuations, depression significantly impacts daily functioning and quality of life. Approximately 3.8 percent of the global population, totaling around 280 million individuals, experience depression.

The development of depression involves a complex interplay of social, psychological, and biological factors. Prevention programs have demonstrated efficacy in reducing the incidence of depression. Effective community-based prevention strategies include school-based programs aimed at fostering positive coping patterns in children and adolescents. Various psychological treatments have been found effective in managing depression, including behavioral activation, cognitive behavioral therapy, interpersonal psychotherapy, and problem-solving techniques ^[40]. While mental health professionals have expressed concerns regarding the role of

spirituality and religion in the lives of individuals diagnosed with severe mental disorders, there is growing recognition of spirituality's potential positive impact on psychiatric rehabilitation and recovery. Both clinical observations and research findings support the increased acceptance of spirituality as a beneficial component in mental health treatment and recovery processes ^[12].

While believing in God and embracing spirituality can indeed provide comfort and support for individuals facing depression, it's essential to recognize that religious beliefs and practices may not be suitable for everyone. It's not appropriate to impose religious beliefs on individuals struggling with mental health issues. However, for those who find solace in their faith, it can be a source of strength and resilience. Beyond spirituality, self-care practices are crucial for managing symptoms of depression and promoting overall well-being. These include engaging in activities that bring joy, maintaining social connections, regular exercise, healthy eating and sleeping habits, avoiding substance misuse, seeking support from trusted individuals, and consulting with healthcare providers ^[36].

Moreover, evidence suggests that up to 60 percent of individuals with depression can experience significant improvement with a combination of antidepressant medications and psychotherapy. Similarly, up to 70 percent of individuals with epilepsy can achieve seizure control with simple and affordable anticonvulsant medications ^[40]. It's important for individuals facing mental health challenges to explore various treatment options and seek professional guidance to determine the most appropriate approach for their needs.

2. Anxiety disorders

Anxiety is characterized by heightened sensitivity to perceived threats. Cognitive biases observed in individuals with anxiety disorders include a tendency to subconsciously focus attention on personally relevant threat stimuli and interpret ambiguous information in a manner consistent with potential threats. Symptoms of anxiety disorders typically manifest as prototypical fear, involving escape behaviors, physiological arousal, and thoughts of imminent threat, as well as prototypical anxiety, characterized by avoidant behaviors, tension, and anticipation of future threats. These symptoms are related to but distinct from those of depression [10].

Due to the prevalence of anxiety disorders, guidelines include recommendations for addressing anxiety symptoms. These recommendations include:

- a. Offering psychological interventions based on cognitive behavioral therapy (CBT) to adults with generalized anxiety disorder and/or panic disorder. These interventions may be delivered in various formats, including online, in-person, group settings, or self-guided.
- b. Considering stress management techniques for adults with generalized anxiety and/or panic disorder.
- c. Considering Selective Serotonin Reuptake Inhibitors (SSRIs) as a treatment option for adults with generalized anxiety and/or panic disorder [36].

In such reactions, anxiety is diffuse and not limited to specific situations or objects, as observed in phobic reactions. It is not controlled by specific psychological defense mechanisms, as seen in other psychoneurotic reactions. This type of reaction is characterized by anxious anticipation and

often accompanied by somatic symptoms. It is differentiated from normal apprehension or fear and was previously referred to as "anxiety state" or "anxiety neurosis" [6].

3. Bipolar disorder

Bipolar disorder is a chronic and recurrent condition characterized by fluctuating symptoms. Individuals with bipolar disorder often experience complex trajectories of episodes, with recovery typically occurring gradually over time. The persistent and disabling nature of the disorder significantly impacts the individual's functioning and relationships with others [11]. Formerly known as manic depression, bipolar disorder entails extreme mood swings encompassing emotional highs (mania or hypomania) and lows (depression). These mood swings may occur infrequently or multiple times a year. While some individuals may experience emotional symptoms between episodes, others may not. Although bipolar disorder is a lifelong condition, it can be managed through various treatment approaches. Typically, treatment involves a combination of medications and psychological counseling (psychotherapy).

There are several types of bipolar and related disorders, all characterized by unpredictable mood and behavioral changes that cause distress and impair daily functioning. These include Bipolar I disorder, Bipolar II disorder, Cyclothymic disorder, and other specified and unspecified types. Bipolar disorder can manifest at any age, although it is commonly diagnosed in the teenage years or early adulthood. Symptoms vary among individuals and may change over time. Both manic and hypomanic episodes are marked by the presence of three or more of the following symptoms: abnormally elevated mood, increased energy or activity levels, inflated self-confidence, decreased need for sleep,

excessive talkativeness, racing thoughts, distractibility, and poor decision-making. Factors that may increase the risk of developing bipolar disorder or trigger the first episode include a family history of the disorder, periods of high stress or traumatic events, and substance abuse. While there is no guaranteed method for preventing bipolar disorder, seeking treatment at the earliest signs of a mental health disorder can help mitigate its progression.

For individuals diagnosed with bipolar disorder, implementing strategies to recognize warning signs, avoiding substance abuse, and adhering to medication regimens can help prevent minor symptoms from escalating into full-blown episodes of mania or depression ^[8].

4. Narcissistic Personality Disorder (NPD)

Narcissistic Personality Disorder (NPD) is a mental health condition characterized by an exaggerated sense of self-importance, a constant need for excessive admiration, and a lack of empathy for others. While individuals with NPD may appear confident and self-assured on the surface, they often harbor deep-seated insecurities and are easily wounded by criticism. This disorder can significantly impact various aspects of life, including relationships, work, and overall well-being. Treatment for NPD primarily involves psychotherapy, aimed at addressing underlying psychological issues and helping individuals develop healthier coping mechanisms and interpersonal skills. NPD tends to affect more males than females and typically emerges during the teenage years or early adulthood. While some children may exhibit narcissistic traits, it does not necessarily indicate the development of NPD later in life. Symptoms of NPD can vary in severity and may include:

- a. An exaggerated sense of self-importance and entitlement
- b. Constantly seeking admiration and validation from others
- c. Fantasizing about success, power, or superiority
- d. Believing they are superior to others and deserving of special treatment
- e. Lacking empathy and disregarding the needs and feelings of others
- f. Reacting angrily or defensively to criticism or perceived slights
- g. Having difficulty maintaining meaningful relationships
- h. Exploiting others for personal gain
- i. Feeling envious of others or believing others envy them
- j. Displaying arrogant or haughty behavior
- k. Expecting special privileges or favors without reciprocation
- l. Individuals with NPD may struggle to manage their emotions and behaviors, experiencing mood swings, depression, and feelings of insecurity beneath their outward confidence.

NPD is thought to be influenced by a combination of temperamental vulnerability, psychological adversity, and sociocultural factors, particularly those associated with modernity and individualism. While psychotherapy remains the primary treatment approach for NPD, it's crucial to tailor interventions to address the specific challenges associated with the disorder and avoid reinforcing narcissistic tendencies [9, 27].

5. Schizophrenia

Schizophrenia is a syndrome clinically characterized by abnormal constructions of meaning during comprehension (delusions), perception (hallucinations), action (disorganized

and non-goal-directed behavior), and language production (thought disorder). Delusions are fixed beliefs that are not amenable to change in light of conflicting evidence. Their content may include a variety of themes (e.g., persecutory, referential, somatic, religious, grandiose). Hallucinations are perception-like experiences that occur without an external stimulus. They are vivid and clear, with the full force and impact of normal perceptions, and not under voluntary control. They may occur in any sensory modality, but auditory hallucinations are the most common in schizophrenia and related disorders. Auditory hallucinations are usually experienced as voices, whether familiar or unfamiliar, perceived as distinct from the individual's own thoughts. The hallucinations must occur in the context of a clear sensorium; those that occur while falling asleep (hypnagogic) or waking up (hypnopompic) are considered within the range of normal experience. Hallucinations may be a normal part of religious experience in certain cultural contexts.

Disorganized thinking (formal thought disorder) is typically inferred from the individual's speech. The individual may switch from one topic to another (derailment or loose associations). Answers to questions may be obliquely related or completely unrelated. Rarely, speech may be so severely disorganized that it is nearly incomprehensible and resembles receptive aphasia in its linguistic disorganization (incoherence or "word salad") ^[1].

Despite the chronic and long-term nature of some mental disorders, with proper treatment, people suffering from mental disorders can live productive lives and be vital parts of their communities. Over 80 percent of people with schizophrenia can be free of relapses at the end of one year of treatment with antipsychotic drugs combined with family

intervention. Schizophrenia is one of the most serious psychiatric disorders, carrying a lifetime risk of approximately one percent. Schizophrenia was divided into five subtypes, including disorganized schizophrenia, paranoid schizophrenia, residual schizophrenia, undifferentiated schizophrenia, and catatonic schizophrenia according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-V). In 2013, the American Psychiatric Association (APA) combined all subtypes under the general category of Schizophrenia ^[17].

Each year, one in 10,000 adults (12 to 60 years of age) develops schizophrenia. Based on a restrictive and precise definition of the diagnosis and using standardized assessment methods and large, representative populations, the incidence rates appear stable across countries and cultures and over time, at least for the last 50 years. Schizophrenic patients are not born into ecological and social disadvantage. The uneven distribution of prevalence rates is a result of social selection: an early onset leads to social stagnation, a late onset to descent from a higher social status. The main age range of risk for schizophrenia is 20 to 35 years. It is still unclear whether schizophrenia-like late-onset psychoses (e.g., late paraphrenia) after age 60 should be classified as schizophrenia either psychopathological or etiologically. In 75 percent of cases, the first admission is preceded by a prodromal phase with a mean length of 5 years and a psychotic prophase of one year's duration. On average, women fall ill 3 to 4 years later than men and show a second peak of onset around menopause. Consequently, late-onset schizophrenias are more frequent and more severe in women than in men. The sex difference in age of onset is smaller in cases with a high genetic load and greater in cases with a low genetic load. The type of onset and core symptoms do not differ between the sexes. The most

pronounced sex difference is the socially negative illness behavior of young men.

Approximately 5–6 percent of individuals with schizophrenia die by suicide, about 20 percent attempt suicide on one or more occasions, and many more have significant suicidal ideation. Suicidal behavior is sometimes in response to command hallucinations to harm one-self or others. Suicide risk remains high over the whole lifespan for males and females, although it may be especially high for younger males with comorbid substance use. Other risk factors include having depressive symptoms or feelings of hopelessness and being unemployed and the risk is higher, also, in the period after a psychotic episode or hospital discharge ^[1].

6. Autism Spectrum Disorder

Pervasive developmental disorders (PDDs), now commonly referred to as autism spectrum disorders (ASDs), encompass a spectrum of severity and impairments, often leading to significant disability and representing a major public health concern. Diagnosis typically involves identifying delays or abnormal functioning in social interaction, language, and/or imaginative play within the first three years of life, deviating from expected developmental patterns for age. Given the possibility of diagnosing ASD as early as 18-24 months, clinicians aim to initiate interventions promptly upon observing signs. Efforts are increasing to make ASD screening universal in pediatric healthcare. According to the American Psychiatric Association's DSM-V, PDDs include autistic disorder, Asperger's disorder, PDDs not otherwise specified (PDD-NOS), childhood disintegrative disorder (CDD, Heller's syndrome), and Rett's disorder. These disorders share qualitative impairments in social

interaction, along with varying degrees of communication deficits and marked repetitive behaviors and restricted interests.

While true recovery from autism is not documented, educational, psychosocial, and language therapies, often combined with adjunctive treatments like drug therapy for specific symptoms, offer established benefits. The complex nature of ASD necessitates a multidisciplinary team for accurate diagnosis and clinical care ^[4]. Following an autism diagnosis, individuals and their caregivers should be provided with relevant information, services, referrals, and practical support tailored to their evolving needs and preferences. Comprehensive health-care services for people with autism should integrate health promotion, care, and rehabilitation, often involving collaboration across sectors such as education, employment, and social care ^[34]. Many adults with autism spectrum disorder, especially those without intellectual or language disabilities, learn to manage repetitive behaviors in public. Special interests can serve as sources of pleasure, motivation, and avenues for education and employment. Even if symptoms are not currently present, a diagnosis of autism may still be applicable if restricted, repetitive patterns of behavior, interests, or activities were evident during childhood or in the past ^[1]. Standardized behavioral diagnostic instruments, including caregiver interviews, questionnaires, and clinician observation measures, contribute to the reliability of diagnosis across time and clinicians.

7. Conduct Disorder (CD)

Conduct Disorder (CD) is a type of behavior disorder characterized by antisocial behavior in children. This behavior may include disregarding basic social standards and rules, irresponsibility, truancy or running away (delinquent

behavior), theft, or other actions that violate the rights of others, and even physical harm to animals or people, such as assault or rape. While these behaviors may occur together, one or more may also manifest independently. Various factors contribute to the development of conduct disorder, including brain damage, traumatic events, genetic predispositions, experiences of child abuse, past academic struggles, and social difficulties. Additionally, children with mental health issues, such as mood or anxiety disorders, post-traumatic stress disorder (PTSD), substance use disorder, attention-deficit/hyperactivity disorder (ADHD), or learning problems, are at a higher risk of developing conduct disorder. Moreover, children or adolescents with difficult temperaments are more prone to behavior problems.

Treatment for conduct disorder typically involves a multi-faceted approach, which may include cognitive-behavioral therapy, family therapy, peer group therapy, and, in some cases, medication. The exact reasons why some children develop conduct disorder remain unclear, although traumatic experiences, social challenges, and biological factors are believed to play a role. Parents can reduce the risk of conduct disorder by adopting positive parenting strategies, fostering a close parent-child relationship, and maintaining a safe and stable home environment. The worldwide prevalence of CD is estimated to be around 2 -- 2.5 percent, with higher prevalence rates in boys (3--4 percent) compared to girls (1--2 percent). While these figures suggest relatively low occurrence rates at any given time, studies indicate that approximately 10 percent of individuals may experience CD at some point during childhood or adolescence. Whether the prevalence of CD has changed over time remains a topic of debate, with some studies suggesting an increase in recent

decades and others indicating minimal changes. Additionally, CD is approximately twice as common in males compared to females, a trend observed across different geographical regions.

8. Attention Deficit Hyperactivity Disorder (ADHD)

Attention Deficit Hyperactivity Disorder (ADHD) is a neurobiological and neurodevelopmental disorder with a strong genetic component. It manifests with various characteristics, including inattention, hyperactivity, and impulsivity, which can lead to significant functional impairment over time. Individuals with a family history of ADHD have a significantly increased risk of developing the disorder, indicating a genetic basis. The abnormal brain structure observed in ADHD results in altered neural mechanisms affecting cognitive functions such as attention and memory ^[31], ADHD is among the most common mental disorders, affecting around 5–8 percent of children, predominantly boys, and often persisting into adulthood ^[2]. Its prevalence is consistent across cultures, affecting about 5 percent of children and 2.5 percent of adults ^[1].

Symptoms of ADHD vary among individuals, ranging from predominantly poor attention to predominantly hyperactivity and impulsivity, or a combination of both. While ADHD cannot be cured, treatment can help manage symptoms and improve functioning at home and school. A specialist should develop a treatment plan, with effective communication and teamwork between doctors, parents, and school teachers being crucial for its implementation.

The exact causes of ADHD are not fully understood, but factors such as genetics, traumatic experiences in childhood, premature birth and brain injury, exposure to environmental toxins, and maternal substance use or stress during pregnancy

may play a role. Additionally, ADHD symptoms have been associated with Problematic Internet Use (PIU), measured through standardized questionnaires assessing addictive behaviors related to the internet. While cross-sectional analyses cannot establish cause-and-effect relationships, some researchers hypothesize that attention deficit, hyperactivity, and impulsivity may predispose individuals to PIU [2].

9. Eating Disorders

Eating disorders profoundly impact both physical and mental health, encompassing difficulties in how individuals perceive food, eating, weight, and body shape, as well as in their eating behaviors. These symptoms can detrimentally affect health, emotions, and overall functioning in crucial life domains. Most eating disorders involve an excessive preoccupation with weight, body shape, and food, leading to harmful eating behaviors that can compromise nutritional intake and harm various bodily systems including the heart, digestive system, bones, teeth, and mouth. Moreover, eating disorders are associated with an increased risk of other diseases and are often linked with depression, anxiety, self-harm, and suicidal thoughts and behaviors.

Symptoms of eating disorders vary depending on the specific type, with anorexia, bulimia, and binge-eating disorder being the most common variants. Importantly, individuals with eating disorders can present with diverse body types and sizes [7].

The exact cause of eating disorders remains unclear, although factors such as genetics and biological factors, including changes in brain chemicals, are believed to contribute. Treatment for eating disorders is tailored to the

individual's specific diagnosis but typically involves education about proper nutrition, developing healthy eating habits, guidance in achieving a healthy weight if underweight, behavioral therapy (talk therapy), and, in some cases, medication ^[21]. Eating disorders represent severe mental illnesses with the second-highest mortality rate among psychiatric disorders. Their complexity stems from high rates of comorbidity with other psychiatric conditions, heterogeneous presentations, and individuals often transitioning between different eating disorder diagnoses.

Epidemiological studies have highlighted gender disparities in the prevalence of eating disorders, with anorexia nervosa (AN) and bulimia nervosa (BN) being more common among females. However, subthreshold binge eating disorder and certain eating disorder symptoms, such as binge eating, are comparable between genders. Girls and women are more likely to report weight dissatisfaction, dieting for weight control, and purging behaviors, while boys and men may report binge eating and excessive exercise for weight control at comparable or lower rates ^[32].

10. Idiopathic Developmental Disorder (IDD)/ Intellectual Disability Disorder (ID)

Intellectual disability (ID), also known as intellectual development disorder (IDD), is characterized by deficits in cognitive and adaptive abilities that emerge during the developmental period. In the United States, the prevalence of intellectual disability is estimated to be between 1 and 3 out of every 100 individuals in the general population. While most individuals with intellectual disability have mild impairments, the cause is often unidentified. However, a small percentage experience severe deficits, requiring lifelong support.

Diagnosis of intellectual disability entails formal psychometric testing to assess both intelligence quotient (IQ) and adaptive functioning. Management approaches include general medical care, treatment of specific behavioral symptoms, early intervention, special education, and varying degrees of community-based support. The conceptualization of intellectual disability has evolved over time, shaped by historical and societal factors. The notion of intelligence as a measure for classifying humans emerged in the twelfth century with the rise of towns and administrative structures. Scientific attention towards ID/IDD grew in the late eighteenth century, coinciding with movements emphasizing human freedom and dignity. Throughout history, definitions and diagnostic criteria for ID/IDD have varied, reflecting changing conceptualizations. From a vague notion of "mental deficiency," it evolved into a group of conditions characterized by below-average intellectual functioning and adaptive behavior, typically starting early in life. ID/IDD is influenced by numerous factors, including brain maturation, gene-environment interactions, cultural and educational influences, availability of support and training opportunities, as well as physical and mental health. Importantly, individuals with ID/IDD can continue to acquire skills and competencies, particularly with optimal care, training, support, education, and opportunities for learning. Understanding the features and vulnerability factors of ID/IDD across different age periods is essential for providing effective support and intervention.

Intellectual disability (Intellectual Development Disorder), as defined by the American Psychiatric Association (APA), is a disorder characterized by deficits in

both intellectual and adaptive functioning during the developmental period. The criteria for diagnosis include:

- a. Deficits in intellectual functions, encompassing reasoning, problem-solving, planning, abstract thinking, judgment, academic learning, and learning from experience. These deficits must be confirmed by both clinical assessment and individualized, standardized intelligence testing.
- b. Deficits in adaptive functioning resulting in failure to meet developmental and sociocultural standards for personal independence and social responsibility. Without ongoing support, these adaptive deficits limit functioning in one or more activities of daily life, such as communication, social participation, and independent living, across various environments like home, school, work, and community.
- c. Onset of both intellectual and adaptive deficits during the developmental period.

Additionally, the development of personality disorders and emotional disorders can be influenced by parental attitudes and experiences from infancy, including feeding practices. Breastfeeding, for instance, provides not only nutrition but also emotional support and comfort, contributing to the child's emotional well-being. Lack of maternal warmth and support during infancy can impact integrated personality development. The thyroid gland, located in the front of the neck, plays a crucial role in brain and physical development. It serves as the pacemaker of the body, governing brain development and physical growth. A deficiency in thyroid function, whether due to prenatal or postnatal factors, can lead to developmental delays and cognitive impairments. Administering thyroid hormone

supplements orally can help balance thyroid levels and mitigate associated anxiety and nervous system issues.

Mental Disorder in Worldwide

Depressive and anxiety disorders continue to be significant contributors to global burden, ranking 13th and 24th among leading causes of Disability-Adjusted Life-Years (DALYs), respectively. These disorders have high prevalence estimates and disability weights, exacerbating their impact on public health. Schizophrenia, although affecting a smaller proportion of the population, also ranks among the top 10 causes of years lived with disability (YLD) worldwide and is a leading cause of disability-adjusted life years (DALY) for individuals aged 15 to 44.

Individuals with schizophrenia often face significant socioeconomic challenges, with higher rates of educational attainment and unemployment compared to the general population. Many rely on welfare benefits as their primary source of income, highlighting the economic burden associated with the disorder. Moreover, a substantial proportion of individuals with schizophrenia experience chronic illness or significant clinical deterioration over time, underscoring the need for ongoing support and intervention ^[1].

Narcissistic personality disorder (NPD) presents challenges in diagnosis, with prevalence rates varying widely depending on the population studied and the setting. In community samples in the United States, prevalence rates range from 0.5 percent to 5 percent, whereas in clinical settings, rates can be higher, ranging from one percent to 15 percent of the population. NPD often coexists with other mental disorders, particularly substance use disorders further complicating diagnosis and treatment ^[22]. Addressing the burden of depressive

and anxiety disorders, schizophrenia, and narcissistic personality disorder requires comprehensive strategies that encompass prevention, early intervention, and access to appropriate mental health services. Additionally, addressing comorbid conditions and socioeconomic factors is essential for improving outcomes and reducing the overall burden of these disorders on individuals and society. According to data from Lancet Psychiatry in 2022, mental disorders have shown a notable increase in estimated cases, rising from 654.8 million in 1990 to 970.1 million in 2019, representing a 48.1 percent increase over this period. However, there were no significant changes observed in the age-standardized prevalence of mental disorders between 1990 and 2019. The age-standardized prevalence rates for mental disorders were largely consistent between males and females in 2019.

Depressive disorders, anxiety disorders, and eating disorders were more prevalent among females, while ADHD and autism spectrum disorders were more common in males. Depressive and anxiety disorders were the most common mental disorders across both sexes and years studied, while schizophrenia and eating disorders were among the least common.

Regarding regional patterns, Australasia, Tropical Latin America, and high-income North America had the highest prevalence of mental disorders overall. However, when examining individual disorders, different regional patterns emerged. For instance, the prevalence of depressive disorders was notably high in sub-Saharan Africa, North Africa, the Middle East, Australasia, Tropical Latin America, and high-income North America. These findings suggest variations in the prevalence of specific mental disorders across different regions globally. The prevalence and burden of mental disorders, including eating disorders, ADHD, conduct disorder, and autism spectrum disorders, varied across regions and demographic

groups. In high-income regions, the age-standardized prevalence of these disorders was highest. Eating disorders, particularly anorexia nervosa, accounted for a significant number of deaths globally in 2019, with a total of 318.3 deaths attributed to these conditions. The burden of mental disorders, measured in Disability-Adjusted Life Years (DALYs), increased from 1990 to 2019, with mental disorders accounting for 125.3 million DALYs in 2019, representing 4.9 percent of global DALYs. Depressive disorders were the leading cause of mental disorder DALYs in 2019, followed by anxiety disorders and schizophrenia. Burden due to mental disorders was evident across all age groups, with onset occurring before 5 years of age in individuals with idiopathic intellectual disability and autism spectrum disorders. The burden peaked between 25 and 34 years and decreased steadily after age 35. In 2019, mental disorders ranked seventh among the leading causes of DALYs globally.

The global distribution of mental disorder DALYs in 2019 by country mirrored trends in the prevalence of mental disorders, with higher DALY rates observed in countries such as the USA, Australia, New Zealand, Brazil, and select locations in western Europe, sub-Saharan Africa, and North Africa/Middle East. Lower DALY rates were observed in parts of Southeast Asia, East Asia, high-income Asia Pacific, and central Asia. Country-specific DALY rates varied, but generally fell within overlapping bounds of uncertainty. DALYs for depressive and anxiety disorders were particularly high in countries with elevated rates of childhood sexual abuse, intimate partner violence, and conflict and war. These findings underscore the global burden of mental disorders and highlight the need for comprehensive strategies to address prevention, early intervention, and access to mental health services across different regions and populations.

The burden of mental disorders, as measured by Disability-Adjusted Life Years (DALYs), has increased significantly from 1990 to 2019, despite relatively constant age-standardized DALY rates during this period. This growth is anticipated to persist due to population growth, emphasizing the urgent need for health systems, particularly in low-income and middle-income countries, to provide adequate treatment and care for this expanding population. Effective intervention packages for mental disorders exist and have the potential to alleviate the burden by reducing symptom severity, increasing remission rates, and lowering mortality risks. However, there are substantial gaps in access to these services globally, compounded by barriers such as perceived stigma and insufficient resource allocation.

Even in high-income countries where treatment uptake for mental disorders has increased since 1990, many individuals still do not receive treatment meeting minimally adequate standards, particularly those most in need. To address this, it's crucial to expand the delivery of effective prevention and treatment programs to cover a larger portion of the population for an appropriate duration. The emergence of the COVID-19 pandemic in 2020 has further exacerbated determinants of poor mental health outcomes, with direct psychological effects of the pandemic and long-term impacts on economic and social circumstances potentially increasing the prevalence of common mental disorders. While it's important to address the impact of COVID-19 on mental health, it's equally vital to address the pre-existing unmet mental health needs of the population. Regarding Pervasive Developmental Disorders (PDDs) or autism, epidemiological studies have shown a significant increase in estimated prevalence rates over time. Current estimates suggest rates of approximately 60/10,000, representing a nearly ten-fold increase compared to earlier reports. PDD NOS is the most

frequently diagnosed subtype, followed by autistic disorder, while Asperger's disorder is less common. Rett's disorder and CDD are very rare. Epidemiological surveys have found individuals with ASD in all regions studied, with roughly similar prevalence rates globally. A recent study by the CDC in the United States found an overall prevalence of approximately 1 percent for ASD in several regions. However, prevalence rates may vary across different countries and regions, and some areas, particularly in low- and middle-income countries, lack sufficient data on autism prevalence. ASD represents a significant public health concern worldwide, with about 1 in 100 children estimated to have autism ^[34].

Stereotype and stigma

Individuals with mental illness often contend with a dual challenge. Firstly, they must navigate the symptoms of their condition, which can range from recurrent hallucinations and delusions to anxiety and mood swings. These manifestations can impede their ability to work, live independently, or attain a satisfactory quality of life. Secondly, societal misconceptions about mental disorders breed stigma. Even those who effectively manage their mental illness to engage in employment often encounter significant hurdles in securing a job due to discriminatory practices by employers. Consequently, mental illness not only poses difficulties stemming from its symptoms but also engenders societal repercussions. Adding to the complexity, some individuals with mental illness may internalize prevailing prejudices about their condition, leading to a loss of self-confidence—a phenomenon known as 'self-stigma.' ^[30].

The World Health Organization defines stigma as a mark of disgrace that segregates individuals from others, leading to discrimination and negative attitudes towards those perceived as

different or deviant from societal norms. Stigma can be associated with various factors including health conditions, disabilities, race, ethnicity, gender, sexual orientation, and socioeconomic status. Recognizing stigma as a significant barrier to achieving health equity, the WHO advocates for efforts to diminish stigma and foster social inclusion. Furthermore, stigmatizing attitudes are underpinned by core assumptions. Two primary forms of stigma exist for individuals with mental illness: Public stigma and self-stigma. Public stigma encompasses the general public's reactions towards a stigmatized group, while self-stigma refers to the internalization of stigmatizing attitudes by individuals belonging to such groups. It is improbable that individuals with diverse disorders encounter identical stigmatizing attitudes or respond to discrimination in uniform ways. Despite the well-intentioned nature of current anti-stigma initiatives, further empirical research is imperative to discern the most effective strategies and content for diminishing stigmatizing attitudes and behaviors within specific target groups. Public stigma significantly impacts many individuals with mental illness, particularly when it culminates in self-stigma, and may disrupt various facets of life including employment, housing, healthcare, social interactions, and self-esteem. To support individuals with mental illness, enduringly effective anti-stigma campaigns are indispensable for mitigating public stigma within society ^[30].

In essence, stigma encompasses negative attitudes, beliefs, and stereotypes held within society towards individuals or groups perceived as diverging from the norm. This encompasses those with mental illnesses, disabilities, or who identify as part of marginalized groups. Stigma fosters discrimination, exclusion, and prejudice, profoundly affecting the lives of those subjected to it. It's imperative to confront and combat stigma to foster equality and inclusivity for all individuals.

Global Strategy

The Comprehensive Mental Health Action Plan underscores the critical importance of effective governance and strong leadership in crafting policies and plans to address mental health issues. A mental health policy serves as an official declaration by a government, outlining a vision along with a set of values, principles, and objectives, and delineating an overarching plan of action to enhance the mental well-being of a populace. Such policies ought to entail a comprehensive strategy with tangible strategies and activities, complete with established timelines and resource requirements. Mental health policies and plans may either stand independently or be integrated into broader health or disability frameworks. They are deemed authoritative if sanctioned or publicized by the ministry of health, other pertinent line ministries, or the nation's parliament.

The burden of addressing mental health issues falls squarely on governments. However, as of 2001, more than 40 percent of countries lacked a mental health policy, while over 30 percent had no mental health program, and approximately 25 percent had no mental health legislation. This glaring disparity between the magnitude of the mental health burden and the response it necessitates remains evident. Presently, more than 33 percent of countries allocate less than one percent of their total health budgets to mental health, with another 33 percent spending just one percent on mental health initiatives. Furthermore, the availability of essential medications for treating common mental disorders is insufficient in about 25 percent of countries, where primary healthcare lacks the three most commonly prescribed drugs for schizophrenia, depression, and epilepsy. Moreover, over half of the world's countries have just one psychiatrist per 100,000 people and 40 percent have less than one hospital bed designated for mental disorders per 10,000

individuals. The burden of mental disorders disproportionately affects the poor, who face a higher risk of mental illness and lack access to treatment. Factors such as constant exposure to severe stress, hazardous living conditions, exploitation, and overall poor health contribute to their heightened vulnerability. The lack of affordable treatment exacerbates the severity and debilitation of mental illnesses, perpetuating a vicious cycle of poverty and mental health disorders that is seldom broken.

However, in 2021, the World Health Organization (WHO) released a comprehensive mental health action plan extending until 2030, outlining global targets to address mental health issues. These targets include ensuring that by 2030, 80 percent of countries will have at least two functioning national, multisectoral mental health promotion and prevention programs, reducing the suicide rate by one-third, and establishing mental health and psychosocial preparedness systems for emergencies and disasters in 80 percent of countries by 2030 ^[34, 38].

For individuals with autism or special needs, the World Health Organization (WHO) and its partners recognize the imperative to enhance countries' capacities in promoting the optimal health and well-being of these individuals. The WHO Comprehensive Mental Health Action Plan 2013–2030 and the World Health Assembly Resolution WHA 73.10 for "Global Actions on Epilepsy and Other Neurological Disorders" urge nations to address significant gaps in early detection, care, treatment, and rehabilitation for mental and neurodevelopmental conditions, including autism. They also emphasize the importance of addressing the social, economic, educational, and inclusionary needs of individuals living with mental and neurological disorders, as well as their families, while improving surveillance and relevant research. Efforts to address autism spectrum disorders include:

1. Increasing governmental commitment to taking action to enhance the quality of life for individuals with autism.
2. Providing guidance on policies and action plans that encompass autism within broader health, mental health, brain health, and disability frameworks.
3. Contributing to bolstering the capacity of the healthcare workforce to deliver appropriate and effective care and promote optimal standards of health and well-being for individuals with autism.
4. Promoting inclusive and supportive environments for individuals with autism and other developmental disabilities, while offering support to their caregivers.

These endeavors aim to enhance the overall quality of life and promote the full participation and inclusion of individuals with autism in society ^[34].

Treatments

There is substantial evidence indicating that human behavior is significantly shaped by unconscious memories inherited from our ancestors. For instance, the fear of darkness can be traced back to prehistoric times when nightfall often signified imminent danger. However, it's crucial to acknowledge that treatment options are available for individuals experiencing mental disorders. Various therapies are employed to address mental health issues, including:

1. **Individual Psychotherapy:** This form of therapy involves one-on-one sessions between a therapist and a patient. It aims to explore the patient's thoughts, feelings, and behaviors in a supportive and non-judgmental environment. Techniques such as cognitive-behavioral therapy (CBT), psychodynamic therapy, and mindfulness-based therapy are commonly

utilized to help individuals manage their symptoms and improve their overall well-being.

2. **Physical Treatments:** Physical treatments encompass a range of interventions aimed at alleviating symptoms of mental disorders. These may include electroconvulsive therapy (ECT), transcranial magnetic stimulation (TMS), and vagus nerve stimulation (VNS). These treatments are often reserved for individuals who have not responded to other forms of therapy or medication.
3. **Drug Therapy:** Drug therapy, also known as pharmacotherapy, involves the use of medications to manage symptoms of mental disorders. Psychotropic medications such as antidepressants, antipsychotics, mood stabilizers, and anti-anxiety medications are prescribed based on the specific symptoms and diagnosis of the individual. It's essential for medication to be prescribed and monitored by a qualified healthcare professional to ensure effectiveness and minimize side effects.

Addressing mental health disorders requires a comprehensive approach that may involve a combination of therapies tailored to the individual's needs and preferences. It's important for individuals experiencing mental health challenges to seek professional help and explore treatment options that can support their recovery journey.

Individual therapies for mental health disorders encompass various approaches aimed at addressing symptoms and improving overall well-being. Here are some examples:

1. **Hypnotic Suggestion:** Hypnotic suggestion involves accessing the subconscious mind to modify associations and behaviors. It can be utilized to either dissociate previously associated thoughts or to establish new associations. This

method is often used in hypnotherapy to address issues such as phobias, anxiety, and smoking cessation.

2. **Occupational Therapy:** Occupational therapy focuses on purposeful activities to promote physical and mental health. It aims to help individuals with mental disorders engage in meaningful activities that enhance their independence, productivity, and overall quality of life. Occupational therapy can include activities such as arts and crafts, gardening, and vocational training.
3. **Solitary Hobbies:** Engaging in solitary hobbies can be therapeutic for individuals who may not be inclined towards group activities due to their mental health condition. These hobbies provide a sense of accomplishment, independence, and self-expression. Examples include painting, writing, gardening, or other solitary pursuits that provide a sense of fulfillment and relaxation.
4. **Physical Treatments:** Physical treatments for mental health disorders encompass a range of interventions aimed at alleviating symptoms. These may include:
 - a. **Lobotomy:** Lobotomy, although controversial and rarely performed today, was once used to treat severe mental illnesses by disconnecting certain brain circuits. It was believed to alleviate symptoms such as suicidality, food refusal, depression, and anxiety.
 - b. **Drug Therapy:** Drug therapy involves the use of medications to manage symptoms of mental disorders. Common medications used include chlorpromazine, reserpine, paraldehyde, chloral hydrate, and bromides. These medications are prescribed based on the specific symptoms and diagnosis of the individual.

- c. **Music Therapy:** Music therapy utilizes music-based interventions to address emotional, cognitive, and social needs. It can help individuals with mental health disorders express themselves, reduce anxiety, improve mood, and enhance overall well-being.
- d. **Hydrotherapy:** Hydrotherapy involves the therapeutic use of water to promote physical and mental relaxation. It can include activities such as swimming, hydro-massage, and aquatic exercise, which can help alleviate symptoms of anxiety and stress.

These examples illustrate the diverse range of individual therapies available to address mental health disorders and promote overall recovery and well-being. It's essential for individuals to work with qualified healthcare professionals to determine the most appropriate treatment approach based on their specific needs and preferences. Here are examples of treatments for common mental health disorders:

- 1. Depression:
 - a. Cognitive-behavioral therapy (CBT): Helps individuals identify and change negative thought patterns contributing to depression.
 - b. Medication: Antidepressants like selective serotonin reuptake inhibitors (SSRIs) regulate brain chemicals involved in mood.
 - c. Exercise: Regular physical activity improves mood and reduces depression symptoms.
- 2. Anxiety Disorders:
 - a. Exposure therapy: Gradual exposure to feared situations or objects helps individuals overcome anxiety.
 - b. Relaxation techniques: Deep breathing, meditation, and progressive muscle relaxation reduce anxiety symptoms.

- c. Medication: Anti-anxiety medications or antidepressants may manage anxiety symptoms.
- 3. Post-Traumatic Stress Disorder (PTSD):
 - a. Eye Movement Desensitization and Reprocessing (EMDR): Helps process traumatic memories and reduce distress.
 - b. Trauma-focused CBT: Focuses on addressing trauma-related symptoms and coping strategies.
 - c. Medication: Antidepressants or anti-anxiety medications may manage PTSD symptoms.
- 4. Bipolar Disorder:
 - a. Mood stabilizers: Lithium or anticonvulsants regulate mood swings in bipolar disorder.
 - b. Psycho-education: Learning about the disorder and developing coping strategies.
 - c. Therapy: Individual or group therapy provides support and helps manage symptoms.

These treatments aim to address the specific symptoms and challenges associated with each mental health disorder, promoting overall well-being and quality of life for affected individuals. It's essential for individuals to work with healthcare professionals to determine the most suitable treatment approach for their needs.

Artificial Intelligence (AI) in healthcare

Intelligence can be understood as the capacity to acquire knowledge and employ various strategies to solve problems and achieve objectives, adapting them appropriately to the circumstances in a dynamic and uncertain environment. For instance, a factory robot equipped with predetermined instructions may demonstrate flexibility, accuracy, and

consistency in its operations, but it lacks true intelligence. The term "artificial intelligence" (AI) was coined in 1955 by John McCarthy, an eminent figure in the field and Stanford University's inaugural AI faculty member. McCarthy defined AI as "the science and engineering of creating intelligent machines." Over the years, much research has focused on programming software agents with specific knowledge to perform designated tasks, such as playing chess. However, contemporary emphasis has shifted towards developing agents capable of learning autonomously, mirroring the adaptability exhibited by human beings as they navigate a constantly evolving world ^[23].

Artificial intelligence (AI) has recently achieved significant milestones, surpassing human performance in various domains, sparking optimism about its potential to revolutionize healthcare. There is hope that AI can enhance disease prevention, detection, diagnosis, and treatment. While concerns persist regarding AI's impact on job displacement and the doctor-patient relationship, many believe that AI can automate repetitive tasks, enabling healthcare professionals to focus on human-to-human interactions and the application of emotional intelligence and judgment. Despite assertions that AI will not replace human physicians in the foreseeable future, it can certainly augment their capabilities, aiding in clinical decision-making and potentially assuming certain tasks in functional areas like surgery and radiology. The proliferation of healthcare data and advancements in big data analytics has facilitated the successful integration of AI into healthcare. By leveraging powerful AI techniques, clinicians can extract clinically relevant insights from vast datasets, thereby enhancing decision-making processes. Before AI systems can be deployed in healthcare settings, they must undergo training using data generated from clinical activities such as screening, diagnosis, and treatment assignment. These datasets encompass a wide array of

information including demographics, medical notes, and electronic records from medical devices, physical examinations, clinical laboratory results, and medical images. Despite the attention AI technologies are receiving in medical research, their real-world implementation faces numerous obstacles. These challenges must be addressed to ensure the effective integration of AI into healthcare practice ^[18].

There are various components and systems within artificial intelligence (AI) that influences its functionality and operation:

1. **Autonomous Systems:** These systems can independently plan and execute sequences of actions to achieve specific goals without constant oversight. For example, a hospital delivery robot must autonomously navigate through busy corridors to complete its tasks. In AI, autonomy refers to independence in decision-making rather than self-governance as seen in politics or biology.
2. **Machine Learning (ML):** ML is a subset of AI that focuses on how computer systems can improve their perception, knowledge, decisions, or actions based on experience or data. It draws from disciplines such as computer science, statistics, psychology, neuroscience, economics, and control theory.
3. **Deep Learning:** Deep learning utilizes large, multi-layer artificial neural networks to compute with continuous (real number) representations, similar to the hierarchically organized neurons in human brains. It is employed in various ML tasks, offering better generalization from small datasets and better scalability to large datasets and computational resources.
4. **Transformer Architecture:** The transformer is a recent breakthrough in neural network architecture that incorporates context via an attention mechanism, enabling efficient

analysis and generation of sequences such as words in a paragraph.

5. **Narrow AI:** Narrow AI refers to intelligent systems designed for specific tasks, such as speech or facial recognition.
6. **Human-level AI (Artificial General Intelligence - AGI):** AGI aims to develop machines that possess broadly intelligent, context-aware capabilities similar to human beings. This level of intelligence is crucial for tasks requiring adaptability and effective human-robot interaction.
7. **Human-centered Artificial Intelligence:** This approach to AI focuses on augmenting human abilities, addressing societal needs, and drawing inspiration from human beings. It aims to develop AI systems that serve as effective partners and tools for people, such as robot helpers and companions for the elderly.

These components and systems play integral roles in shaping the capabilities and potential applications of artificial intelligence. The emergence of AI marks a transformative force in the digital age, profoundly impacting various sectors and industries. While the presence of AI in consumer technology, exemplified by virtual assistants like Amazon's Alexa and Apple's Siri, is readily apparent, its applications extend far beyond, encompassing areas such as financial services, space exploration, and surveillance. Defined broadly as the replication of human cognitive functions by machines, AI has garnered significant interest due to advancements in machine learning. In this paradigm, computer algorithms autonomously learn from data without explicit human programming. In healthcare, AI holds immense potential to revolutionize disease surveillance, early detection, diagnosis, treatment discovery, and personalized medicine. However, alongside optimism, there exists apprehension regarding AI's impact on employment and the

physician-patient relationship. Projections suggest that AI-powered technologies could surpass human performance in surgical procedures by 2053, raising concerns about job displacement and changes in healthcare dynamics. The wealth of available data in clinical and pathological images, continuous biometric readings, and Internet of Things (IoT) devices provides fertile ground for AI-driven deep learning algorithms. These algorithms enable AI to generate analyses and predictions, fueling a surge in AI research within the medical field in recent years. AI represents a powerful tool with the potential to reshape various aspects of society, including healthcare. While its benefits are promising, careful consideration of its implications and ethical considerations is essential to harness its full potential while mitigating potential risks ^[16].

AI in healthcare and health digital technology are indeed related concepts, but they are distinct in their focus and scope. AI in healthcare specifically refers to the application of artificial intelligence technologies, such as machine learning algorithms and natural language processing, to enhance various aspects of healthcare delivery, diagnosis, and treatment. Examples of AI in healthcare include using image recognition algorithms to detect cancerous cells in medical images, employing predictive analytics to identify individuals at risk of developing certain conditions, and utilizing chatbots or virtual assistants to offer personalized health advice. On the other hand, health digital technology encompasses a broader array of technologies utilized within the healthcare sector. This includes electronic health records (EHRs), telemedicine platforms, mobile health apps, wearable devices, and more. The primary aim of health digital technology is to improve patient outcomes, enhance efficiency in healthcare delivery, and provide patients with greater access to information and resources. AI in healthcare represents a specific

subset of health digital technology, focusing on the utilization of advanced AI algorithms to address healthcare challenges and improve patient care. Meanwhile, health digital technology encompasses a wider range of technologies used across various aspects of healthcare delivery and patient engagement.

Artificial Intelligence (AI) has been a transformative force in the healthcare industry for several years, offering profound potential to revolutionize healthcare delivery. In this article, we delve into the diverse applications of AI in healthcare and its transformative impact on the industry.

1. **Diagnosis and Treatment:** One of the most promising applications of AI in healthcare lies in diagnosis and treatment. AI algorithms can meticulously analyze extensive patient data, encompassing medical records, lab results, and imaging scans, empowering healthcare providers to make more precise diagnoses and devise effective treatment strategies. For instance, IBM's Watson for Oncology utilizes AI to scrutinize patient data and furnish personalized treatment recommendations for cancer patients. Similarly, Google's DeepMind Health employs AI to scrutinize medical images, aiding physicians in detecting and diagnosing diseases like breast cancer and diabetic retinopathy.
2. **Drug Discovery:** AI is revolutionizing the drug discovery process by accelerating it significantly. Unlike traditional methods that are time-consuming and costly, AI algorithms can swiftly sift through vast datasets to identify potential drug candidates at a fraction of the cost. For example, Insilico Medicine utilizes AI to expedite the development of new drugs for diseases such as cancer and Alzheimer's. Their AI algorithms can analyze extensive datasets to pinpoint potential drug candidates and predict their efficacy before human trials commence.

3. **Personalized Medicine:** AI plays a pivotal role in advancing personalized medicine by analyzing a patient's genetic data, medical history, and lifestyle factors to devise tailored treatment plans. For instance, the startup Niramai employs AI to develop a non-invasive breast cancer screening tool that detects tumors at an early stage. Leveraging thermal imaging and machine learning algorithms, the tool scrutinizes breast tissue to identify potential cancerous lesions.
4. **Administrative Tasks:** AI streamlines administrative tasks in healthcare, enhancing operational efficiency. Chatbots and virtual assistants can handle patient inquiries, schedule appointments, and offer basic medical guidance, reducing the burden on healthcare staff. Additionally, AI algorithms can scrutinize electronic health records (EHRs) to identify billing errors and potential fraud, saving time and resources for healthcare providers.
5. **Predictive Analytics:** AI facilitates predictive analytics in healthcare by analyzing patient data to forecast disease risks and treatment outcomes. For instance, ClosedLoop.ai predicts patients at risk of hospital readmission post-discharge by analyzing factors such as age, medical history, and lifestyle. This proactive approach enables healthcare providers to intervene early and mitigate risks.

AI's multifaceted applications in healthcare are poised to redefine the industry, enhancing patient care, improving operational efficiency, and driving innovation.

While AI offers numerous benefits in healthcare, it also presents potential disadvantages that merit consideration:

1. **Lack of Human Interaction:** AI may lack the human touch and empathy crucial in healthcare interactions, potentially diminishing the patient experience.

2. Data Bias: AI algorithms reliant on biased data may perpetuate healthcare disparities and unequal treatment for certain patient demographics.
3. Privacy Concerns: AI's collection and analysis of personal health data raise privacy apprehensions among patients who may distrust the security of their information.
4. Technical Limitations: Despite its potential, AI may struggle with complex medical cases or interpret medical images less accurately than human experts.
5. Cost: The implementation and maintenance costs of AI systems may be prohibitive for smaller healthcare providers, limiting widespread adoption.

Regarding mental health, AI can both positively and negatively influence well-being:

Positive Impacts:

- Personalized treatment recommendations and remote patient monitoring can enhance mental health care accessibility and effectiveness.
- AI-powered chatbots and virtual assistants offer support and resources, potentially reducing stigma and increasing access to assistance.

Negative Impacts:

- Social media algorithms driven by AI may exacerbate negative thought patterns and contribute to feelings of loneliness, anxiety, and depression.
- AI-powered surveillance and monitoring systems raise privacy concerns and may induce feelings of paranoia or anxiety among individuals.

To address these concerns:

- Developers and healthcare providers should adhere to ethical guidelines for AI development and use.

- Education and resources should be provided to patients and providers to ensure safe and responsible utilization of AI tools in mental health care.

By acknowledging and mitigating potential risks, AI can be harnessed effectively to promote mental health and well-being while minimizing adverse effects.

A philosophy for living

Certainly, there are philosophical ideas and concepts that may provide solace and guidance to individuals struggling with mental disorders. Here are a few:

1. **Stoicism:** Stoic philosophy emphasizes focusing on what is within one's control and accepting what cannot be changed. For individuals with mental disorders, practicing stoicism can help in managing intrusive thoughts, anxiety, and stress by fostering acceptance and resilience.
2. **Existentialism:** Existentialist philosophy encourages individuals to find meaning and purpose in their existence, even in the face of adversity. By embracing existentialist principles, individuals with mental disorders can explore their own values and beliefs, empowering them to confront life's challenges with a sense of authenticity and agency.
3. **Mindfulness:** Rooted in Buddhist philosophy, mindfulness emphasizes living in the present moment with non-judgmental awareness. For individuals with mental disorders, practicing mindfulness techniques can help reduce symptoms of anxiety, depression, and rumination, promoting a greater sense of inner peace and well-being.
4. **Humanism:** Humanistic philosophy underscores the inherent dignity and worth of every individual, advocating for self-actualization and personal growth. By embracing humanistic principles, individuals with mental disorders

can cultivate self-compassion, self-awareness, and a sense of empowerment, fostering a deeper connection with themselves and others.

5. **Eastern Philosophy:** Concepts from Eastern philosophies such as Taoism and Zen Buddhism emphasize harmony, balance, and acceptance of the natural flow of life. Incorporating teachings from Eastern philosophy can help individuals with mental disorders cultivate a sense of inner calmness, resilience, and acceptance of impermanence.

It's important to note that philosophical ideas can serve as complementary tools alongside professional mental health treatment. Individuals may find different philosophies resonate with them at different times in their lives, and it's essential to explore and integrate these ideas in a way that feels authentic and meaningful to their personal journey towards mental well-being.

Tasks and Discussions

1. What is Medication in treatment of mental disorder?
2. What is Cognitive-behavioral therapy (CBT)?
3. What do physical activity do for mental health?
4. What are the common symptoms of anxiety disorders?
5. How is depression diagnosed and what are the treatment options available?
6. Can you explain the difference between bipolar disorder and NPD?
7. What are the risk factors for developing schizophrenia?
8. How can post-traumatic stress disorder (PTSD) impact a person's daily life and relationships?
9. What are some effective coping strategies for managing obsessive-compulsive disorder (OCD)?
10. How can family members and friends support a loved one with a mental illness?

11. What are the warning signs of a potential eating disorder?
12. How does substance abuse affect mental health and vice versa?
13. What are the challenges faced by individuals with autism spectrum disorder and how can they support them in various settings?

Discussion Questions (Make groups consisting of 2-3 people and discuss the questions)

14. What is Artificial Intelligence (AI) and Digital Health Technology?
15. What is AI in healthcare?
16. How AI can affect mental health?
17. What is the best treatment to face anxiety and depressive disorders? Why?
18. How can a global strategy eliminate mental disorder? Share your own ideas?
19. Do people need philosophical ideas for living? Why?
20. Please choose one of the cases then tell the diagnoses, using your own ideas?

Answers

1. Medication is the use of prescription drugs to treat mental health conditions such as antidepressants, anti-anxiety medications, mood stabilizers, and antipsychotics
2. CBT is a type of psychotherapy that focuses on changing negative thought patterns and behaviors to help individuals manage their emotions and improve their mental well-being. It is based on the idea that our thoughts, feelings, and behaviors are interconnected, and by changing one of these components, we can influence the others. CBT is often used to treat a variety of mental health conditions, such as anxiety

disorders, depression, phobias, and post-traumatic stress disorder

3. Physical activity that can have positive effects on mental health by reducing stress, anxiety, and depression, and improving overall well-being.
4. Common symptoms of anxiety disorders include excessive worry, restlessness, difficulty concentrating, irritability, muscle tension, and sleep disturbances.
5. Depression is diagnosed based on symptoms such as persistent sadness, loss of interest in activities, changes in appetite or weight, sleep disturbances, fatigue, feelings of worthlessness or guilt, and thoughts of death or suicide. Treatment options may include therapy, medication, and lifestyle changes.
6. Bipolar disorder is characterized by extreme mood swings between manic episodes (elevated mood, increased energy) and depressive episodes (sadness, hopelessness). Borderline personality disorder involves unstable moods, behaviors, and relationships.
7. Risk factors for schizophrenia include genetics, brain chemistry, prenatal exposure to viruses or malnutrition, and stressful life events.
8. PTSD can impact a person's daily life by causing flashbacks, nightmares, and avoidance of triggers, hypervigilance, emotional numbness, and difficulties in relationships.
9. Coping strategies for managing OCD may include cognitive-behavioral therapy (CBT), exposure and response prevention (ERP), mindfulness techniques, and medication.
10. Family members and friends can support a loved one with a mental illness by offering empathy, listening without judgment, encouraging treatment, and helping with practical tasks.

11. Warning signs of an eating disorder may include excessive preoccupation with food, body image concerns, and secretive behavior around eating, weight fluctuations, and physical health issues.
12. Substance abuse can worsen mental health conditions and vice versa. Integrated treatment approaches addressing both issues simultaneously are often recommended.
13. Individuals with autism spectrum disorder may face challenges in social interactions, communication, sensory sensitivities, and repetitive behaviors. Support can involve tailored interventions, education about ASD, and creating inclusive environments.

Discussion answers

14–20 are discussion questions thus the answers are depended on group point of views

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Distribution National and Regional

Brazil is partitioned into five distinct geographical regions, namely the North, Northeast, Midwest, Southeast, and South. These regions consist of 26 states and a federal district where the capital, Brasília, is located. The regions are conspicuously dissimilar in terms of social, economic, environmental, and demographic aspects. For instance, the North region, which encompasses most of the Amazon forest and has the largest territory, has the lowest population density (3.9 individuals per km²) and the smallest population. Conversely, the Southeast region occupies only 11 percent of the land area but harbors 43 percent of the population, resulting in high population density. Additionally, the Southeast region boasts the strongest economy in the country, generating over 50 percent of the gross domestic product (GDP) in 2020 (Pimentel et al., 2023).

Brazil is the largest country in South America and is located in the eastern part of the continent, bordering the Atlantic Ocean. Its vast size and diverse geography have contributed to significant regional differences in terms of economic development and social inequality. The country's northern and northeastern regions, for example, are generally poorer and more rural than the southern and southeastern regions, which are more urbanized and economically developed. These regional disparities have resulted in significant social inequality, with marginalized communities often lacking access to basic services such as healthcare, education, and sanitation. Addressing these

inequalities remains a major challenge for Brazil as it seeks to promote sustainable development and improve the well-being of its citizens.

Mental health has become an increasingly important topic in Brazil, as the country faces a growing burden of mental illness. According to recent studies, Brazil has one of the highest rates of depression and anxiety in the world, with an estimated 12 million people suffering from these conditions. The distribution of mental illness in Brazil is not uniform, with some regions and states experiencing higher rates than others (Pimentel et al, 2023).

The states with the highest population densities, such as São Paulo and Rio de Janeiro, have been found to have higher rates of mental illness. This may be due to factors such as urbanization, social inequality, and stress associated with living in densely populated areas. Additionally, cultural factors such as the stigma surrounding mental illness and lack of access to mental health services may also contribute to the higher rates of mental illness in these regions.

In recent years, Brazil has made efforts to improve access to mental health services and reduce stigma surrounding mental illness. However, there is still a long way to go in terms of addressing the needs of those suffering from mental illness in the country. Understanding the distribution of mental illness in Brazil is an important step towards developing effective policies and interventions to address this growing public health concern.

Mental disorders have grown rapidly and have become the third leading cause of disability-adjusted life years (DALYs) in Brazil, behind cardiovascular diseases and neoplasms, according to recent data from the Institute for Health Metrics and Evaluation (IHME) 2021. According to Marchionatti et al. (2023) the high prevalence of mental disorders in Brazil is also evident, with a study conducted in São Paulo suggesting that over

half of the population will suffer from a mental disorder during their lifetime, and around 30% experiencing a disorder within a 12-month period. It is particularly alarming that mental health issues are more prevalent among migrant women and men living in deprived areas, highlighting the need for targeted interventions to address these disparities and improve access to mental health services for vulnerable populations.

Access to mental health services alone is not enough to ensure quality care for individuals with mental disorders in Brazil. The study conducted in São Paulo suggests that only around 40 percent of individuals receiving care for mental disorders meet basic quality standards, indicating a need for improvements in the quality of care provided. Patients also report dissatisfaction with the treatment they receive, with many not persisting in seeing professionals who provide treatments they consider ineffective. These findings highlight the need for a more patient-centered approach to mental health care in Brazil, with a focus on providing evidence-based treatments that are tailored to individual needs and preferences. Improving the quality of mental health services in Brazil is crucial to addressing the growing burden of mental disorders and ensuring that individuals receive the care they need to achieve better mental health outcomes (Marchionatti et al. 2023).

Pimentel et al (2023) make an analysis of some aspects intrinsic to the country, such as ethnicity and race, gender, education, religion, and labour, economic aspects and violence, which could help to understand the continued growth in the incidence of mental illnesses.

Brazil has undergone a significant transformation in terms of ethnicity and race during the 20th century. The process of "pardization of Brazil" has led to an increase in the percentage of people who self-declare as brown. In fact, according to the most

recent decennial census from 2010, the number of whites and browns is practically the same, with each self-declaration comprising around 80 to 90 million people (80 percent of the population). Interestingly, the distribution of these population groups is not homogeneous across regions. For instance, in the South, more than 75 percent of the population self-identifies as white, whereas in the Northeast, 74 percent self-identify as brown. These findings highlight the importance of considering the regional differences in Brazil when analyzing social and demographic aspects of the country. (Pimentel et al., 2023).

The authors pointed that the persistence of a conservative view on gender roles in Brazil, with women earning only 67 Percent of what men earn. This is despite the fact that 37 percent of families had a female declared as "head of household" according to the 2010 census. In terms of education, while illiteracy has declined sharply over the years, there is still a significant disproportion between access to higher education based on skin colour, which has been partially mitigated by affirmative action policies. Informal labour represents a large proportion of the economy in Brazil, with a record high number of individuals engaged in informal labour in 2022. Additionally, a significant proportion of youth aged 18-29 were not in education, employment or training in 2020. These findings demonstrate the need for continued efforts to address inequalities and promote social inclusion in Brazil (Pimentel et al., 2023).

The country had significant shifts in economy throughout the 20th century. The decline of the agro-export model, which once accounted for almost half of the country's GDP, has been offset by the growth of industrial activity and the services sector. Despite fluctuations in GDP and per capita GDP, Brazil's economic growth has positioned it as a key regional player, with a per capita GDP of USD 5,507 in 2022. However, the country has faced significant challenges, including inflation peaks during

crises and high unemployment rates, particularly during the Covid-19 pandemic. Brazil also has the potential to lead clean economic growth efforts due to its clean energy mix and robust legal framework, but government implementation of policies has been lacking. Overall, these findings suggest that while Brazil has made significant economic progress, there is still room for improvement in addressing economic challenges and promoting sustainable growth. (Pimentel et al., 2023).

Brazil's violence indicators are alarmingly high, with a particularly high rate of homicides by firearms. However, the implementation of firearm control legislation has resulted in a decrease in deaths by firearm, with more pronounced reductions observed in states with higher numbers of guns collected by the government. Despite this progress, Brazil still has one of the highest homicide rates in the world, with around 40,000 deaths annually and marked regional differences. The homicide rate is significantly higher in the 15–29-year age group, particularly among young males, and black women also face a disproportionately high homicide rate. These data highlight the urgent need for continued efforts to address violence in Brazil, particularly among vulnerable populations. (Pimentel et al., 2023).

The demographic characteristics of Brazil have an impact on the epidemiology of mental health and illness in the country. While nationally representative data on mental disorders in Brazil are limited, existing estimates suggest higher rates compared to global averages. The Brazilian National Health surveys in 2013 and 2019 indicated an increase in the prevalence of self-reported history of depression among adults, with marked regional differences. Mental disorders were more prevalent among females, individuals with lower socioeconomic status, non-whites and indigenous populations. According to GBD

estimates, more than 36 million individuals in Brazil meet diagnostic criteria for at least one mental disorder, with anxiety disorders and depressive disorders being the most prevalent. Mental disorders were the leading group of morbidity in Brazil in 2019, accounting for 4.9 million YLDs across all age groups and corresponding to 18.8 percent of all YLDs in the country. Alcohol use disorders were also a significant contributor to non-fatal disease-related burden in Brazil (Pimentel et al., 2023).

In this context, it is possible to say that the geographical distribution of Brazil's population and economy has important implications for mental health care in the country. The Southeast region, which is home to the largest concentration of people and the strongest economy, may have better access to mental health services and resources compared to other regions. However, this may not necessarily translate to better quality of care. On the other hand, the North region, which has the smallest population and lowest population density, may face challenges in providing adequate mental health services to its residents due to its remote and sparsely populated areas. These regional differences highlight the need for targeted interventions and policies that take into account the unique social, economic, and demographic aspects of each region in order to improve access to and quality of mental health care in Brazil. (Pimentel et al., 2023).

There are also challenges that persist in establishing mental health provision in Brazil despite the significant progress made towards establishing a community-oriented, nation-wide integrated, and universal mental health system. Marchionatti (2023) saliented three main points for interventions to strengthen the mental health system in Brazil, which align with the objectives set forth by the WHO mental health action plan. Firstly, the current state of the mental health system is largely unknown as official data does not provide crucial information on it. Secondly, there is a lack of appropriate recommendations on

how to articulate the different levels of care and services composing the network, resulting in problems at establishing practices that are diverse across the country. Lastly, there is a need for systematic assessment of the mental health system's current state, including coverage, practices, standards of quality, and results. Academic publications have already developed strategies and indicators for establishing standards of cover and could offer an initial point for such assessment. Overall, the authors accentuate the need for continued efforts to strengthen the mental health system in Brazil through systematic assessment, appropriate recommendations, and evidence-based practices. (Marhionatti et al., 2023).

Mental disorders account for 13 percent of DALYs in the country, with depression being the fourth leading cause of this burden. Brazil leads the years lived with disability (YLD) in the Americas, with mental disorders accounting for 36 percent. Anxiety disorders are the most prevalent in the country, followed by depression, which is the fifth leading cause of YLD. Alcohol and interpersonal violence are the second leading cause of YLD in Brazil, with behavioral risk factors for alcohol and drug use almost doubling between 1900 and 2016. Suicide is also a major concern, with Brazil having a suicide rate of 5.8 deaths per 100,000 inhabitants in 2014. Despite the high prevalence of mental disorders, mental health services are underused due to communication gaps between mental health policies and the population, as well as other obstacles hindering effective implementation. Studies have shown that only a small percentage of people with mental disorders receive psychosocial interventions from community mental health services, indicating a need for improved access to mental health care in Brazil. (Razzouk, Caparrocce, Sousa, 2020).

The Brazilian demographic issue is an important factor to be considered when it comes to mental health and mental illnesses. Brazil is a diverse country in terms of ethnicity, with a population predominantly composed of people of European, African, and Indigenous descent. Additionally, the country presents significant socioeconomic inequalities, with a large portion of the population living below the poverty line.

These demographic differences have a direct impact on the mental health of the Brazilian population. For example, people living in poverty are more likely to develop mental health problems due to factors such as stress, lack of access to mental health resources and services, and exposure to traumatic events. Moreover, gender is also relevant to mental health in Brazil. Women are more likely to develop anxiety and depression disorders, while men are more prone to problems related to alcohol and drug use.

In summary, the Brazilian demographic issue is an important factor to consider when addressing mental health in the country. It is necessary to take into account socioeconomic, ethnic and gender to ensure that everyone has access to adequate mental health resources and services.

Stereotypical views of mental disorders

To understand the stigma and approach towards mental health in Brazil, we must consider not only the history of the process of evolution of mental health care, but also the socio political and economic context surrounding the trajectory of mental health in the country. The evolution of the country's understanding of madness and mental illness over the years plays a significant role in the formation of diverse practices and models of assistance and care, in addition to organizational structures as well as stigma (Sampaio, Bispo Junior, 2021).

The social stigma linked to mental illness is a complex phenomenon that goes beyond simple discrimination. It reflects deep-rooted prejudices in society, often based on a lack of information and fear of the unknown. The negative perception regarding mental illness can lead to exclusion, marginalization and even violence against individuals who suffer from these disorders. It is important to recognize that mental illness is a common condition that affects people of all ages, backgrounds and social classes. However, a lack of understanding and empathy often leads to stigmatization, making it even more difficult for those suffering to seek help and support. Self-stigma, which is the internalization of negative stereotypes about oneself, is also an important challenge to be faced, as it results in low self-esteem and quality of life. Furthermore, public stigma surrounding chronic and psychotic mental illnesses can perpetuate exclusion and discrimination. To combat the stigma associated with mental illness, it is essential to promote education, open dialogue and awareness among society as a whole. Initiatives that aim to raise awareness of mental health issues, as well as programs that encourage inclusion and acceptance of diversity, are key to creating a more welcoming and supportive culture. Furthermore, it is crucial to invest in accessible, quality mental health services that can meet the needs of those affected. Integrating mental health care into the community, along with promoting autonomy and social reintegration, are important steps to ensuring that those suffering from mental illness are treated with dignity and respect. The search for citizenship, autonomy, social reintegration and access to quality mental health services are essential goals of new care practices. These services are the responsibility of the Centros de Atenção Psicossocial (Psychosocial Care Centers - CAPS), which play a fundamental role in the transition of mental health

care from the hospital to the outpatient environment, with a focus on the psychosocial rehabilitation of patients. The CAPS multidisciplinary team works in an integrated and interdisciplinary way to help individuals with limitations regain as much autonomy as possible in their activities in the community, including family, professional, educational and social reintegration. Family support therapies are offered to help understand the process of mental illness, demystifying the disease and its treatments. There is also the implementation of mechanisms to strengthen social support networks as a form of support and encouragement for a new approach to mental health care. The transition from the asylum model to outpatient and community services aims to deinstitutionalize and deinstitutionalize mental health care, contributing to improving the quality of life of affected individuals. Socialization and family support play a crucial role in reducing the stigma associated with mental illness, while social isolation can worsen the negative impacts of stigma, such as anxiety, low self-esteem and discrimination. The perspective of social inclusion in the context of mental health is fundamental to promoting equal opportunities and the active participation of all people in society (Weber et al., 2017).

Stigma causes less motivation to seek help for mental disorders and suicide risk. The high prevalence of stigma and its association with poorer outcomes warrant consideration of stigma as a research focus in the mental health field. Since the stereotypes of “poor creativity”, “poor intelligence” and “bad hygiene” are highly correlated, “poor creativity” was chosen as the representative of these three stereotypes. There is also a strong correlation between “more unpredictable”, “less rational” and “weird” (Da Silva et al., 2021). People with mental disorders face difficulties socializing and are less successful than average. Stigma also hinders their insertion into the job market and they

tend to remain on the margins of society, contributing to the increase in unemployment and marginality (Onoko Campos, 2019).

Maskayano et al. (2016) make a review about family stigma, public stigma, consumer stigma and multiple stigmas toward mental illness in Latin America and the Caribbean. The authors discuss the findings of Brazilian studies on stigma from healthcare professionals towards individuals with mental illness. It highlights that Brazilian professionals, compared to those from Switzerland and the general population, show less social distance and more positive attitudes. The influence of religious beliefs, particularly Christianity, in Brazil is noted as a potential factor in reducing mental illness stigma. The text also touches on gender issues, and the roles of men and women in Latin American societies influenced by Colonialism and Christianity.

Family stigma is also addressed, with some findings suggesting a protective role of family members in Argentina, while others indicate that family reactions can lead to discrimination against individuals with mental disabilities. The concept of familismo is discussed in the context of how individuals with mental disorders may be viewed as failing to meet family obligations, potentially becoming burdens on their relatives. In addition, the authors acknowledge limitations in their review, such as not specifically including culture-specific terms related to distress or missing studies on specific regions or ethnicities within Latin America.

According to The Lancet, mental illness-related stigma is prevalent in Brazil, with a large portion of the population believing that patients with a psychiatric diagnosis are dangerous to society. Mental illness-related stigma is prevalent in Brazil for several reasons. One key factor is the lack of adequate education and awareness about mental health issues in the general

population. Misconceptions and stereotypes about psychiatric disorders are common, leading to fear and discrimination towards individuals with mental illnesses.

Another contributing factor is the historical and cultural context in Brazil, where mental health has long been stigmatized and marginalized. People with psychiatric diagnoses are often viewed as dangerous or unpredictable, perpetuating negative attitudes and social distancing. The media also plays a role in perpetuating stigma towards mental illness, often sensationalizing stories about individuals with psychiatric disorders and reinforcing negative stereotypes. This can further fuel fear and misunderstanding among the public. Additionally, the limited access to mental health services and resources in Brazil can contribute to stigma. When individuals do not have access to proper treatment and support, it can lead to a lack of understanding and empathy towards those struggling with mental health issues.

Overall, the combination of lack of education, cultural beliefs, media influence, and limited resources all contribute to the prevalence of mental illness-related stigma in Brazil. Addressing these factors through education, advocacy, and increased access to mental health services is crucial in combating stigma and promoting understanding and acceptance of individuals with psychiatric diagnoses.

Da Silva et al. (2021) discusses the presence of stigma regarding mental disorders, specifically schizophrenia and ADHD, among Brazilian psychiatrists. The results suggest that even among highly educated professionals, stigmatizing beliefs related to mental illness are present and may vary according to psychotic or nonpsychotic diagnosis.

It mentioned a previous study that evaluated stigma towards schizophrenia among psychiatrists and the general population in Brazil, revealing that more knowledge about

schizophrenia was associated with greater stigma in various dimensions. Psychiatrists reported the most negative stereotypes, especially regarding "strange" and "unpredictable" stereotypes.

Interventions to reduce stigma related to mental health were discussed, with social contact highlighted as an effective strategy for adults. Other interventions included mental health information, psychoeducation, psychotherapy, entertainment, and artistic interventions. The study mentioned some limitations, such as the data being collected in an academic/scientific setting, which could have influenced participants' responses. Additionally, being a convenience sample, participants may not be representative of Brazilian psychiatrists in general. However, the results may underestimate the issue of stigma regarding mental illness among Brazilian psychiatrists, given the willingness of participants to update their knowledge and skills.

The distribution of questionnaires did not follow a formally random method, but the samples had similar sociodemographic characteristics. The personality, symptoms, and emotional traits of participants were studied to determine which characteristics were associated with stigma in individuals with high levels of psychiatric knowledge. However, specific clinical characteristics, such as the severity of psychiatric symptoms, were not addressed in the study.

In summary, the text highlights the persistence of stigma regarding mental illness among Brazilian psychiatrists and discusses possible interventions to reduce this stigma. It also acknowledges the study's limitations and points to the need for further research in this area. (Da Silva et al., 2021).

What is the highest rate of mental illness in Brazil?

In Brazil, mental health disorders are a significant public health concern. According to a study conducted by the World Health Organization (WHO) in 2017, the prevalence of mental health disorders in Brazil was estimated to be around 18.6 Percent. The most common mental health disorders in Brazil include: Depression, Anxiety Disorders and Substance Use Disorders. Depression is one of the most prevalent mental health disorders in Brazil, affecting a significant portion of the population. It is characterized by persistent feelings of sadness, hopelessness, and loss of interest in activities. Anxiety disorders, including generalized anxiety disorder, panic disorder, and social anxiety disorder, are also common in Brazil. These disorders are characterized by excessive worry, fear, and anxiety that can significantly impact daily functioning. Substance use disorders, including alcohol and drug abuse, are a significant concern in Brazil. These disorders can have serious health and social consequences for individuals and communities.

Mental health disorders such as depression, anxiety disorders, and substance use disorders are prevalent in Brazil for several reasons:

Firstly, socioeconomic factors play a significant role in the high prevalence of these disorders. Brazil is a country with significant social and economic inequalities, which can lead to stress, insecurity, and lack of access to mental health services. These factors can contribute to the development of mental health disorders such as depression and anxiety.

Secondly, cultural factors also play a role in the prevalence of mental health disorders in Brazil. There is still a stigma surrounding mental health issues in Brazilian society, which can prevent individuals from seeking help and receiving proper treatment. This stigma can also lead to underreporting of mental

health disorders, making it difficult to accurately assess the true prevalence of these conditions.

Additionally, the high prevalence of substance use disorders in Brazil can be attributed to factors such as easy access to drugs and alcohol, social norms that normalize substance use, and limited resources for prevention and treatment. Substance use disorders often co-occur with other mental health disorders, further complicating the situation.

Overall, a combination of socioeconomic, cultural, and environmental factors contributes to the high prevalence of mental health disorders in Brazil. Addressing these issues will require a comprehensive approach that includes improving access to mental health services, reducing stigma, and addressing underlying social determinants of mental health.

Depression is a mental health condition that stands out for its high frequency and severity, being one of the main causes for the global burden of diseases. Furthermore, depression is one of the main causes of absences and low productivity in the workplace, being the third reason for absence from work in Brazil. Brazil tops the list of depression prevalence among developing nations, affecting between 10 and 18 percent of the population in a year, which is equivalent to 20 to 36 million people, around 10 percent of the world's cases of depression. Depression and anxiety are estimated to result in an annual loss of productivity in excess of a trillion dollars. Despite clear social needs, investment in treating mental disorders remains disproportionate, especially in low- and middle-income countries, where less than 1 percent of the healthcare budget goes to mental health and only 20 to 40 percent of people receive treatment. Depressive disorders entail significant costs due to their high prevalence, increased mortality, loss of productivity and negative impacts on various sectors of society. The benefits

of treatment include improvements in clinical status, functionality, quality of life and work productivity, in addition to reducing negative impacts. Treating mental disorders not only benefits the affected individual, but also third parties; for example, treating postpartum depression in a mother can positively impact the child's physical, cognitive, and emotional development. Although there is no definitive cure for mental disorders, treatment for depression is effective, accessible and cost-effective. Aligned with the Sustainable Development Goals, economic studies demonstrate that investing in the treatment of depression can generate a significant economic return. The costs associated with treating depression are considerably lower compared to the social and economic impacts that this condition entails. Brazil is already facing the consequences of reduced productivity and increased absences from work due to depression. Although antidepressant medications are available in the Unified Health System, it is crucial to promote comprehensive training to early identify and provide appropriate treatment for depression, implement effective clinical protocols, and closely monitor the results and quality standards of care provided to patients. (Razzouk, 2016).

The report card issued by the Ministério da Saúde (2022) provides data on depressive disorder in Brazil between 2013 and 2019. There was a significant increase in the number of people in Brazil who reported being diagnosed with depression by mental health professionals, reaching 10.2 percent of the adult population in 2019, equivalent to around 16.3 million people. Women reported a diagnosis of depression approximately 2.8 times more often than men, regardless of the year analyzed. The increase in the proportion of diagnoses was greater among women (35 percent) than among men (31 percent) in the period from 2013 to 2019. Elderly people between 60 and 64 years old were the most affected age group, with 13.2 percent having been

diagnosed with depression in 2019, while the lowest percentage was observed among young adults aged 18 to 29 years old, with 5.9 percent. The greatest variation in the proportion of people diagnosed with depression occurred among adults aged 18 to 29 (51 percent increase) and elderly people aged 75 or over (48 percent increase) in the period analyzed. In the face of the data, most suicide attempts occur in people aged 10 to 39. Suicide attempt rates are more consistent among women in this age group. Suicide mortality increased in all age groups, especially between 5 to 14 years old and 15 to 19 years old. The death rate from suicide is four times higher in men than in women. The majority of people who died by suicide between 2011 and 2015 were single, widowed or divorced. Regarding the occurrence of self-inflicted injuries, it increased significantly among children and adolescents in Brazil between 2011 and 2018. In 2018, adolescents (10 to 19 years old) represented 15.2 percent of the Brazilian population, but accumulated 29.8 percent of the occurrences of self-inflicted injuries, while adults (20 to 59 years old) corresponded to 57.4 percent of the population and accounted for 65.8 percent of injury incidents (Brasil, 2022).

In statistical-descriptive epidemiological research by Carteri et al. (2020), says that more than 970 million people worldwide are diagnosed with a mental disorder, accounting for approximately 13 percent of the population. In Brazil, 13.09 percent of men and 15.78 percent of women are diagnosed with a mental disorder. Between 1997 and 2001, the predominant diagnosis found in adult medical records in Brazil was mood disorder, specifically depressive episodes. Analysis of psychiatric hospitalizations indicated that the occurrence of these disorders was twice as common in men than in women. Drug abuse, especially alcoholism, was the highest incidence rate among men, followed by depression, simple phobia and alcohol

dependence. Interestingly, it was observed that the most serious mental illnesses tend to manifest themselves during the productive phase of men's lives, highlighting the importance of mental health during this period. Among women, the most common disorder is depression, followed by simple phobias. The causes of mental disorders in women are the demands currently made on women, with them having to deal with household chores, mothering children and the job market, which motivates contradictions and conflicts. Such factors may be involved in psychogenesis and triggering of mental disorders. In psychotherapy outpatient clinics, the majority of patients seeking treatment are women, accounting for 70 percent of individuals in care. These patients are typically young adults, ranging in age from 18 to 35 years old. The most common primary diagnosis among this group is mood-related, making up 72.8 percent of the cases. Additionally, mental and behavioral disorders resulting from the use of psychoactive substances account for 53.3 percent of the diagnoses. The high incidence of depression in Brazil can be attributed to several factors including socioeconomic, cultural, environmental issues and the access to mental health services. The greater search for treatment by women suggests a greater sensitivity to the disease, while men tend to have more difficulty seeking mental health help (Carteri, et al., 2020).

A study carried out by Gonçalves et al. (2018) on the prevalence of depression in women points out that 19.7 percent of women aged 20 to 59 cared for a healthcare team by Estratégia da Saude da Familia in Brazil were diagnosed with depression. The research highlighted that the prevalence of depression is more significant among women who live in urban areas, have less education and face health conditions with chronic diseases, such as hypertension and diabetes. This study pointed to inequalities in access to mental health services, with the majority of Brazilians with depressive symptoms not receiving adequate

treatment. Factors such as low education, professional occupation, presence of mental illnesses and lack of physical activity were also identified as influencers. In Brazilian Primary Health Care units, depression is underdiagnosed in up to half of cases, despite its significant prevalence. A correlation was established between a depressive state and worsening of clinical conditions, such as heart disease, diabetes, obesity and oncological problems, and a significant association between depression in motherhood, problems in child development and worsening of school performance, with implications for the family environment. Factors such as physiological, hormonal, socioeconomic and cultural differences explain the higher prevalence of depression in women than in men, being influenced by several conditions such as: the overload of responsibilities faced by women when reconciling work and family contributes to an increased risk of depression. The exposure to adverse working conditions can indeed be a significant risk factor for mental health issues such as depression. The impact of workplace stress, long hours, lack of job security, and other factors can contribute to the development or exacerbation of mental health conditions. Depression, in particular, can have a profound effect on an individual's ability to function effectively in their personal and professional lives, it is one of the main causes of disability in the world. It is crucial for employers to prioritize mental health support in the workplace and create a positive and supportive environment to help prevent and address issues like depression (Gonçalves, 2018).

It is important to highlight that, for a long period, the importance of mental disorders has been underestimated due to the exclusive focus on mortality rates, while the considerable long-term disability resulting from these disorders has a

significant impact on the quality of life of those affected. Consequently, it is crucial to implement efficient public policies to tackle these issues and foster prevention, early detection, and proper treatment of depression among the Brazilian population. Numerous countries are deficient in mental health policies, while others are in the midst of establishing community care services. The implementation of these services came with the establishment of the Unified Health System (Sistema Único de Saúde - SUS) in Brazil during the 1990s. While this was a significant advancement, there has been a growing focus on new medications, therapies, and psychosocial interventions to address psychiatric conditions. Understanding the prevalence of mental disorders, the morbidity burden they represent, and the gap in available treatment is critical to directing effective public policies and more comprehensive mental health programs. The discrepancy between actual prevalence rates and the number of people receiving treatment highlights the importance of prioritizing psychiatric disorders on the public health agenda and investing in expanding, updating and formulating new mental health policies. Attention to these issues can significantly contribute to improving the quality of life and well-being of the population affected by mental disorders. However, significant challenges persist, especially in terms of access to and satisfaction of demand for health services. Cultural, financial and structural barriers make access to treatment difficult, resulting from factors such as stigma, limited knowledge about mental illnesses, doubts about the effectiveness of treatment, the scarcity of available services and insufficient training of primary care teams to identify cases (BRITO, 2022).

Case studies: particularities of a country with continental dimensions.

Case 1 – Depression

“A 26-year-old single female journalist sought therapy due to symptoms of sadness and lack of motivation. She was involved in a relationship with a married man and was struggling to find a job in her field. Despite having a good relationship with her family, she felt lonely in her city. The patient had good academic performance but procrastinated on completing her thesis and couldn't find a job she enjoyed. She had good physical and mental health but faced challenges in her romantic and social relationships, having difficulty expressing her needs and making demands. She had no previous experience with psychiatric or psychological treatments and did not use medications. Regarding her family, she maintained a good relationship with her parents, mother, brother, and sister-in-law, despite living in another city. Her leisure and social activities were limited when she was depressed, and she didn't engage in physical activities during these periods. When feeling better, she usually went to the gym. With few friends in the city, she often engaged in social and leisure activities alone. In her professional life, she had good academic performance but procrastinated on completing her thesis and temporarily dropped out of public service exam studies. Additionally, she faced difficulties in finding a job she liked. She had good physical and mental health, underwent regular check-ups, and had no significant chronic illnesses or history of substance use or abuse. In terms of relationships, she reported being abandoned by partners in relationships since adolescence, unable to maintain long-lasting relationships. The journalist struggled to express her needs and make demands, oscillating between passivity and aggressiveness in her interpersonal interactions. The patient faced challenges in

completing her postgraduate thesis, which made her sad and anxious. She also struggled to maintain interpersonal relationships, often feeling abandoned by family and friends. These experiences contributed to the formation of negative beliefs about herself, such as "I am worthless" and "I am neglected." As a result, she developed strategies of dependence, passivity, and aggressiveness to cope with these dysfunctional beliefs. Some triggering situations included fights in the extramarital relationship, study difficulties, and financial problems. During therapy, the discovery of the extramarital partner's wife worsened her state, while ending that relationship had a positive impact on her improvement.

During the 14 sessions conducted, the patient was guided to identify her problematic behaviors and understand the functioning of the cognitive system and anxiety. The treatment began with effective education and familiarization with the Cognitive-Behavioral Therapy model, aiming to teach the patient to recognize the signs of her anxiety and deal with them effectively. An important aspect of the treatment was the use of the Dysfunctional Thought Record to identify automatic thoughts and dysfunctional beliefs of the patient. Although initially effective, the patient had difficulty maintaining the exercise at home due to her study routine. Alternatives, such as mobile apps, were suggested but were not successfully adopted. Cognitive restructuring was carried out through Socratic Questioning, aiming to help the patient detect and reflect on her cognitive distortions and negative thoughts. Various techniques were used, including presenting a list of the main cognitive distortions and providing psychoeducation about them. Identifying and correcting these distortions are crucial for effective anxiety treatment. In summary, it is not hard to notice the importance of addressing anxiety holistically, considering its different dimensions and using appropriate interventions to

promote symptom reduction and develop effective coping strategies.

In this case report, the importance of Cognitive Behavioral Therapy (CBT) in the treatment of mental illnesses is evident. It mentions that the patient's initial complaints of anxiety significantly improved throughout the treatment. Additionally, secondary issues related to other areas of the patient's personal life were also addressed and showed improvement. No psychiatric evaluation was deemed necessary during the treatment, indicating that the patient solely relied on psychotherapeutic intervention without the need for medication. Furthermore, as the treatment progressed, the patient was taught to identify, assess, and modify her dysfunctional thoughts independently. She also learned to apply cognitive and behavioral techniques outside of therapy sessions, such as using evidence testing or thought stopping when experiencing rumination. This demonstrates the effectiveness of CBT in empowering the patient to manage her symptoms and develop coping strategies on her own. The role of CBT in providing practical tools and strategies for individuals to address their mental health issues effectively is underscored. Additionally, it showcases the success of integrating alternative therapies, such as cognitive and behavioral techniques, into the treatment process to enhance the patient's overall well-being and symptom management, and also the importance of family and friends in this situation.

The susceptibility of women to depression, with statistics from the World Health Organization (WHO) indicated that women are twice as likely to be diagnosed with the disease compared to men. Biological and social factors can contribute to this vulnerability, such as lower testosterone levels in women and societal expectations leading to increased stress and obligations.

Also, the stigma surrounding mental health issues, particularly depression, can prevent individuals, especially women, from seeking help. Personal cases like the one in this text, shows how societal prejudice and misunderstanding can hinder individuals from discussing their mental health struggles openly.

Efforts by organizations like the Brazilian Psychiatric Association (ABP) to combat psychophobia and reduce stigma associated with mental illnesses are very important, but open discussions, early intervention, such as addressing mental health without prejudice. The lack of access to specialized care in the public healthcare system can also be pointed out in this situation as the limited availability of mental health professionals, particularly psychologists, in the Brazilian Unified Health System (SUS) contributes to a lack of prevention and adequate treatment for mental disorders.

Data from the National Registry of Health Establishments (CNES) reveals that there are only 19 psychologists per 100,000 inhabitants in the SUS in Brazil, significantly lower than some European countries where this number exceeds 40 professionals per 100,000 people. This shortage of professionals, especially in states like Pará, Ceará, Amazonas, and Maranhão - states of Brazil that are far from the economic center, the southeast of the country - hinders timely diagnosis and appropriate treatment for individuals with mental health issues. Data from the National Health Survey (PNS) conducted by the Brazilian Institute of Geography and Statistics (IBGE) in 2019 reveals that 10.2 percent of adults aged 18 and older received a diagnosis of depression. Regional variations show higher rates in the southern and southeastern states compared to other regions.

Another factor is the perception in Brazil that mental health care is a luxury or a secondary concern compared to physical health. This mindset contributes to a lack of urgency in providing mental health assistance through the public healthcare system.

The country presents an absence of a comprehensive protocol for treating depression patients within the public health network, which emphasizes the need for a more structured mental health care system. In this context, it is very important to increase investment in mental health services within the Brazilian public healthcare system. The better training of healthcare professionals to diagnose mental health conditions early and provide specialized care, as well as expanding service hours to accommodate individuals with depression who work during regular business hours is essential.

Some initiatives like the “Yellow September” national campaign (Setembro Amarelo), which raises awareness about suicide prevention, aims to promote discussions and actions regarding suicide prevention throughout the month. The Brazilian Psychiatric Association (ABP) has been conducting this campaign in partnership with the Federal Council of Medicine (CFM) since 2014, providing information and raising awareness about suicide prevention in the country. In 2017, the ABP and the CFM created the Guidelines for Participation and Dissemination of Yellow September. The document serves to guide society as a whole on how to participate in the Campaign, how to correctly use the public service materials produced and how to encourage Yellow September in each region. The campaign focuses on the theme "If you need help, ask for it!" with activities taking place throughout September, culminating in the World Suicide Prevention Day on September 10th, endorsed by the World Health Organization (WHO). The campaign actions take place both online and offline, through lectures, volunteer services, public demonstrations, medical care and mobilizations on social networks, among other activities. The campaign is also promoted by the Federal Government and approved by the Superior Electoral Court.

Globally, over 700,000 suicides are reported annually, with potential underreporting leading to estimates exceeding one million cases. In Brazil, an estimated 14,000 suicides occur each year, averaging around thirty-eight suicides per day. Between 2010 and 2019, the country recorded approximately 112,230 suicides.

Case 2 – GAD (Generalized anxiety disorder)

“The participant seen, represented by the letter R., is 18 years old, female, single, and a third-year high school student. She lives with her parents and younger sister, maintaining a good relationship based on dialogue. Since childhood, R. has had various fears and underwent therapy at the age of nine due to fear of sleeping in the dark and alone. Currently, she has no physical or mental health issues, has never taken anxiety medication, and has not sought treatment beyond therapy in childhood. Her anxiety, considered mild since childhood, worsened in high school due to the pressure of college entrance exams. Anxiety attacks affect her activities and interpersonal relationships. She decided to better control her anxiety as she is in her final year of high school and preparing for college entrance exams. As a third-year high school student, she faces difficulties with self-confidence and high self-criticism, influenced by parental expectations. She puts a lot of pressure on herself and gets frustrated when she doesn't meet her own expectations. Additionally, she experiences intense fears such as claustrophobia on buses and elevators, fear of dogs, and distress when alone at home. Her goal is to learn to cope with these fears and reduce the anxiety that impacts her daily activities. Earlier this year, she ended a relationship, which left her feeling sad and lonely as her ex-boyfriend was her main support. She is afraid to open up to people and fears pushing them away, believing she is not important enough. She experiences anxiety in various

situations such as studying for college entrance exams, being in enclosed spaces, worrying about the future and interpersonal relationships, as well as physical and psychological symptoms associated with anxiety. The young woman frequently experiences trembling in her legs and hands, rapid heartbeat, shortness of breath, hot flashes, sweating, facial flushing, muscle tension, and difficulty relaxing without a specific reason. Additionally, she presents psychological symptoms such as constant fear of the worst happening, nervousness, feelings of terror, and dread. However, the patient has never had panic attacks.”

According to the authors, one of the main indicators of therapeutic success was the improvement in depressive mood, which could be objectively observed in cognitive therapy due to its evidence-based approach. Additionally, the patient demonstrated more skilled and less aggressive or passive responses in social relationships, leading to significant improvements such as ending an extramarital relationship and reconciling with a friend. The authors also point out that individuals with depressive symptoms may have deficits in social skills repertoire and dysfunctional thoughts, contributing to worsening depressive mood. In the case of the patient, her deficits in social skills impacted her affective relationships, benefiting from assertiveness training applied in her therapy.

The authors analyze patient's dysfunctional beliefs about not being loved, being rejected, and having no value contributed to the development of harmful strategies such as emotional dependence and passive-aggressive behaviors. Cognitive flexibility was essential in promoting behavioral and depressive mood changes in the patient. The patient's refusal to undergo concurrent psychiatric treatment may have contributed to the therapy extending beyond 40 sessions. While some authors argue

that there are no differences in outcomes between combined treatments (pharmacotherapy and psychotherapy) and psychotherapy alone, others advocate that combined treatment may lead to better results.

The latest major global mapping of mental disorders conducted by the WHO reveals that Brazil has the population with the highest prevalence of anxiety disorders in the world. Approximately 9.3 percent of Brazilians suffer from pathological anxiety, with Paraguay (7.6 percent), Norway (7.4 percent), New Zealand (7.3 percent), and Australia (7 percent) following closely behind.

Some factors connected to the increase of the disease are high unemployment rates, frequent changes in the direction of the economy, and lack of public safety as the main factors contributing to the high prevalence of anxiety disorders in the population. The high level of violence in Brazil is pointed as a major source of anxiety, with many people fearing being assaulted when leaving their homes.

Limited access to mental health services, long working hours, uncertainties about the future, and poor quality of life are also mentioned as factors that generate feelings of fear, worry, and distress among a significant portion of the Brazilian population. The case of R., a young girl in college, exemplifies the pressure that young adults feel from an early age, and the expectations of family and society can trigger or aggravate anxiety. In the case of Brazil, which has economic instability, young people tend to suffer even more at the beginning of their adult lives, when they are about to take their university entrance exams or enter the job market.

The impact of social media is also noted, with individuals feeling pressured to meet certain standards set by influencers, leading to increased anxiety. The increased use of social networks and the internet is a factor in the rise of anxiety among

young Brazilians, who are exposed to a large amount of content on a daily basis. This exposure at this age can be harmful, as young people often lack the discernment and critical thinking to absorb what is constructive and evaluate what can be harmful, such as constant comparisons. Thus, the complex interplay of social, economic, and technological factors contributes to the high prevalence of anxiety disorders in Brazil.

Case 3 – Burnout

“A., 50 years old, married, technician in telecommunications, working for a telephone company for 28 years. His problems started in 1996, after successive administrative changes: he was transferred from his unit twice and took over, without previous consultation, a management 5 position, increasing his responsibilities, while personnel were being reduced. His new tasks included firing employees. To learn his new job, he started working late on weekends. He started feeling physically exhausted, anxious, tense and insomniac. After the company was privatized, a process of productive restructuring was installed, including mass dismissals and service expansion. New employees were not sufficiently qualified for their jobs, which demanded greater effort in supervising them. There were successive “changes in guidelines” (“they told us to do it in one way, and on the following day that was no longer used, all the work was thrown away”), besides dismissal threats, employees’ demoralization and increasingly higher demands of productivity (“when our goal was not achieved, it’s because we were incompetent; when we managed to achieve it, we should have worked harder to go beyond it”). In addition to physical exhaustion, he felt demanded beyond his emotional limit. Thinking about work made him irritated and impatient, in opposition to what he had always been (he

considered work as a priority, source of personal satisfaction and pride). He started presenting, besides anxiety, deep sadness, lack of pleasure in activities, difficulty in taking decisions, loss of appetite and weight (around 14 kg in 7 months), memory “blanks”, hopelessness, feeling of personal devaluation and desire to die. He was then taken away from his work and started psychiatric treatment in 2000. He used many associations: thioridazine 10-30 mg/day, cloxazolam 2 mg/day, sulpiride 300-600 mg/day, biperiden 2-4 mg/day, nortriptyline 25-75 mg/day. He was referred to the Instituto de Psiquiatria da Universidade Federal do Rio de Janeiro (IPUB) after 2 years of private treatment. He was taking oxcarbazepine 600 mg/day, clonazepam 4 mg/day and levomepromazine 50 mg/day, which were then replaced by imipramine 75-150 mg/day, chlorpromazine 100 mg/day and diazepam 10 mg/day (current treatment). He progressed with major improvement in anxiety and insomnia, partial improvement in depressive symptoms and intense difficulty in dealing with work-related situations. He retired due to disability 1 year after being admitted to IPUB.” (Vieira, I. Ramos, A. Martins, D. et al., 2006).

Studies conducted by the University of São Paulo (USP) reveal alarming statistics, positioning Brazil as the second country globally with the highest rates of Burnout. This underscores the urgent need to examine working conditions and contributing factors to address this concerning trend. The alarming growth of Burnout is connected to a culture of excess, that drives individuals to surpass their limits in pursuit of success, often at the expense of their mental and emotional well-being. The prevailing notion that one must go above and beyond in their work, coupled with a results-driven and toxic work environment, contributes to the high prevalence of Burnout cases. In the case of Burnout, the critical need for a paradigm shifts in how

workplaces approach mental health and well-being to prevent and manage Burnout effectively.

Another study, conducted by the International Stress Management Association (Isma) that reveals Brazil as the second country with the highest number of Burnout cases, behind only Japan, highlights the seriousness of the situation in the country. The high incidence of Burnout can be correlated with the economic crisis in Brazil and the lack of quality jobs. The economic crisis can lead to increased pressure on workers, who face job insecurity, low wages, and poor working conditions. These factors can significantly contribute to the development of Burnout, as workers are forced to deal with a stressful and draining work environment.

Furthermore, the lack of quality jobs can lead workers to accept abusive or excessive working conditions, thus increasing the risk of Burnout. The competition for scarce jobs can also create a culture of excess and overload, where workers feel the need to push themselves beyond their limits to secure their position. Therefore, this situation may be significantly contributing to the high incidence of Burnout in the country, highlighting the urgent need to address not only the individual symptoms of the syndrome but also the structural conditions that make it so prevalent. Measures to improve working conditions, promote a healthy and balanced environment, and ensure adequate protections for workers are essential to combat Burnout in a context of economic crisis and job scarcity.

Case 4 – Schizophrenia

“This is a female patient, referred to as Amethyst, 57 years old, diagnosed with paranoid schizophrenia in 2012, and also has diabetes and hypertension. According to collected data, Amethyst was married and worked as a nurse in the state of São

Paulo, where she lived with her husband and two daughters until their separation in 1990. Amethyst took care of her daughters alone, facing difficulties including financial struggles. The patient reported that symptoms of schizophrenia appeared after these events. After the separation and ceasing her profession, Amethyst left her adult daughters in São Paulo and moved to Belo Horizonte to live with her brother, who, according to patient records, also has an unspecified mental illness. However, Amethyst lives alone in a shack on the same property as her brother, where they share expenses. The living conditions at her residence are poor, including issues related to hoarding. It was under these conditions that Amethyst was first found in 2012, displaying social isolation, delusions of persecution (believing her family was trying to invade her home), disorganized thoughts, psychomotor agitation, and non-adherence to medication. She was admitted to CERSAM on 06/19/12 for 8 months before being discharged. Following this initial admission, she underwent four more admissions in December 2013, August 2015, May 2016, and the most recent one in August 2017, all due to psychomotor agitation crises. According to her medical records, the patient has Paranoid Schizophrenia. Symptoms emerged during the separation from her husband, taking care of her daughters without assistance, and abandoning her profession. These facts align with the "vulnerability versus stress" theory proposed by the Ministry of Health (2013), suggesting that vulnerability increases the risk for symptom development in the presence of environmental stressors and a failure to cope with them. Vulnerability factors are based on biological components, including genetic predisposition interacting with complex physical, environmental, and psychological factors. Characteristic findings of this condition such as persecutory delusions, loss of contact with reality, psychotic episodes, psychomotor agitation, social isolation, and

neglect of personal hygiene were presented by Amethyst. Currently, the patient's condition is stable, taking daily medications including Risperidone, Metformin, Clonazepam, Levothyroxine, Furosemide, and Captopril. Amethyst is in good interactive state and reports visiting CERSAM "to take medication and participate in workshops." In verbal communication, Amethyst revealed following the Adventist faith, a religion marked by health principles."

Schizophrenia is a severe mental illness characterized by loss of energy, initiative, and interest, with the presence of depressive states, isolation, inappropriate behavior, and neglect of appearance and personal hygiene. Initial symptoms may persist for weeks or months before the emergence of more characteristic symptoms of the disease, such as hallucinations and delusions. Schizophrenia is considered the most debilitating mental illness for the affected individual, their family, and friends. The causes are unknown, but the "vulnerability versus stress" theory is widely accepted, suggesting that biological, genetic, and environmental factors interact to increase the risk of developing symptoms. Symptoms typically begin in adolescence or early adulthood and include psychosis, hallucinations, delusions, disorganized speech, blunted affect, cognitive deficits, and occupational and social dysfunction. The delusional manifestations of schizophrenia are attributed to neurochemical changes in dopamine functions in the brain, with positive symptoms related to increased activity of the dopaminergic system in the mesolimbic pathway and negative symptoms associated with low dopaminergic activity in the mesocortical region.

Case 5 – Bipolar Disorder

“Male patient, 44 years old, mixed race, divorced, former lawyer (retired due to disability), originally from the countryside of the state of São Paulo, diagnosed with bipolar disorder 7 years ago and currently hospitalized in a psychiatric hospital. The patient's ex-wife, who provided information about him, met him while he was working at a renowned shoe factory in the city where they lived. After two years of relationship, they moved in together and had three daughters. She claims that for many years the patient did not show any behavioral or affective changes until he started showing symptoms of the disorder at the age of 37. The first symptoms observed were difficulties with concentration and memory, insomnia, and illogical thoughts. Later on, auditory hallucinations, delusions of persecution and infidelity, grandiose thoughts claiming to be a professor, federal judge, and psychiatrist emerged. On one occasion, the patient was stopped from teaching at a university. Another time, during a police checkpoint, he refused to show his documents claiming to be a federal judge. Additionally, during hospitalizations, he claimed to be a psychiatrist and refused treatment from medical professionals. The patient was diagnosed with bipolar disorder type I at age 37 after ruling out organic medical conditions and started pharmacological treatment. A year later, due to adverse effects of medication such as drowsiness and tremors, he stopped treatment on his own. The ex-wife noted significant social dysfunction in the patient, especially during manic episodes. Currently, he is hospitalized in a psychiatric hospital showing improvement in his manic state. The patient remains in a persistent manic state marked by behavior changes associated with hallucinations and grandiose delusions. The ex-wife denies episodes of aggression towards others or suicidal ideation during the time she lived with the patient. She mentioned that due to the persistence of manic episodes, the patient lost his job, they

separated, and he ended up living on the streets. The patient's brother and current caretaker reported that after one of the patient's manic episodes, he went missing for 2 years and was found in Argentina after communication with the consulate. At that time, the patient showed poor hygiene, signs of alcoholism, and grandiose delusions. The patient in question has been hospitalized three times in psychiatric hospitals. He denies any other comorbidities, allergies, or surgeries, and was an alcoholic and drug user. His mother has a diagnosis of schizophrenia, a deceased brother had a psychiatric illness, and one daughter is undergoing treatment for depression. Mental state examination of the patient upon hospital admission: General Presentation - Appearance: unkempt, inconsistent with age and gender. Psychomotor activity: gesticulation and hyperactivity. Interview setting: in an office, calm environment, with three interviewers. Language and Thought - Speech characteristics: spontaneous speech, increased volume. Speech progression: accelerated flow and interrupts the examiner. Thought form: tangentiality, perseveration, and neologism. Thought content: anxious. Logicity: illogical speech, with systematized delusions of grandeur. Abstraction ability: impaired. Sensory perception: depersonalization, absence of illusions or hallucinations. Affectivity and Mood - Emotional tone: anxiety, hostility, and excitement. Modulation: normomodulated. Thought/affect association: inappropriate. Organic equivalents: preserved. Attention and Concentration: impaired. Memory: not evaluated. Orientation: autopsychic and alopsychic preserved. Consciousness: vigilant. Intellectual capacity: impaired. Reality Judgment: absent insight.” (Santos, Otte, Da Silva et al. 2020).

The case brings out the importance of several factors in the evolutionary course of bipolar disorder (BD) and in the functioning of affected patients. These factors include the age of

onset of the illness, the use of psychoactive substances, the severity of mood episodes, the presence of cognitive deficits, and non-adherence to treatment. Professionals dealing with patients with bipolar disorder are advised to consider these aspects when recommending appropriate pharmacological and psychological therapies or referring them to specialized treatment. The mentioned case study emphasizes a patient diagnosed with BD who did not receive proper treatment at the onset of clinical manifestations, resulting in a more severe condition of the illness, with significant impact on independence, autonomy, and functionality. This points up the importance of early diagnosis and appropriate treatment for patients, as emphasized by several authors. The need for a comprehensive and individualized approach in managing bipolar disorder, aims to improve the quality of life and prognosis of affected patients.

Government strategy to eliminate the mental disorders

Since 1988, Brazil has had a universal health system, but with a significant presence of the private sector in healthcare. Approximately 25 percent of the population has private health insurance, leading to a mixed usage of public and private services. The public sector has made consistent investments in primary healthcare, with a national coverage rate of 74 percent in 2017, although regional disparities exist. Mental health care is integrated into the public health system, primarily focusing on community-based services rather than psychiatric hospitals. The mental health policy has undergone significant changes over the past four decades. Prior to the 1980s, the mental health system was primarily hospital-based, but a social movement led by professionals and patient associations challenged this model due to ethics and efficacy concerns, leading to the Brazilian Psychiatric Reform movement. (Amaral, 2018).

Significant progress was made in the deinstitutionalization process in Brazil. Between 2001 and 2014, there was a substantial decrease in the number of psychiatric hospital beds, from 53,962 in 2001 to 25,988 in 2014. This reduction had its roots in the previous decade when audits led to the closure of inadequate psychiatric hospitals or those with reported human rights violations. The movement that emerged in the 1980s and 1990s paved the way for the psychiatric reform law in 2001, which facilitated the reduction of psychiatric beds and introduced measures to enhance care for long-term institutionalized patients, such as the development of residential services. Deinstitutionalization was a carefully planned and gradual process. Larger psychiatric hospitals with more than 400 beds saw a reduction from 30 percent of all beds in 2002 to 10.5 percent by 2011, while smaller hospitals with fewer than 160 beds increased their share from 22 percent to 52 percent during the same period. Funding was redirected from psychiatric hospitals to community services, leading to a significant increase in resources allocated to community care. Despite the progress made, weaknesses in policy implementation persisted, presenting ongoing challenges in the mental health system. Residential treatment services accommodating up to eight patients also played a crucial role in deinstitutionalization. The "Volta para-Casa" program, initiated in 2003, provided financial support and case management for deinstitutionalized patients, contributing to their successful reintegration into society (Almeida, 2019).

In 1992, community mental health services (Centros de Atenção Psicossocial—CAPS) became a national policy, and in 2001, a federal law prohibited the creation of new beds in psychiatric hospitals to prioritize community services. The budget allocation for mental health care shifted towards community care in 2006 and continued to increase, reaching 79

percent in 2013. Additional policies were implemented to support integrated mental health care networks at different provider levels, like the implementation of the program NASF (Núcleos de Apoio à Saúde da Família), which, according to the Ministry of Health, have the objective of supporting the consolidation of primary care in Brazil, expanding the health offers in the service network, as well as the resoluteness, scope and target of the actions. (Amaral, 2018).

Community-based services, particularly the CAPS, were established to replace hospital-based care. Different types of CAPS were created to cater to specific populations with distinct needs, such as children and adolescents (CAPS-I) and individuals with substance abuse issues (CAPS-AD). Also, the number of CAPS increased significantly over the years, reaching 2,462 in 2017 (Almeida, 2019).

Currently, CAPS and NASF are key services in the national policy, along with other ambulatory care services. Mental health crises are primarily managed in psychiatric hospitals, general hospital psychiatric units, and specific 24-hour community mental health services. Despite national and local mental health policies, there is variability in service availability and care pathways due to weak regulatory power and autonomy in clinical practice (Amaral, 2018).

In that sense, while Brazil has made notable advancements in mental health care through deinstitutionalization efforts, there is still room for improvement to address existing weaknesses and ensure comprehensive and effective mental health services for all individuals (Almeida, 2019).

The restructuring of the conventional health care model in Brazil is closely linked to the adoption of client-centered practices, seeking to guarantee more humanized and effective care, and primary care stands out as an organizing strategy for health services, systems and practices. It represents people's

closest point of entry to the health system, integrating the principles of the SUS and promoting comprehensive and universal care.

In the area of mental health, the Psychiatric Reform has triggered significant changes in the model of care, prioritizing the territory as a fundamental space for care. The implementation of services to replace psychiatric hospitals reflects the search for a more humanized and inclusive approach. These services aim to promote the recovery of citizenship and the autonomy of individuals, guaranteeing comprehensive and qualified mental health care (Souza, Amarante, Abrahao, 2019).

These transformations aim not only to improve the quality of health services, but also to promote social inclusion and respect for the rights of people in situations of vulnerability. This reorientation of the health care model in Brazil reflects a commitment to promoting equity, dignity and the well-being of health service users, contributing to a fairer and more supportive society. In this context, Souza, Santos and Abrahao (2019) point to the inclusion of mental health in Brazilian primary care as a device for access to health. Networking would, in this context, be an important device for adopting new forms of care.

The authors make a detailed analysis of the inclusion of mental health actions in primary care, highlighting facilitators and challenges encountered in this process. The strategy of building care forms based on solidarity, autonomy, and citizenship of users is pointed out as an important facilitator for expanding user participation in social exchanges in the city. This involves care technologies materialized through shared home visits, community and cultural activities that are not limited to primary care or mental health users but extend to the general population. Another facilitator mentioned is matrix support, which serves as a tool for implementing mental health actions in

primary care. Matrix support takes different forms, such as dedicated space/time for discussions between CAPS and primary care professionals, shared appointments, and joint home visits. This practice enhances team co-responsibility and contributes to a more integrated and effective approach. However, the authors also emphasize challenges in including mental health actions in primary care, such as a reduced number of trained and available professionals, insufficient training, management issues, and funding. Primary care professionals mention service precariousness and lack of specialized training as obstacles to implementing mental health care. On the other hand, CAPS professionals point out situations that go beyond health issues, social vulnerability, and lack of resources as factors hindering this inclusion. It is evident that primary care services do not fully assume mental health care responsibilities, lacking spaces and forums for a co-responsible approach. Despite this, innovative care practices and technologies that move towards more comprehensive and sensitive care are observed. The construction of effective, affective, and supportive networks among territory resources is highlighted as progress, although still incipient in some areas where intersectoral work is seen as an ethical and political imperative (Souza, Santos & Abrahao, 2019).

Trapé and Onocko-Campos (2019) analyzed the mental health care model in Brazil, punctuating financing, governance processes, and evaluation mechanisms. One key concern raised by the authors is the chronic underfunding of mental health services, posing a challenge to the effective implementation of the mental health care model. While an increase in the total budget for health services could potentially improve service delivery, without addressing underlying organizational issues, such growth may not lead to substantial improvements.

Furthermore, a greater focus on assessment and evaluation practices within the bureaucratic field is called for to inform decision-making processes and drive improvements in the mental health care model. By creating a Psychosocial Care Index that captures key indicators of the current policy objectives, stakeholders can better understand the strengths and weaknesses of the system, enhance transparency for users and society, and identify areas for improvement (Trapé & Onocko-Campos, 2019).

The importance of considering institutional and professional practices in shaping mental health care models is also highlighted. It acknowledges that different models may emerge based on micropolitical relations and interactions between service providers, professionals, and users. By recognizing this complexity and striving for a synthesis between official policies and daily practices, stakeholders can work towards a more effective and responsive mental health care system.

In conclusion, there is a need for continued evaluation, funding, and organizational reform within the mental health sector in Brazil to ensure the successful implementation and sustainability of the psychosocial care model. By addressing these key areas, policymakers can work towards a more comprehensive and integrated approach to mental health care that meets the evolving needs of the population (Trapé & Onocko-Campos, 2019).

Is there any new treatment or method for mental disorders in Brazil?

Mental disorders have far-reaching negative consequences that impact society on various levels. These include economic losses in terms of human capital, a decrease in qualified and

educated workers, hindrance of children's health and overall development, workforce reductions, increased violence, criminality, homelessness, poverty, premature death, health issues, unemployment, and additional financial burdens on family members. The allocation of resources for treating mental disorders should be guided by economic considerations, focusing on cost-effectiveness data for interventions and services, as well as evaluating broader outcomes. Priority should be given to individuals suffering from severe mental disorders and vulnerable or disadvantaged groups (Mateus et al. 2020).

Reports from the World Health Organization (WHO) and initiatives like the Lancet Global Mental Health call emphasize the neglect and stigma surrounding mental illness as major obstacles to making mental health a public health priority, especially in low and middle-income countries. In Brazil, over 400 mental health professionals came together to review current policies and make recommendations for expanding services in the country. Key recommendations included increasing mental health expenditure, expanding community centers and psychiatric beds in general hospitals, transitioning patients from long-stay psychiatric hospitals to community residential facilities, enhancing mental health training for healthcare professionals, improving the mental health information system, establishing a Master of Science program in Mental Health Planning, and allocating additional funds for mental health research (Mateus et al., 2020).

Brazil has implemented innovative services and programs like Community Psychosocial Centers (CAPS), primary care networks, and the Return Home program to improve mental health services nationwide. However, there are disparities in service distribution across different regions of the country, exacerbated by the growing elderly population and an existing treatment gap in mental healthcare. Without increased funding

and expansion of mental health services, this gap is likely to widen further. There is a lack of solid data on the cost-effectiveness of community services under current policies and no clear indicators to assess the outcomes. Despite some progress, significant challenges remain before Brazil can establish a robust and sustainable psychiatric care system (Mateus et al., 2020).

Razzouk, Caparrocce, Sousa (2020) describe the Community mental healthcare as a new approach to this subject, that refers to a system of mental health services and support that are provided within a community setting, such as clinics, community centers, or even in people's homes. This approach focuses on delivering mental health care that is accessible, culturally sensitive, and tailored to the specific needs of individuals within a community. Also, community mental healthcare often involves a multidisciplinary team of professionals, including psychiatrists, psychologists, social workers, and other mental health professionals, working together to provide comprehensive care.

The goal of community mental health care is to promote mental health and well-being, prevent mental health problems, and provide early intervention and treatment for individuals experiencing mental health issues. By offering services in the community, rather than in institutional settings, community mental health care aims to reduce stigma, improve access to care, and support individuals in their recovery journey. This approach emphasizes collaboration with individuals, families, and communities to address mental health needs holistically and promote overall wellness.

The shift from the hospital model to a community mental health model in Brazil has been evolving over the past few decades, resulting in a significant decrease in the number of

psychiatric hospital beds. The "Programa Nacional de Avaliação dos Serviços Hospitalares-PNASH," created to evaluate psychiatric hospitals, aims to ensure quality standards of care and support health managers by assessing user satisfaction, establishing performance indicators, and addressing issues like inappropriate structure, abuse reports, and human rights infringements. Despite Law Number 1631/2015 establishing an ideal rate of 0.45 psychiatric beds per 1,000 inhabitants, the coverage for psychiatric hospitalization dropped by 40 percent between 2005 and 2016, leading to a shortage of psychiatric beds in the country. While there was a slight increase in the number of psychiatric beds in general hospitals during this period, there remains an unequal distribution of psychiatric beds across different regions of Brazil. (Razzouk, Caparroce, Sousa, 2020).

The Brazilian community mental health system, known as the "Rede de atenção psicossocial – RAPS," was established in 2011 to prevent, treat, and promote social inclusion for individuals with mental illness and substance abuse issues. Recently, additional services such as mental health outpatient services, drug rehabilitation centers, and psychiatric and day hospitals have been included in the RAPS. Mental health services are integrated into the broader healthcare system, with individuals with mild to moderate mental health issues treated in primary care by general practitioners and those with more severe disorders receiving care from mental health specialists in outpatient services or specialized Centres of Psychosocial Care (CAPS). Overall, the Brazilian mental health system is working towards providing comprehensive care for individuals with mental health issues, but challenges remain, including disparities in service distribution and the need to address the shortage of psychiatric beds in certain regions. Efforts to improve access to mental health services and ensure quality care are ongoing within the country (Razzouk, Caparroce, Sousa, 2020).

For the authors, the implementation of community mental healthcare in Brazil is an ongoing process that involves adaptations based on diverse viewpoints with each new government directive. The absence of a comprehensive action plan for mental healthcare leads to disruptions in services and programs, ultimately resulting in a squandering of resources whenever a new mandate is introduced. A significant obstacle to further progress is the lack of transparency regarding information and costs related to mental health services. There is a critical need for the integration of multiple services and the development of long-term planning phases. Additionally, aligning national research evidence with mental health policies is crucial to effectively address the needs of vulnerable populations (Razzouk, Caparrocce, Sousa, 2020).

In Brazil, as well as in other countries, there is a growing demand for new approaches and treatments for mental health. Some of the new treatments and approaches gaining prominence in the country include telepsychiatry and telemedicine, technology-based interventions, alternative and complementary therapies, integrative approaches, and online psychotherapy. These innovative strategies aim to improve access to mental health services, provide holistic care, and cater to the evolving needs of individuals with mental health disorders. The adoption of these new approaches reflects a commitment to innovation and enhancement in mental health care in Brazil.

The use of medicinal plants for health treatment, cure, or disease prevention is considered one of the oldest forms of medical practice. Even in modern times, medicinal plants and other alternative practices remain essential therapeutic resources for many communities and ethnic groups, particularly in developing countries. Since the Alma Ata Declaration in the late 1970s, the World Health Organization (WHO) has supported the

safe use of medicinal plants for health treatments, recognizing that around 80 percent of the global population relies on these resources for primary healthcare. It is noteworthy that residents of developing countries are the primary users of traditional medicine practices, and these countries harbor 67 percent of the world's plant species (Moraes & Siqueira, 2020).

The WHO established the Traditional Medicine Program in the late 1970s, and in subsequent years, they have emphasized their commitment to promoting the integration of traditional medicine into the healthcare systems of all member states. In countries where allopathic medicine dominates or where traditional medicine has not yet been fully integrated into national health systems, traditional medicine is often referred to as Complementary or Alternative Medicine. This program aims to stimulate the development of public policies that facilitate the inclusion of traditional medicine practices in healthcare systems worldwide (Moraes & Siqueira, 2020).

In the last decade, especially after the COVID-19 pandemic, the use of telemedicine has grown significantly in Brazil. Telemedicine is the practice of providing medical services remotely, typically through video calls or other forms of communication technology. It allows patients to consult with healthcare professionals and receive diagnoses, treatment recommendations, and prescriptions without needing to visit a physical healthcare facility. This approach has become increasingly popular due to its convenience, accessibility, and ability to provide care to individuals who may have difficulty accessing traditional healthcare services.

In this context, telemedicine and mental health are closely related as telemedicine can be used to provide mental health services, known as telemental health. It allows mental health professionals to deliver therapy, counseling, and other mental

health services remotely through video calls, phone calls, or online messaging platforms.

In Brazil, telemental health has become increasingly popular as it provides individuals with convenient access to mental health support from their own homes. This can be particularly beneficial for individuals who may have difficulty accessing traditional in-person mental health services due to various barriers such as location, transportation issues, or stigma. The use of telemedicine in mental health care has also been shown to increase access to mental health services for individuals in rural or underserved areas where mental health providers may be limited. Additionally, it can help reduce the stigma associated with seeking mental health treatment by offering a more private and discreet way to access care. Overall, telemedicine and telemental health play a crucial role in expanding access to mental health services and improving the overall well-being of individuals who may not have otherwise been able to receive the care they need.

Cordioli (2023) presents the results of an opinion survey study conducted on 302 physicians from a large hospital in São Paulo, highlighting the increasing popularity of telemedicine (TM) among physicians in their daily practice. The study shows that TM was already considered an interesting tool for providing medical care in areas with limited access to physicians before the COVID-19 pandemic. However, the pandemic and the need for social distancing made TM an essential and highly useful tool for healthcare professionals.

The survey revealed a significant increase in the number of physicians using specific platforms for telemedicine during the pandemic, as well as a growing intention to continue using TM even after the pandemic situation improves. Physicians in Brazil expressed a favorable opinion of telemedicine, emphasizing the

importance of implementing TM as a routine method for medical care delivery. The regulation of telemedicine by the Federal Council of Medicine (CFM) was seen as crucial to ensure safe practices and prevent unsafe activities in the medical field.

The author also discusses other studies that have analyzed physicians' acceptance of telemedicine, noting that while there is a high level of satisfaction with teleconsultations, technical and organizational issues can influence physicians' intention to use telemedicine platforms in the future. Despite these challenges, there has been a significant increase in the number of physicians using telemedicine platforms, indicating a positive trend towards the adoption of telemedicine in healthcare practice. In general, the importance of regulatory agencies like the CFM in swiftly adapting to technological advancements in healthcare, as telemedicine has proven to be a valuable tool during the pandemic and beyond. The favorable opinion of physicians towards telemedicine in Brazil can inform future health policies and contribute to the widespread adoption of telemedicine as a standard practice in medical care delivery (Cordioli, 2023)

What is the common treatment used by Brazil?

The Brazilian public health system, SUS, was established in 1988 with the aim of providing universal, equitable, and inclusive healthcare. However, almost 20 percent of the population has access to private health insurance. The mental healthcare system in Brazil underwent a significant reform in the 1990s, resulting in a remarkable 41 percent decrease in the number of psychiatric beds and a significant increase in community mental healthcare provision. The establishment of 848 psychosocial community care centers (CAPS) in 2006 and the subsequent increase to 1742 CAPS in 2012 were notable achievements. However, the distribution of these centers is uneven across the country. Psychiatric services are not

integrated, and there is no communication between different levels of care. Policies are not based on evidence but on political ideologies. There is also a strong resistance to accepting the balanced care model, which allows hospital beds for acute admissions to coexist with outpatient units and community care. Information systems and cost-benefit assessment are also lacking in the system (Mari, 2014).

As of 2022, the Brazilian RAPS comprised 2836 CAPS units spread across 1,910 municipalities. The coverage of units was classified as good, with at least 0.5 CAPS units per 100,000 inhabitants across all major regions of the country, although disparities in specific cities or regions could be unaccounted for. However, the data provided does not include information on the quality of care or more specific assessments. The Ministry of Health is responsible for monitoring and evaluating the services and actions provided within the health system, establishing mechanisms for this assessment, standards of care, and indicators of health access. The DATASUS is a National Data System of the Unified Health System that collects and stores health information on the availability of services and technologies, but most of it requires data processing to be translated into indicators and is not readily available for final assessment. Marchionatti et al. (2023) found that most mechanisms to evaluate the mental health system were insufficient, outdated, or not implemented. Some programs were instituted to evaluate key components of the mental health services, but were not continued and do not provide results concerning recent years. Overall, the authors suggest that there is a need for continued efforts to strengthen the mental health system in Brazil through systematic assessment, appropriate recommendations, and evidence-based practices (Marchionatti et al. 2023).

The lack of official data has led to academic efforts to evaluate the current stage of the mental health system. A 2017 study found significant advances in establishing a regionalized mental health system, with a larger number and diversity of services implanted in the regions of the country, a trend towards the interiorization of mental health care to medium and small cities, strong participation in primary care in continued care, and decentralization of psychosocial care beds from large cities. However, there were still significant gaps in the provision of services in some regions that only count on primary care devices and do not have a structure consistent with the minimum standard expected in terms of coverage. The uneven distribution of services and professional specialists was also identified, with many regions considered insufficient while others were concentrated. Moreover, publications assessing the quality of care found that minimally adequate mental health care was met by only about 40% of people with mental disorders accessing the mental health system, and only a small percentage of primary care teams counted on professionals trained for addressing mental health conditions and providing mental health care. These findings suggest that there is a need for continued efforts to improve the availability, coverage, and quality of mental health services in Brazil (Marchionatti et al. 2023).

The Brazilian community mental health system, known as the Rede de atenção psicossocial – RAPS, is a complex network of mental health services aimed at preventing, treating, and promoting the social inclusion of individuals with mental illness and drug misuse. The RAPS was created in 2011 and has recently been expanded to include other services such as mental health outpatient services, drug rehabilitation centers, and psychiatric and day hospitals. Mental health services are integrated into the entire health system, with referrals coming from primary care units, first-aid care, emergency care, hospitals, and self-referrals.

The system provides treatment for individuals with mild to moderate mental health problems in primary care by general practitioners under the supervision of mental health specialists. People with moderate to severe mental disorders are treated by mental health specialists in outpatient services, while those with psychosis, alcohol and drug disorders, autism, and other severe mental disorders are treated in different types of Centers of Psychosocial Care (CAPS). Overall, the Brazilian community mental health system appears to be a comprehensive and integrated approach to addressing mental health issues (Razzouk, Caparroce, Sousa, 2020).

The primary health care structure in Brazil, which includes community health agents, is a strong foundation for addressing the mental health needs of the population. The promotion, prevention, treatment, and recovery of mental health at the primary care level by non-specialists is desirable and feasible, and could be expanded beyond primary care clinics. However, before considering the use of lay workers, it is necessary to evaluate and address the gaps that hinder the work of existing teams within the SUS. Additionally, efforts to model private healthcare in Brazil according to a primary care logic may be beneficial. The implementation of evidence-based practices within the SUS will be crucial to responding to existing challenges exacerbated by the pandemic. The expansion of community-based centers (CAPS) for psychiatric treatment and psychosocial support/rehabilitation is also important, as they could be leveraged upon for articulation of the continuum of care. For young people, who are the most susceptible group to mental disorders, mental health care could be integrated into youth-centered initiatives such as education and welfare programs. Brazil's large cohort of young people presents a unique opportunity to prevent and act early to avoid recurrence and

chronicity of mental health issues. The overall recognition of the importance of mental health has also increased significantly in recent years. (Pimentel et al., 2023).

Brazil faces major challenges in treating mental health. Despite being one of the countries with the highest prevalence of mental disorders in the Americas, access to mental health services is limited. The lack of investment in mental health, the lack of specialized professionals, and the stigma surrounding mental disorders are some of the obstacles that prevent access to mental health services.

In addition, communication between mental health policies and the population is insufficient, making it difficult to raise awareness about mental disorders and seek appropriate treatment. The lack of information about available services and misinformation about mental disorders contribute to the low number of people seeking help.

Another challenge faced by Brazil is the high suicide rate. The country has one of the highest suicide rates in Latin America, with 5.8 deaths per 100,000 inhabitants in 2014. The lack of access to mental health services is a factor that contributes to this high suicide rate, as well as the stigma associated with mental disorders. Brazil still has much to do to improve the treatment of mental health. It is necessary to invest in accessible and quality mental health services, as well as improve communication between mental health policies and the population.

AI for Mental Disorders Treatment

Tentori et al. (2020) discussed the challenges and opportunities for digital health (DH) research in Latin America, specifically focusing on Mexico and Brazil. It pointed to the difficulties in collecting and maintaining health data in the region due to various factors such as the lack of infrastructure, data quality issues, and limited resources in healthcare facilities.

Besides difficulties, it was emphasized the importance of leveraging healthcare analytics, artificial intelligence (AI), and public health (PH) to improve the healthcare system in Latin America (LATAM). The need for innovative technology to facilitate data collection and analysis in naturalistic conditions, as well as the challenges of integrating diverse sources of data and ensuring data accuracy, was highlighted in this particular study. Besides, current DH solutions often do not address the specific healthcare needs of Latin American citizens, with a tendency towards a "one-size-fits-all" approach, and emphasized the importance of developing personalized and adaptive decision models to better serve the diverse population in the region.

Currently, especially after the COVID-19 pandemic, research is being conducted in the field of artificial intelligence in mental health in Brazil, paving the way for opportunities and challenges. AI has the potential to revolutionize the way mental health services are delivered, offering personalized and efficient solutions for individuals seeking support. With the increasing prevalence of mental disorders in Brazil, AI can play a crucial role in providing timely and accessible care for those in need.

Matheson et al. (2023) developed a randomized controlled trial (RCT) that evaluated the effectiveness of a chatbot with micro interventions on body image among Brazilian adolescents. The study explored the effects of a chatbot containing micro interventions on body image and well-being among adolescents aged 13 to 18. The findings revealed positive effects for both girls and boys, with improvements in body satisfaction, positive affect, body esteem, and body image self-efficacy. Gender did not moderate the intervention's effects, but baseline concerns influenced the magnitude of benefits, particularly for those with lower initial levels.

Comparisons with prior research indicated consistent small immediate and sustained improvements in body image following micro interventions. While larger effects were noted in longer interventions and specific sample groups, the current study highlighted the efficacy of short-term micro interventions through a chatbot platform. Adherence and engagement rates showed that less than half of the participants utilized the chatbot, but those who engaged completed multiple micro interventions.

The discussion on participant engagement levels in micro intervention and chatbot trials reveals interesting insights. Previous trials showed that women completed an average of 4 techniques over longer periods, while participants in the current trial completed more techniques in a shorter time frame. This suggests that the participants in this study engaged more intensely with the content within a condensed period. Further research on naturalistic and longitudinal use of micro interventions and chatbots is needed to better understand user engagement patterns when intervention time frames are flexible. Additionally, there was no evidence of a dose-response relationship, indicating that the number of techniques completed did not impact intervention effects, aligning with previous findings.

The text explores gender preferences related to avatars used in interventions, drawing on research about adult women's preferences for interventions delivered by a woman. In contrast, men did not show a clear preference between male or female facilitators. The study's findings among adolescents reflected this trend, with most girls choosing the female avatar, Dandara, and boys selecting a mix of Dandara and Gabriel. Limited research exists on adolescents' preferences for chatbot interventions, emphasizing the importance of exploring features like avatar demographics, hosting platforms, and chat functions during

intervention development to ensure acceptability, feasibility, and safety.

Comparison of attrition rates and patterns in the current trial with previous studies and broader digital mental health research reveals higher condition-specific dropouts in the intervention group, likely due to increased participant burden. Overall attrition rates were higher but consistent with digital mental health interventions in general. Various methodological factors, such as burdensome recruitment processes and lack of researcher contact with participants, contributed to these attrition rates.

The authors discuss specific methodological features that may have influenced attrition rates in the study, including Brazil's General Data Protection Law impacting parental involvement and literacy requirements for parents limiting adolescent participation. Adjustments based on stakeholder feedback, such as providing an information video alongside written content, aimed to enhance understanding and engagement. Streamlining recruitment and onboarding processes through automated communication methods and delayed disclosure of compensation amounts aligned with Brazilian ethics guidelines.

The detailed analysis sheds light on user engagement levels, gender preferences in interventions, attrition rates, and methodological considerations in digital mental health research. Understanding user behaviors, preferences, and study design elements is crucial for optimizing the effectiveness and acceptability of digital interventions for mental health outcomes. Also, the study underscores the potential of chatbots with micro interventions to enhance body image and associated well-being factors in adolescents. These findings contribute to the growing understanding of how technology-driven interventions can

positively influence mental health outcomes related to body image in young populations.

This study's findings, along with the use of artificial intelligence in interventions, can significantly contribute to identifying and treating mental health issues among adolescents. By analyzing user engagement levels, gender preferences, and attrition rates, researchers can tailor digital interventions to better meet the needs and preferences of adolescent users. The implementation of chatbots and micro interventions can provide personalized support, increase accessibility to mental health resources, and offer timely interventions for at-risk individuals. Given the rising rates of anxiety and depression among Brazilian adolescents, especially exacerbated by factors like the COVID-19 pandemic and socio-economic challenges, innovative digital mental health solutions are crucial. Leveraging AI technology in mental health interventions can enhance early detection, provide continuous monitoring, and deliver targeted support to address mental health concerns effectively (Matheson et al., 2023).

In another study, Miyoshi et al. (2018) developed and assessed an electronic health (eHealth) platform that enables the technical and informational support of a Brazilian regional network of mental health care. In this study, the development of eHealth aims to facilitate the exchange of health information to improve continuity of care between different levels of healthcare services, specifically focusing on mental health. The platform's main objective is to provide a standardized information exchange service for mental health, enhancing the quality and availability of information transparently across regional mental health services.

One of the key challenges addressed by the eHealth-Interop platform is the coordination and continuity of care across different healthcare levels, which is often hindered by informational barriers and a lack of mechanisms for information

exchange among healthcare providers. Health information systems are crucial tools to overcome these barriers, but issues such as fragmentation and heterogeneity within healthcare systems, particularly in the Brazilian national health system, limit the full advantages of their use. To address these limitations, a computational interoperable healthcare platform was developed to establish a Health Information Exchange (HIE) environment. The platform segregates sociodemographic and clinical information into separate repositories to enhance data security and extensibility. The authors also discuss the decision-making process behind the interoperability information model, emphasizing the importance of considering national standards while accommodating local and international documents used by healthcare services.

Miyoshi et al. (2018) indicated the shortage of initiatives for Health Information Exchange (HIE) in the field of mental health and points out specific challenges related to patient passages through various healthcare services, unreliable demographic information, and the lack of unique identifiers for patients. In this context, the eHealth-Interop platform is positioned as an integration middleware that enables information sharing even in situations of low reliability, with mechanisms in place to enhance data quality and ensure entity integration.

One significant outcome of this work was the measurement of data quality metrics to assess the impact of the eHealth-Interop platform on informational continuity of care, as studies on the impact of HIE in this context are still limited. Concisely, Miyoshi et al. (2018) provided insights into the development and implementation of a computational platform aimed at improving the exchange of health information, specifically focusing on mental health services, to enhance coordination and continuity of care across different healthcare levels. They also emphasized the

importance of standardization, flexibility, and data quality metrics in promoting effective Health Information Exchange.

One of the main challenges in implementing AI in mental health in Brazil is the lack of data infrastructure and standardized protocols for data collection. This hinders the development of accurate AI models that can effectively predict and diagnose mental health conditions. Additionally, there are concerns about data privacy and security, as sensitive information about individuals' mental health must be handled with the utmost care.

Despite these challenges, the possibilities of AI in mental health in Brazil are vast. AI-powered tools can help simplify the process of diagnosing mental disorders, provide personalized treatment recommendations, and even offer continuous monitoring and support to individuals in need. By leveraging AI, mental health professionals can improve the quality of care they provide and reach a larger number of patients.

Furthermore, AI can also help destigmatize mental health issues in Brazil, offering confidential and easily accessible support to individuals who may be hesitant to seek traditional mental health services. By integrating AI into mental health care systems, Brazil has the opportunity to reduce gaps in access to care and improve overall mental health outcomes for its population. While there are challenges to overcome, the use of artificial intelligence in mental health in Brazil promises to transform the way mental health services are delivered and improve outcomes for individuals struggling with mental health issues. It is essential for stakeholders to work together to address challenges and harness the full potential of AI in mental health care in Brazil.

Recommendation based on Literature reviews

Brazil's diverse geographical regions exhibit significant disparities in social, economic, and demographic aspects, leading to pronounced regional differences in economic development and social inequality. These variations pose challenges for addressing mental health issues, which have become a growing concern in the country. With high rates of depression and anxiety, particularly in densely populated urban areas, Brazil faces the urgent need to improve access to mental health services and reduce stigma surrounding mental illness. Understanding the distribution of mental illness across regions is crucial for developing effective policies and interventions to address this pressing public health issue and promote the well-being of all citizens, especially vulnerable populations. As mental disorders continue to rise and impact a significant portion of the population, prioritizing mental health services and support is essential for fostering a healthier and more equitable society in Brazil.

The complex landscape of mental health care in the country requires more than just access to services to ensure quality care for individuals with mental disorders. The study in São Paulo reveals a concerning gap in meeting basic quality standards and patient satisfaction, emphasizing the necessity for a patient-centered approach that provides evidence-based and Tailored treatments. The analysis by Pimentel et al. sheds light on intrinsic factors such as ethnicity, race, gender, education, labor, economic aspects, and violence that contribute to the increasing incidence of mental illnesses in the country. Regional disparities in demographics and social aspects underscore the importance of considering Brazil's diverse regions when addressing mental health issues and implementing policies to promote social inclusion and reduce inequalities. Efforts to improve the quality

of mental health services, address systemic inequalities, and adopt a more inclusive and personalized approach to care are essential steps towards ensuring better mental health outcomes for all individuals in Brazil.

Brazil's mental health care system has undergone significant transformations over the past few decades, transitioning from a hospital-based model to a community-focused approach. The establishment of community mental health services, such as CAPS, has been a key component of this shift, aiming to provide more accessible and integrated care for individuals with mental health disorders. The deinstitutionalization process in Brazil, marked by a reduction in psychiatric hospital beds and the development of residential services, reflects a commitment to human rights and improved quality of care. Despite these advancements, challenges remain, including variability in service availability and regulatory issues. Continued efforts to strengthen mental health policies, enhance service provision, and promote community-based care will be crucial in ensuring better mental health outcomes for all individuals in Brazil.

Health system is making strides towards providing comprehensive care for individuals with mental health issues, but challenges such as disparities in service distribution and the shortage of psychiatric beds persist. Efforts to improve access to mental health services and ensure quality care are ongoing. The implementation of community mental healthcare in Brazil is a dynamic process that requires adaptations based on diverse viewpoints and government directives. Addressing the lack of a comprehensive action plan, improving transparency, integrating services, and aligning research with policies are crucial for further progress. The adoption of innovative approaches like telepsychiatry, technology-based interventions, and alternative therapies demonstrates a commitment to enhancing mental health

care in Brazil. Additionally, the use of medicinal plants and traditional medicine practices remains significant, especially in developing countries. The acceptance of telemedicine among physicians highlights its potential in healthcare delivery, emphasizing the need for regulatory agencies to adapt swiftly to technological advancements. Overall, the positive trends towards telemedicine adoption in Brazil can inform future health policies and contribute to improved healthcare practices.

The Brazilian mental health system has made progress in expanding its coverage and services, as evidenced by the increasing number of CAPS units across the country. However, disparities in service provision and quality of care persist, with significant gaps in some regions and a lack of comprehensive data to assess the effectiveness of the system. The need for systematic evaluation, appropriate recommendations, and evidence-based practices is evident to strengthen the mental health system. Academic studies have highlighted both advancements, such as regionalization of services and decentralization of care, as well as shortcomings, including uneven distribution of services and lack of trained professionals in many areas. Moving forward, continued efforts are necessary to address these challenges and improve the availability, coverage, and quality of mental health services for all individuals.

Stigma surrounding mental health issues are crucial steps in addressing the challenges faced. The expansion and integration of community-based mental health services, along with strengthening primary care structures and increasing access to specialized professionals, are key strategies to improve this area. By addressing these gaps and working towards a more comprehensive and inclusive mental health system, Brazil can better meet the needs of its population and reduce the burden of

mental illness in the country. Continued efforts to prioritize mental health, increase awareness, and enhance access to services are essential for creating a more effective and equitable mental health system in Brazil.

Conclusion

Artificial intelligence is an advanced form of technology that encompasses programs and software capable of making decisions and performing complex tasks, using a vast amount of data and having the ability to create and manipulate digital content. When this artificial intelligence is integrated into the system of a specific machine, it is also capable of carrying out mechanical tasks autonomously. On the other hand, digital health technology, also known as Digital Health Technology, consists of the integration of digital, physical and biological technology into a highly automated and interconnected system, focusing on the health area. The term "eHealth" is used to describe the efficient and safe use of information and communication technologies in support of healthcare and related areas, covering a wide range of services such as healthcare, health surveillance, health literature, education, knowledge and health research. This approach aims to utilize digital resources to improve the delivery of medical care, monitoring population health, dissemination of health information, health education, and scientific advances in medical research.

With the advancement of patient-centered care and the increasing integration of technology as a support tool in mental health, artificial intelligence plays a fundamental role in optimizing healthcare services. Through electronic medical records shared in real time, healthcare professionals have immediate access to patient information, which makes initial care more efficient as well as the equipment used in care, optimizing time. Furthermore, AI can enable more accurate diagnoses,

suggests appropriate treatments, operates equipment, performs complex calculations and even uses 3D printing; it also paves the way for telemedicine. The digitalization of healthcare services not only benefits medicine, but also contributes to the economies of countries that invest in this area. By reducing waste, improving quality and safety in patient care, and promoting health through monitoring programs and content dissemination, digital health technology is an essential ally for the evolution of the sector.

Through the implementation of accessibility and psychological support strategies, it is possible to reach populations that face challenges in accessing health services, offering better cost-benefit solutions. Promoting self-care is facilitated by the use of mobile electronic health technologies, enabling broad coverage of interventions and the capacity to constantly monitor relevant information about users' affect, cognitions, and behaviors. Among the tools used for this purpose are virtual psychotherapists, chatbots and psychotherapy support resources. Although these tools can significantly contribute to reducing suffering and establishing bonds with users, there are still challenges to be overcome, such as ethical issues and the need for precise care in diagnosis, especially in the context of mental health, where the approach must be based on the psychopathology and the individuality of each patient.

There is no completely standardized treatment for these disorders which, due to their multifactorial nature, present challenges in adhering to treatments. However, based on the individual characteristics, complaints and symptoms of each patient, it is possible to develop a personalized therapeutic plan. Scientific studies highlight the effectiveness of psychotherapy in treating these disorders, with an emphasis on Cognitive-Behavioral Therapy (CBT) and Interpersonal Therapy as

particularly relevant approaches compared to other forms of psychotherapy, highlighting the importance of individualizing treatment according to needs of each individual. Furthermore, medication intervention, including anxiolytics and antidepressants prescribed by a psychiatrist, when necessary, plays an important role in controlling the symptoms of these disorders. Studies also highlight that practicing physical activity and a diet rich in nutrients such as Omega 3, zinc, magnesium, tryptophan and vitamins A, C, D, E and B complex can provide significant benefits in managing anxiety and depression. It is essential to consider integrated and personalized approaches to optimize therapeutic results and promote patients' mental well-being.

The social problem in Brazil is a multifaceted issue that presents numerous demands and challenges for the Unified Health System (Sistema Único de Saúde - SUS). Among the many concerns, the continued existence of psychiatric hospitals stands out as particularly worrying. These institutions have long been associated with cruel practices and human rights violations. Despite advances in mental health policies, there are still some establishments that operate outside the parameters established by the SUS, compromising bioethics and ethical principles applied to health, furthermore, this non-compliance promotes oppression and social marginalization (Sampaio, Bispo Júnior, 2021).

Custody houses in Brazil, for example, are places where people who cannot be charged due to illness or mental disability are subjected to psychiatric treatment instead of punishment. This occurs in Psychiatric Custody and Treatment Hospitals (HCTPs) or Psychiatric Treatment Wards (ATPs) in prisons. These measures, which may include restriction of freedom, are accompanied by ECTPs, formerly called judicial asylums. Despite decades of existence, little is known about the population served in these places, including socio economic profile,

infractions committed, diagnoses and legal trajectories, which can keep people in precarious conditions and without access to adequate treatments. (Diniz, 2013).

We can also mention therapeutic communities that are managed by religious institutions, these are institutions that treat users with chemical dependency, and the therapeutic communities have the autonomy to define their recovery methods, based on a moral approach that associates chemical dependency with separation from God. Faith is considered the central element in this transformation process. However, mental health professionals criticize these practices, arguing that they do not follow the guidelines established by consolidated mental health policies. Despite this, there is a complementarity between scientific and religious treatments, as therapeutic communities are integrated into public care policies and being supervised by the Department of Health Surveillance, even if apparently contradictory. Health professionals, both provided by the State and volunteers, work in these communities without necessarily opposing the religious treatment model, which raises questions about the quality of care in public services (Ribeiro, 2015).

The lack of accessibility to quality mental health services is also a serious problem in the country, especially for vulnerable groups such as people with disabilities or those living on the streets. This contributes to the increase in suicide rates, which become even more worrying on commemorative dates, when loneliness and social pressure can intensify. Public authorities and civil society must mobilize to promote more inclusive and humane policies that guarantee respect for the dignity and rights of people in psychological distress. It is necessary to invest in suicide prevention strategies, expand access to effective treatments and dismantle institutional structures that perpetuate the marginalization and stigmatization of people with mental

illness. Mental health must be seen as a human rights and social justice issue, requiring a comprehensive and supportive approach to ensure the well-being and dignity of all citizens (Sampaio, Bispo Júnior, 2021).

According to research carried out in Brazil, it was observed that women are more likely to develop Generalized Anxiety Disorder (GAD) and depression compared to men. These disorders, although they can affect people of all age groups, are more common in young and middle-aged adults. Furthermore, individuals with low socioeconomic status are more likely to develop GAD and depression due to issues such as limited access to mental health services and unfavorable living conditions. The presence of a family genetic history of anxiety and depression disorders is also a significant risk factor for the development of these disorders. Additionally, the existence of other comorbidities or psychiatric disorders, such as panic disorder, social phobia, obsessive-compulsive disorder (OCD) and substance abuse, can increase the likelihood of a person developing GAD and depression. These common characteristics found in scientific studies highlight the complexity and diversity of factors that can influence the profile of people affected by these disorders in Brazil.

Recommendation

Brazil's diverse geographical regions exhibit significant disparities in social, economic, and demographic aspects, leading to pronounced regional differences in economic development and social inequality. These variations pose challenges for addressing mental health issues, which have become a growing concern in the country. With high rates of depression and anxiety, particularly in densely populated urban areas, Brazil faces the urgent need to improve access to mental health services and reduce stigma surrounding mental illness. Understanding the

distribution of mental illness across regions is crucial for developing effective policies and interventions to address this pressing public health issue and promote the well-being of all citizens, especially vulnerable populations. As mental disorders continue to rise and impact a significant portion of the population, prioritizing mental health services and support is essential for fostering a healthier and more equitable society in Brazil.

The complex landscape of mental health care in the country requires more than just access to services to ensure quality care for individuals with mental disorders. The study in São Paulo reveals a concerning gap in meeting basic quality standards and patient satisfaction, emphasizing the necessity for a patient-centered approach that provides evidence-based and Tailored treatments. The analysis by Pimentel et al. sheds light on intrinsic factors such as ethnicity, race, gender, education, labor, economic aspects, and violence that contribute to the increasing incidence of mental illnesses in the country. Regional disparities in demographics and social aspects underscore the importance of considering Brazil's diverse regions when addressing mental health issues and implementing policies to promote social inclusion and reduce inequalities. Efforts to improve the quality of mental health services, address systemic inequalities, and adopt a more inclusive and personalized approach to care are essential steps towards ensuring better mental health outcomes for all individuals in Brazil.

Brazil's mental health care system has undergone significant transformations over the past few decades, transitioning from a hospital-based model to a community-focused approach. The establishment of community mental health services, such as CAPS, has been a key component of this shift, aiming to provide more accessible and integrated care for

individuals with mental health disorders. The deinstitutionalization process in Brazil, marked by a reduction in psychiatric hospital beds and the development of residential services, reflects a commitment to human rights and improved quality of care. Despite these advancements, challenges remain, including variability in service availability and regulatory issues. Continued efforts to strengthen mental health policies, enhance service provision, and promote community-based care will be crucial in ensuring better mental health outcomes for all individuals in Brazil.

Health system is making strides towards providing comprehensive care for individuals with mental health issues, but challenges such as disparities in service distribution and the shortage of psychiatric beds persist. Efforts to improve access to mental health services and ensure quality care are ongoing. The implementation of community mental healthcare in Brazil is a dynamic process that requires adaptations based on diverse viewpoints and government directives. Addressing the lack of a comprehensive action plan, improving transparency, integrating services, and aligning research with policies are crucial for further progress. The adoption of innovative approaches like telepsychiatry, technology-based interventions, and alternative therapies demonstrates a commitment to enhancing mental health care in Brazil. Additionally, the use of medicinal plants and traditional medicine practices remains significant, especially in developing countries. The acceptance of telemedicine among physicians highlights its potential in healthcare delivery, emphasizing the need for regulatory agencies to adapt swiftly to technological advancements. Overall, the positive trends towards telemedicine adoption in Brazil can inform future health policies and contribute to improved healthcare practices.

In summary, the Brazilian mental health system has made progress in expanding its coverage and services, as evidenced by

the increasing number of CAPS units across the country. However, disparities in service provision and quality of care persist, with significant gaps in some regions and a lack of comprehensive data to assess the effectiveness of the system. The need for systematic evaluation, appropriate recommendations, and evidence-based practices is evident to strengthen the mental health system. Academic studies have highlighted both advancements, such as regionalization of services and decentralization of care, as well as shortcomings, including uneven distribution of services and lack of trained professionals in many areas. Moving forward, continued efforts are necessary to address these challenges and improve the availability, coverage, and quality of mental health services for all individuals.

Stigma surrounding mental health issues are crucial steps in addressing the challenges faced. The expansion and integration of community-based mental health services, along with strengthening primary care structures and increasing access to specialized professionals, are key strategies to improve this area. By addressing these gaps and working towards a more comprehensive and inclusive mental health system, Brazil can better meet the needs of its population and reduce the burden of mental illness in the country. Continued efforts to prioritize mental health, increase awareness, and enhance access to services are essential for creating a more effective and equitable mental health system in Brazil.

Brazil faces a high prevalence of mental health disorders due to several factors, including social stigma and limited investment in mental health research. The stigma surrounding mental health issues often prevents individuals from seeking help or discussing their problems openly. Additionally, there is a lack of awareness and information about mental health in the country,

despite having a relatively good public healthcare system. Furthermore, there is a lack of information about less prevalent mental health disorders in Brazil. This lack of knowledge and awareness contributes to the overall persistence of mental health issues in the country, underscoring the need for increased education, research, and resources dedicated to all aspects of mental health.

Questions

Treatment Innovation

1. What recent advancements have been made in Brazil regarding innovative treatments for mental health disorders?
2. How is Brazil incorporating technology, such as Artificial Intelligence (AI), into mental health treatment modalities?
3. Are there any notable examples of successful integration of AI in mental health care in Brazil?

Access and Distribution

4. What initiatives are in place to improve access to mental health services, particularly in rural or underserved areas of Brazil?
5. How is the distribution of mental health resources and professionals being addressed across different regions of Brazil?
6. Are there any challenges or disparities in access to mental health care that still need to be addressed in Brazil?

Government Policy and Regulation

7. What are the current government policies regarding mental health care in Brazil, and how have they evolved in recent years?
8. Are there any specific regulations or laws aimed at improving mental health services or protecting the rights of individuals with mental disorders in Brazil?

9. How does Brazil's approach to mental health policy compare to other countries, particularly in terms of government funding and support?

Prevention and Early Intervention

10. What preventative measures or early intervention programs are being implemented in Brazil to address mental health issues before they escalate?
11. Are there any community-based initiatives or grassroots organizations working to raise awareness about mental health and reduce stigma in Brazil?
12. Are there any community-based initiatives or grassroots organizations working to raise awareness about mental health and reduce stigma in Brazil?

Integrating of Traditional and Western Approaches

13. How is Brazil integrating traditional healing practices with Western approaches to mental health care?
14. What are the challenges and opportunities associated with integrating traditional and Western approaches to mental health care in Brazil?
15. Are there any collaborative efforts between traditional healers and mental health professionals to provide holistic care to individuals with mental health disorders in Brazil?

Answers

Treatment Innovation

(1, 2, 3) Brazil has seen significant advancements in mental health treatment, particularly in the use of telemedicine and digital mental health platforms. Several startups and organizations have developed AI-powered tools for mental health assessment, therapy, and monitoring. For example, platforms like Vittude and Zenklub offer online therapy sessions

with licensed professionals, utilizing AI algorithms to match users with suitable therapists based on their needs and preferences.

Access and Distribution

(4, 5, 6) Efforts to improve access to mental health services in Brazil include the expansion of telemedicine initiatives, mobile mental health clinics, and community outreach programs. The Brazilian government has implemented the "*Programa Nacional de Apoio à Atenção da Saúde da Pessoa com Deficiência*" (PNAISH), which aims to enhance mental health care access for individuals with disabilities, including mental disorders, by providing specialized services and support networks.

Government Policy and Regulation

(7, 8, 9) Brazil has made strides in mental health policy with the enactment of the "*Lei da Reforma Psiquiátrica*" (*Psychiatric Reform Law*) in 2001, which promotes community-based care and human rights for individuals with mental disorders. The Brazilian Unified Health System (SUS) provides free mental health services to all citizens, although challenges remain in terms of funding and resource allocation. Recent government initiatives focus on expanding primary care mental health services and integrating mental health into general healthcare settings.

Prevention and Early Intervention

(10, 11, 12) Brazil has implemented various prevention and early intervention programs aimed at addressing mental health issues at the community level. For example, the "*Programa Saúde na Escola*" (Health in Schools Program) provides mental health education and support services to students, while workplace mental health initiatives promote employee well-being through

stress management workshops and counseling services. Additionally, community-based organizations like the "*Movimento Pró-Criança*" offer psychosocial support to at-risk children and families.

Integration of Traditional and Western Approaches

(13, 14, 15) Brazil embraces a holistic approach to mental health care that incorporates both traditional healing practices and Western therapeutic modalities. Indigenous and Afro-Brazilian healing traditions, such as *Umbanda* and *Candomblé*, are recognized as valuable components of Brazil's cultural heritage and are often integrated into mental health interventions. Collaborative efforts between traditional healers and mental health professionals aim to respect cultural diversity and provide culturally sensitive care to individuals with mental health disorders. However, challenges related to stigma and discrimination persistence, highlighting the need for ongoing education and advocacy efforts.

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3 The Russian Federation

Rofika Dewi Maulina

Russia stands as the world's largest country, spanning an expansive 17,075,400 square kilometers across two continents: Northern Asia and 40 percent of Europe. Renowned for its vast and varied landscapes, cultures, and peoples, Russia encompasses bustling urban centers like Moscow and St. Petersburg, alongside remote expanses in Siberia and the Far East. With a population exceeding 148 million, Russia boasts a multi-ethnic and multicultural society, with Russians, Tatars, Ukrainians, and numerous other ethnic groups calling it home.

Throughout its history, Russia has navigated the legacies of tsarist rule, the Soviet era, and the transition to a democratic state. A pivotal player in global events, from the Russian Revolution to World War II and the Cold War, Russia now operates under a semi-presidential republic, with the President as head of state and the Prime Minister as head of government. It is a democratic federal state with 24 republics, 9 territories, 48 regions, 2 federal cities, an autonomous region, and 4 autonomous areas. As a major global economic force, Russia boasts abundant natural resources, including oil, natural gas, and minerals, making it a leading exporter of energy products. Yet, economic challenges such as income inequality and reliance on commodity exports persist. Each region of Russia plays a vital role in its economic landscape. The Western regions, anchored by Moscow and St. Petersburg, serve as the political, economic, and cultural heartland. The Ural Mountains region contributes to heavy industry, while Siberia and the Russian Far East are crucial for energy, forestry, and mining. Siberia serves as a vital transit

route and resource hub, connecting Russia to neighboring countries like China and Mongolia. The Russian Far East, bordering the Pacific Ocean, holds strategic importance and is a focal point for trade and cooperation in the Asia-Pacific region. The Volga region and the North Caucasus are centers of agriculture and industry, with the latter boasting cultural diversity and the largest Muslim population in Russia.

Russia's foreign policy shapes global affairs, building on its interactions with neighboring states and global powers throughout history. Following the dissolution of the Soviet Union in 1991, Russia redefined its international role, forging strategic partnerships while asserting influence in organizations like the United Nations and BRICS. However, tensions and diplomatic challenges persist, notably with the annexation of Crimea and involvement in the Ukraine conflict straining relations with Western powers. Beyond its immediate vicinity, Russia's involvement in conflicts, such as in Syria, underscores its global security role. Russia's legacy, economic might, and cultural contributions continue to shape global dynamics, emphasizing the importance of understanding its complexities for comprehending contemporary geopolitics and its global impact.

The Evolving Landscape of Mental Health Care in Russia

Mental health has been a longstanding and intricate concern in Russia, shaping the understanding and treatment of mental disorders throughout its history. The evolution of mental health services and the perception of mental illness in Russia have been influenced by a multitude of social, political, and cultural factors. Historically, mental disorders were often stigmatized and misunderstood in Russia. In earlier centuries, mental illness was frequently interpreted through a religious or spiritual lens, with individuals believed to be possessed by evil spirits or cursed. Treatment methods included exorcisms,

prayers, and other rituals aimed at expelling the perceived demons causing the mental disturbance.

The 18th and 19th centuries represented a significant period of development and transformation in the comprehension and management of mental disorders in Russia. During this time, there was a shift from traditional beliefs and superstitions about mental illness towards a more scientific and medical approach to mental health. Prior to the 18th century, mental disorders in Russia were often viewed through a religious or spiritual lens, with individuals believed to be possessed by evil spirits or cursed. Treatment methods included exorcisms, prayers, and other rituals aimed at driving out the perceived demons causing the mental disturbance. Mental illness was frequently stigmatized, and individuals suffering from such conditions were marginalized and ostracized from society ^[1].

The establishment of psychiatric hospitals and the contributions of pioneering Russian psychiatrists such as Ivan Pavlov and Vladimir Bekhterev played a crucial role in promoting a more scientific approach to mental disorders. Ivan Pavlov, renowned for his research on conditioned reflexes, made significant contributions to the field of psychology and laid the foundation for modern psychiatric practice. His work helped shift the focus from supernatural explanations of mental illness to more scientific and physiological explanations. Vladimir Bekhterev, another prominent figure in Russian psychiatry, made important advancements in the study of neurology and psychology. His research on reflexes and brain function furthered the understanding of mental disorders and paved the way for new treatment approaches ^[2]. The Soviet era brought significant changes to mental health care in Russia. The government implemented policies to address mental health issues as part of broader public health initiatives. The development of

community-based mental health services, psychiatric hospitals, and research institutions aimed to provide care for individuals with mental disorders and advance scientific knowledge in the field. However, the Soviet period also saw challenges in the treatment of mental illness, including the use of coercive methods such as forced hospitalization and treatments like electroconvulsive therapy ^[3]. In the early years of the Soviet Union, mental health care was heavily influenced by ideological factors, with the government promoting a materialistic view of mental illness and emphasizing the role of social and environmental factors in shaping individual behavior. Psychiatry was used as a tool to control dissident voices and suppress political opposition, leading to the labeling of dissenters as mentally ill and their confinement in psychiatric hospitals.

One of the most infamous episodes in Soviet psychiatric history is the use of punitive psychiatry, where individuals who expressed dissenting views or criticized the government were diagnosed with "sluggish schizophrenia" and forcibly hospitalized in psychiatric institutions. This practice, known as "psychiatric abuse," was a means of silencing political dissidents and suppressing freedom of speech. Despite these dark chapters, the Soviet Union also saw advancements in the field of mental health care during this period. The government established a network of psychiatric hospitals and clinics across the country, providing access to treatment for individuals with mental disorders. Research in psychiatry and neurology flourished, leading to new insights into the causes and treatment of mental illness ^[4].

Prominent Soviet psychiatrists such as Andrei Snezhnevsky made significant contributions to the field, developing new diagnostic criteria and treatment approaches for various mental disorders. Snezhnevsky's concept of "sluggish schizophrenia" may have been misused for political purposes,

but his work also contributed to a better understanding of schizophrenia and other psychotic disorders ^[5]. The Soviet Union era also saw the development of community-based mental health services, aimed at providing support and treatment for individuals with mental disorders in their local communities. This approach emphasized the importance of social integration and rehabilitation for people with mental illness, moving away from the traditional model of institutionalization. In the post-Soviet era, economic instability, social upheaval, and changes in the healthcare system have impacted the provision of mental health services in the country as well as the high prevalence of mental health disorders, including depression, anxiety, substance abuse, and post-traumatic stress disorder (PTSD). Lack of resources, trained professionals, and infrastructure further exacerbates the burden of mental illness on individuals and society. During this period, there was growing awareness of the need to reform mental health services and address the legacy of psychiatric abuse that occurred during the Soviet era resulting in increased stigma in society and international objection to the political abuse of psychiatry in the Soviet Union. The dismantling of the Soviet-era psychiatric institutions and the shift towards market-driven healthcare systems led to disruptions in mental health services, including shortages of medications, lack of funding for mental health programs, and a decrease in the availability of psychiatric facilities ^[6]. Until the 2000s, the mental health care system in Russia had not undergone major changes since the breakup of the Soviet Union, hampered by outdated standards of medical care and management and inadequate funding. The reorganization of mental health services began with national and international health service projects and the development of national mental health policies in the 2000s. In 2005, the Russian Minister of Health took part in the WHO

European Ministerial Conference on Mental Health in Helsinki, Finland, resulting in the Mental Health Declaration for Europe and the Mental Health Action Plan for Europe being accepted by Russia ^[7].

Thereafter, Russia began implementing reforms aimed at modernizing mental health services, increasing access to care, and promoting community-based approaches to treatment. Various efforts have also been made, such as integrating mental health into primary health services, developing evidence-based treatment guidelines, and establishing mental health promotion programs so that awareness of mental health can increase and public stigma towards mental illness is reduced. In addition, Russia also collaborates with international partners and applies best practices from other countries as well as conducting a lot of psychiatric research and clinical practice regarding mental health that can help improve diagnostic accuracy, treatment efficacy and patient outcomes.

Understanding the Distribution of Mental Disorders in the Russian Federation: A National and Regional Analysis

The distribution of mental disorders in the Russian Federation, both nationally and regionally, is a multifaceted issue influenced by various factors such as social, economic, and cultural conditions. Mental illness is a significant public health concern in Russia, with an increasing number of neurotic diseases linked to alcoholism, stress, and financial constraints. Nationally, mental disorders affect a considerable portion of the Russian population. According to the Russian Ministry of Health's data from 2022, 8.5 million Russian citizens were registered with mental disorders ^[8].

In 2019, the Chukotka region had the highest prevalence of psychiatric diseases, with 9.9 thousand cases of schizophrenia, mental retardation, and dementia per 100 thousand populations

[9]. In Chukotka, high rates of poverty and unemployment among indigenous communities as well as underdeveloped public health services and public infrastructure in indigenous villages lead to poor health and social conditions [10]. Furthermore, according to Alexander Fedorovich, a psychotherapist in Russia, Chukotka also has a difficult climate, there is not enough sunlight, and the air temperature is low where the days are short and the nights are long, so most cases of mental disorders are recorded there. In addition, the level of urbanization is very low, and residents have few opportunities for entertainment. Then, people also have a monotonous diet which mostly only eats fish or frozen meat, they also lack vegetables and fruit, which causes many vitamins to be lost [11]. The combination of these factors is the cause of the high number of people suffering from mental illness in Chukotka because environmental and socio-economic conditions have a significant relationship to the mental health of the population [12].

The second position was taken by the Altai Territory, with 6.6 thousand cases of mental illness per 100 thousand populations [9]. Research conducted on 996 residents in the Altai Republic revealed that the most common mental disorders, particularly among hospital patients, include schizophrenia, organic brain disease, epilepsy, mental retardation, old age psychosis, and personality disorders. The male population in the Altai Republic has a significantly higher proportion of organic brain diseases, personality disorders, and addictive diseases compared to women [13]. Another study on the mental health of residents in Barnaul, a city in Altai Krai, found that more than 50 percent of respondents experienced anxiety disorders, depression, mood disorders, and sleep disorders. These issues were primarily caused by stress, overthinking, and uncertainty about their future [14]. According to Vladimir Fainzilberg, associate professor of psychotherapy and psychological

counseling at the Moscow Institute of Psychoanalysis, one reason for the high prevalence of mental illness in the Altai Territory is its rich and beautiful nature, which attracts many Russians with mental illnesses seeking treatment and relaxation. Additionally, natives of the Altai region lack the enzyme alcohol dehydrogenase, which is responsible for breaking down alcohol in the body, yet they consume a lot of alcohol. Consequently, many mental disorders in the Altai Territory are due to children being born with pathological and congenital disorders. Alexander Nemtsov, head of the department of information and analysis of psychiatric systems in Moscow, noted the significant contribution of alcohol to the development of mental disorders, stating that in Russia, alcoholism is considered a mental disorder ^[11]. The third position is held by the Jewish Autonomous Region, with 6.2 thousand cases of mental illness per 100 thousand populations ^[9].

The Kurgan and Sakhalin regions ranked fourth and fifth, respectively, with mental illness rates of 5.9 thousand and 5.7 thousand cases per 100 thousand populations ^[9]. In the Kurgan region, the high prevalence of mental illness is partly due to psychological issues among young people, which also contribute to an increase in suicide cases in this demographic. A survey revealed that over half of the young people in the Kurgan region are concerned about their financial situation and income levels, while a third are dissatisfied with the quality of government support ^[15].

Experts argue that alcoholism is considered a mental disorder. In 2020, according to the Ministry of Health, nearly 1.2 million mental disorders in Russia were related to alcohol consumption and alcohol dependence syndrome ^[16]. A survey found that 27.8 percent of Russians drink alcohol to experience pleasure and 25.3 percent to feel calm ^[17]. In the Far East of Russia, there is a strong tradition of partying, leading to more

frequent alcohol consumption. This contributes to the high incidence of mental illness detected annually in the Altai Territory, Chukotka, the Nenets Autonomous Okrug, and the Sakhalin region, all located in the Far East of Russia. In contrast, mental disorders in Russia are most rarely detected in Ingushetia, with an incidence of only 102 cases per 100 thousand populations. Similarly, low indicators are found in the Chechen Republic, with 127.2 cases per 100 thousand populations, and in North Ossetia-Alania, with 194 cases. In the Caucasus, people drink less alcohol, lead healthier lifestyles, and therefore experience fewer mental health issues related to high alcohol consumption compared to other regions ^[11].

In 2022, the statistics on mental illness rates in Russia increased by almost 3 million compared to 2021, which had around 5.6 million cases. One significant factor contributing to this rise is the Russian-Ukrainian War, which began in early 2022. Although there is no official data on depression rates, a survey conducted by Sechenov University in Moscow in 2022 showed that one in three Russians felt depressed or anxious. This level of depression is comparable to that during the peak of the pandemic in 2020. According to Galina Laysevna, a clinical psychologist, the mobilization came as a shock to many Russians, significantly altering their mindset. Many experience strong feelings of fear and confusion, leading to high levels of anxiety, bad moods, sleep disturbances, apathy, difficulty concentrating, and decreased physical and social activity. In the long term, these symptoms can develop into chronic anxiety and depression.

Additionally, the demand for psychological support services surged following the announcement of "partial" mobilization. Prior to the war, many Russians, especially those outside Moscow and St. Petersburg, did not seek help for mental

health issues such as depression and anxiety due to a lack of public funding for mental health services and widespread stigma around mental illness. Furthermore, according to data from the digital labeling agency, Russians purchased 50 percent more antidepressants in the first nine months of 2022 compared to the same period in 2021. However, at a time when depression rates are rising, many Russians are finding it increasingly difficult to obtain the medications they need. The shortage is due to disrupted wartime supply chains, logistics problems resulting from international sanctions, and the exit of major Western pharmaceutical companies from the Russian market ^[18].

Several studies have indicated significant discrepancies in the number of people suffering from mental illness in Russia as reported by official Russian organizations and international organizations. Statistics from the Institute of Health Metrics and Evaluation, which examined not only medical records but also conducted its own social surveys and calculations, state that in 2021, approximately 16 million people in Russia suffered from mental disorders. In contrast, data from the Russian Ministry of Health reported that 5.6 million Russian citizens were registered with mental disorders in 2021 ^[19].

Analysis of national statistics shows that domestic clinicians in Russia diagnose some mental disorders significantly less frequently than might be expected. According to international epidemiological studies, the statistical reports reviewed include data only from state health institutions. Most psychiatrists in Russia work within institutions of the Russian Ministry of Health, whereas psychiatric care is also provided in some departmental institutions not subordinate to the Ministry of Health, such as military hospitals, private clinics, and by independent psychiatrists, whose numbers have increased in recent years. Therefore, data from these other institutions are not included in national statistics. Additionally, some anxiety and

mood disorders can be treated by other medical specialists, which suggest that many individuals with depression, anxiety disorders, and dementia might have received treatment from doctors in other specialties rather than seeking help from the state psychiatric service during the study period. Furthermore, the treatment of mental illnesses is not typically included in primary health care in Russia. Special mental health treatment, such as psychiatry, is usually sought by individuals who can afford private treatment or those with severe mental disorders. Anxiolytic drugs, commonly used to prevent or treat anxiety symptoms or disorders, are available without a prescription in Russia, allowing individuals to manage their mental illnesses without specialist treatment. These factors contribute to missed opportunities for diagnosing and providing appropriate treatment for those with common mental health disorders, such as depression and anxiety, in Russia. Consequently, the exact number of people suffering from mental disorders in Russia cannot be known precisely ^[20, 21].

In 2017, research was conducted to study the practical experience of diagnosing and treating anxiety disorders by Russian psychiatrists, as well as to assess the relative frequency of diagnoses for this group of disorders. An online survey was conducted on the website of the Russian Society of Psychiatrists (RSP), with 1,015 psychiatrists from 75 regions of Russia participating. The results showed that only 11.9 percent of RSP survey respondents, compared to 33.6 percent of WPA-WHO (World Psychiatric Association) survey participants, frequently use anxiety disorder diagnoses in daily practice (at least once a week). The diagnosis of this group of disorders is most often used by psychotherapists and respondents working in somatic networks and private practice. Additionally, Russian psychiatrists most often use the diagnosis of mixed anxiety and

depressive disorders and adaptation disorders to diagnose conditions related to anxiety and stress. These are essentially preliminary diagnoses and do not always lead to the prescription of therapy appropriate to the patient's condition ^[22]. Moreover, the analysis of national statistics showed that at least some diagnostic categories used by Russian psychiatrists do not correspond to ICD-10 guidelines. Despite potential distortions associated with the collection of statistical data, the number of patients seeking medical care, and the actual difference in incidence rates, it can be argued that bipolar affective disorder, depression, anxiety disorders, autism, and dementia in Alzheimer's disease are diagnosed much less frequently by psychiatrists in Russia than they should be ^[23].

Cultural Perceptions and the Stigmatization of Mental Illness

Mental health stigma remains a significant barrier to care and support for individuals with mental disorders in Russia. One of the primary reasons behind the stigmatization of mental disorders in Russian society is a lack of understanding and education about mental health. Research indicates that young Russians believe the level of education regarding mental health in Russia is still low. The quality of medical care and the level of support for people with mental illnesses, as well as measures aimed at integrating them into society, are also inadequate ^[24]. Misconceptions about mental illnesses often lead to fear, prejudice, and the labeling of individuals with mental health conditions. Russian psychiatrist Divisenko stated that during the Soviet Union, penal psychiatry was practiced for more than thirty years. This led society to view psychiatry as a punitive rather than a therapeutic institution, equating psychiatric treatment with criminal prosecution ^[19]. These historical factors may have fostered a distrust of authority figures, which could extend to the

client-therapist relationship. As a result of the misuse of psychiatry as a tool of political oppression during the Soviet era, Russians are more likely to confide in close friends and loved ones rather than mental health professionals ^[25].

In Russian society, being registered or living in a mental hospital is considered shameful and frightening ^[19]. Russians also tend to view individuals experiencing depression as lacking 'willpower' or leading an 'immoral lifestyle' ^[26]. More than a third of people suffering from psychotic mental disorders experience social stigmatization and unfair treatment. They feel alienated, avoid closeness with others for fear of rejection, and try not to embarrass loved ones. They even experience stigmatization within their families, facing negative comments, hostility, and the risk of broken relationships. This causes many individuals with mental illness to hide their condition out of fear of being shunned by those around them ^[27]. However, research on the younger generation in Russia regarding the stigmatization of people with mental disorders reveals a more positive outlook. Generally, they do not hold negative stigmas towards people with mental illnesses. Instead, they exhibit a high level of interest in mental health topics and have relatively open attitudes towards individuals with mental illness. Nevertheless, some young people still harbor negative stigmas, viewing individuals with mental illness as having unpredictable behavior and thus feeling apprehensive about being open towards them ^[24].

Another reason for stigmatization in Russia is the imperfection of legislation. In the current legislation of the Russian Federation, more than 65 federal laws establish restrictions on the rights of applicants or employees to engage in certain types of activities if a citizen has mental disorders and behavioral disorders associated with the use of psychoactive substances. If such a disorder is detected, the citizen cannot be

admitted to a source of increased danger, hired to work (service), and the employee is subject to dismissal ^[28]. Moreover, if a person with a neurotic disorder goes to a psycho-neurological clinic and they register there, they will have difficulties obtaining a driver's license or when applying for a government service ^[19].

The media also plays a significant role in perpetuating stigmatization of mental disorders in Russia. According to Yastrebov who analyzed 198 articles published in various Russian newspapers for the period 1995-2000 that touched on various psychiatric issues revealed that a number of publications Newspapers allegedly expressed a desire to increase segregation and rejection of people with mental disorders in society. More than half of newspaper publications focus readers' attention on the social danger of mentally ill people who commit murder, violence and other criminal acts. Such publications undoubtedly contribute to maintaining society's negative and biased attitudes towards people with mental disorders and strengthen the process of stigmatization and discrimination against people with mental disorders. Apart from that, newspapers still write phrases such as "psychiatric hospital", "mental hospital", "schiza", "crazy" and the like regarding mental health problems ^[29]. In addition, it was found that Russian journalists were less likely to identify dementia as a mental disorder. Journalists and even Russian mental health professionals do not seem to perceive stigma to be a problem as well ^[30]. Whereas stigma results in increased feelings of loneliness and social isolation and reduces the quality and quantity of relationship formation, social ties and interactions among people with mental illness. Stigma also reduces their self-esteem and self-confidence, which in turn fosters secrecy and reluctance to disclose their illness, and also result in suicidal ideation ^[31, 32].

In Russia, sociocultural aspects play a crucial role in the stigmatization of mental illness. There has been a shift in

thinking patterns and viewpoints regarding mental health in Russian society. The reform of the Soviet Union's social system ("Perestroika") led to changes in attitudes, prejudices, and values, resulting in differences in views on certain phenomena, such as mental illness, across generations. A survey conducted on the older generation (over 30 years) and the younger generation (30 years and under) in Russia found that the older generation, influenced by the Soviet Union's emphasis on teamwork and societal welfare, did not typically include people with mental disorders in their social circles. They believed that individuals with mental disorders should not have children, as there was a risk that their offspring could also develop mental illnesses. In contrast, the younger generation's view of mental illness is more tolerant and relaxed. While they acknowledge that the behavior of individuals with mental disorders can be unpredictable, they attribute such actions to the illness rather than the individual. Furthermore, the Russian generations are more accepting of having friends who suffer from mental illness ^[33].

Mental Disorder in Russia

Depression is one of the most common mental illnesses. A long-term study involving almost 40 thousand people conducted by the Agency for Strategic Initiatives (ASI) showed that about 10 percent of Russian citizens (15 million people) are in a state of deep depression but the mechanisms and services for screening depression varies un-proportionally from oblast to oblast, and such services have not been reported to be used for diagnostic purposes ^[34]. Results from another study, conducted on 1800 Russians aged 18 – 90 years found that 34.4 percent of respondents had high levels of depression and from 22.1 percent (for reports of thoughts of death or hurting oneself) to 81.7 percent of respondents (for reports about feeling tired or lacking

energy)^[35]. Then research conducted among adults aged 65 years and over was found that 25.9 percent of the younger group (65-74 years) and 42.5 percent of the older group (75 years and over) were at risk of experiencing depression^[36]. Other researchers have shown all causes of death from cardiovascular disease are related to depression even though the prevalence of cardiovascular disease nationally is exceptionally high^[37,38]. The risk factors for depression in Russia are multifaceted and can be influenced by socio-demographic, socio-economic, behavior factors, psycho-social, and work factors. Socio-demographic risk factors are sex, financial constraints and living environment. Socio-economic factors are large effect size and dose-response for financial constraints. Behavior factors associated are being a non-drinker, problem drinking and smoking. Psycho-social factors are not having enough people to confide in and life events. Work-labor factors are like employment status and work-related stress^[39].

Regarding socio-demographic factors, higher rates of depression in women are found almost universally in Russia. In Moscow, more women (48 percent) than men (36 percent) reported that they had felt depressed^[40]. Based on research conducted in Arkhangelsk, it was found that women were more likely to suffer from anxiety, depression and/or sleep disorders (68.7 percent) than men (32.3 percent)^[41]. Research conducted in Arkhangelsk and Novosibirsk with participants aged 35 to 69 years also found that women experience depression and more than men. Furthermore, women who live alone, have lower education, have greater financial constraints, and do not have a permanent job also have a higher likelihood of experiencing depression^[39]. In addition, climatic and geographic factors can have aggrieving effects on human health within these colder regions of Russia, causing young people to form psycho-emotional stress due to higher secretion of the hormone cortisol

into the blood ^[42]. From research conducted on 422 people in the Siberian federal district (one of the coldest regions in Russia) it was found that 28.8 percent of research participants experienced depression ^[43]. Socio-economic factors such as financial constraints are also a scourge for Russians, resulting in depression ^[21]. One study in Russia suggested that there was a significant increase in the incidence of increased risk of anxiety and especially depressive disorders as poverty levels increased. The very poor group has a higher prevalence of increased anxiety/depression scores than the rich group ^[44].

Then there are behavioral factors related to problems with drinking and smoking. In Russia correlation between alcohol consumption and smoking and a higher prevalence of depression had been found. According to the Alcohol Use Disorders Identification Test (AUDIT), the risks of depression were 80 percent higher in alcohol-dependent individuals and 40 percent higher in risky drinkers ^[41]. Russian smokers, both ex-smokers and current smokers, are about 40 percent more likely to experience moderate depression than those who have never smoked. Alcohol drinkers also have a high chance of experiencing depression ^[39]. In a study that used the Center for Epidemiological Studies Depression Scale to measure depression, it was found that depression was 55 percent higher in people who did not drink alcohol and 66 percent higher in people who liked to drink alcohol ^[45].

Then the next factor is psychosocial factors. The amount of life events in the preceding six months and the lack of adequate persons to confide in were both significant independent risk factors for depression ^[39]. Social support and resilience were significantly positively correlated with each other, and both were significantly negatively correlated with symptoms of depression, anxiety, and stress in Russians, Germans, and Chinese ^[46].

Research conducted on Russians found that frequent daily interactions with other people at least more than 3 times a day, can significantly reduce the likelihood of depression whereas social isolation and retirement are all social causes for depression. Moreover, the existence of a partner or kids is truly positively associated with the prevalence of depression ^[43]. Last factor is work-labor factors. A Russia longitudinal study conducted from 2011–2017 by the Higher school of economics found that unemployment and labor market inactivity are strong predictors of the likelihood of reporting depression and serious nervous breakdown ^[47]. In Russian men employment status has a significant relationship to depression. Russian men who don't have a steady job are about twice as likely to be depressed as those who have a steady job ^[39]. The gendered structure of Russian society, which strongly favors the idea that males should provide the majority of a household's financial support, could be the cause of this ^[48]. This even happens to elderly Russians. According to one representative from the Russian Ministry of Health in 2018, unemployed elderly Russians had a 4.6 times higher risk of depression ^[49].

Another common mental health disorders in Russia are anxiety disorders, which include conditions such as generalized anxiety disorder, panic disorder, and social anxiety disorder. In October 2022, a survey study involving 1,300 people aged 16–25 years found that 25.5 percent of young adults and teenagers who took part in this study had a high risk of developing generalized anxiety disorder [50]. Earlier in March, research conducted by the NAFI Analytical Center on 1,600 people 18 years of age and older in 53 regions of Russia found that only 30 percent of Russians manage to maintain emotional balance and control the level of anxiety in the current socio-economic situation ^[51].

Depression and anxiety in Russia have been common not only in recent years but also from the past 2 decades. Based on research in 1999–2000 conducted on 3707 people aged 18–90 years in Arkhangelsk, Russia, it was found that 49.3 percent of respondents had a prevalence of depression, anxiety and/or sleep disorders [41]. According to an epidemiological study conducted in 2014 on 16,877 people aged 25–64 years from 10 regions of Russia, the average prevalence of anxiety and depression in Russia was 46.3 percent and 25.6 percent [44]. Then, based on data from the Institute of Psychology of the Russian Academy of Sciences in 2022, there was an increase in symptoms of anxiety and depression, exceeding the indicators for the 2020–2021 pandemic period, the proportion of respondents (among young people aged 18–24 years) who recorded symptoms of clinical anxiety increased from 18 percent in January to 28 percent in early March, and symptoms of clinical depression from 27 percent to 42 percent. This happened because at the same time, there were two spikes in Russian society's "economic" fears related to expectations of rising prices and the economic crisis resulting from the war with Ukraine ^[52]. Furthermore, according to a study, high rates of depression, anxiety and sleep disorders in Russia can be caused by nutritional variables as well like dissatisfaction with one's own nutrition and low consumption of fruit, vegetables, fish, and meat. This may mean that some types of food are not available to the public according to their wishes. For example, in the city of Arkhangelsk, although fresh fruit, vegetables, fish and meat are easy to obtain, they are expensive, at least for those with low salaries and pension funds ^[41].

Government Initiatives and Policies

The Russian government has taken significant steps to address mental illness in the country through various policies and

initiatives. Mental health has long been a neglected area in Russia, with stigma and lack of resources contributing to high prevalence of mental health disorders. Recognizing the importance of mental health in overall well-being, the government has implemented specific laws and policies aimed at reducing and overcoming mental disorders. The main legislation concerning mental health in Russia is the Mental Health Law of 1992. This law established the legal framework for the provision of mental health services, protection of the rights of individuals with mental disorders, and regulation of psychiatric facilities. It emphasizes principles of human rights, dignity, and non-discrimination in the treatment of persons with mental illness, laying the groundwork for quality care and support.

The Russian government has taken significant steps to address mental illness in the country through various policies and initiatives. Historically, mental health has been a neglected area in Russia, with stigma and a lack of resources contributing to the high prevalence of mental health disorders. Recognizing the importance of mental health to overall well-being, the government has implemented specific laws and policies aimed at reducing and overcoming these issues. The main legislation concerning mental health in Russia is the Mental Health Law of 1992. This law established the legal framework for the provision of mental health services, protection of the rights of individuals with mental disorders, and regulation of psychiatric facilities. It emphasizes principles of human rights, dignity, and non-discrimination in the treatment of persons with mental illness, laying the groundwork for quality care and support. According to Gurovich & Neufeld (2007), the introduction of new professionals, such as social workers, psychologists, and psychotherapists, into the psychiatric treatment process in 1993 was one of the legislation's major results. This led to the development of a multi-professional team approach, which

Russian psychiatrists saw as a shift from "bio psychiatry" to a "social" model of psychiatric treatment. Subsequently, private treatment for mental illnesses became available, and non-governmental organizations gained acceptance in the mental health care industry ^[53].

In 1995, the Russian government created the first government program on mental health, the "Federal Program Urgent Means for Improving Mental Health Services (1995–1997)." This program was based on the law of 1992 and was created due to the need to take emergency measures to guarantee the rights of people suffering from mental disorders and to reduce the negative impact of mental illness on the state and society, such as disability and inability to work, crime among people with mental disorders, unsuitability for military service, and others ^[54].

In 2002, the second program, "Reorganization of Psychiatric Care Networks for 2003–2008," was created. This program was also based on the law of 1992 and referred to the "European Convention for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment" (1993). The program aims to enhance patient access to mental health hospital services and conditions; extend outpatient treatments, childcare facilities, and sheltered workshops; and bring psychiatric dispensaries closer to patient residences ^[55]. Following that in 2019, Russia launched a National Mental Health Strategy aimed at promoting mental health, preventing mental disorders, and improving mental health services across the country until 2025. This strategy outlines plans to improve the quality of mental health services; develop a system for the prevention and early detection of mental illness; integrate mental health services into the general health services to provide an integrated approach to public health; and reduce stigma and discrimination against

people with mental disorders through information campaigns and educational activities in the community. To realize this strategy, the Russian government is modernizing and expanding psychiatric clinics, hospitals, and mental health centers; providing advanced training for medical personnel, including psychiatrists, psychologists, and social workers, to ensure a high level of professionalism in serving patients with mental problems; introducing and developing telemedicine, digital platforms, and online consultations to increase access to mental health services, especially in remote and sparsely populated areas; and finally, introducing a system to monitor results and evaluate the effectiveness of actions taken within the framework of the strategy to improve the mental health service system ^[56].

In 2012 the Russian government for the first time issued regulations on psychological assistance. This is stated in Order of the Ministry of Health and Social Development of the Russian Federation “On approval of the Procedure for providing medical care for mental disorders and behavioral disorders” which was then updated in 2022 in Order of the Ministry of Health of the Russian Federation “On approval of the Procedure for providing medical care for mental disorders and behavioral disorders” that come into force on 1 July 2023 ^[57]. By embedding mental health screening, assessment, and treatment within primary care facilities, individuals have greater access to mental health support at the community level. This integration strategy aims to facilitate early detection, intervention, and ongoing management of mental health issues, reducing the burden on specialized mental health services. The Russian government has also implemented programs to support vulnerable populations, such as children and adolescents, who are at higher risk of developing mental health disorders. Afterwards, in 2014, Union for Mental Health, a public organization aimed at maintaining the mental health of Russians and improving the health and quality of life of

people with mental disabilities was formed. The area of activity of this organization is the creation of a platform for joint innovation activities between representatives of different disciplines and industries in solving a set of problems in protecting the mental health of the population of the Russian Federation; creating conditions for the professional development of members of the Union for Mental Health; and promotion of Russian and foreign achievements in the field of human mental health. This organization has three programs namely prevention of mental disorders; improving the health and quality of life of people with mental disabilities; and development of science in the field of mental health. In December 2020, Union for Mental Health launched the All-Russian Mental Health Awareness Program for Students in the University that aimed at raising awareness on mental health among medical and non-medical students of the Russian universities via presentation of modern approaches to prevention, diagnosis, treatment, and rehabilitation of mental and behavioral disorders. It serves also for developing networks and cooperation in the mental health field between universities and improving attitudes to mental health ^[58]. The Russian government has also been using social media in recent years to help dispel the stigma associated with mental diseases and to increase public awareness of the value of mental health. Regarding mental health, social media has also gradually contributed to a shift in the views of Russia's younger generations ^[59].

In conclusion, The Russian government has made substantial progress in addressing mental illness through a variety of policies and initiatives. By implementing comprehensive strategies, expanding community-based services, supporting vulnerable populations, and enhancing the quality of mental health services, the government is striving to improve the

overall mental health of the population and mitigate the societal impact of mental illness. However, continued efforts and substantial investments are imperative to further strengthen mental health services in Russia and ensure that all individuals have access to exceptional care and support.

Popular Therapies and Treatments

Russia has a long history of dealing with mental disorders, and the treatment and therapy options have evolved over time. In the past, mental disorders were often stigmatized, and individuals with such conditions were marginalized. However, in recent years, there has been an increasing focus on understanding mental health, and there has been a growing emphasis on providing effective treatment and therapy for those with mental disorders. Mental health is a crucial aspect of overall well-being, and in recent years, there has been a growing awareness and understanding of mental health issues in Russia. As a result, various treatment and therapy options have become available to them in need. One of the most widely used treatments for mental disorders in Russia is psychotherapy. Psychotherapy involves the use of various psychological techniques to help individuals overcome their mental health challenges. Different approaches to psychotherapy are practiced in Russia, including cognitive-behavioral therapy, psychodynamic therapy, and humanistic therapy and many more. Currently 47 psychotherapy modalities and methods are recognized and there are approximately 45,000 professionals involved in the practice of psychotherapy in Russia [60].

According to a study conducted by the psychotherapist selection service Altar and the online school of psychological professions “Psychedemia” that used data about 6 thousand specialists who have applied for registration on the Altar platform since 2017 showed that 95 percent of Russian

psychologists combine several methods of psychotherapy when working with clients, shows. The most popular are psychodynamic approaches - directions based on the theory of psychoanalysis: they are chosen by 43 percent of psychologists. Second place is shared by cognitive behavioral therapy (CBT) and humanistic approaches (recognizing a person as unique for his ability to develop) – 27 percent of psychologists each work in them. In third place in popularity is Gestalt therapy (based on experimental-phenomenological and existential approaches): it is preferred by 26 percent of specialists. The researchers note, the popularity of psychodynamic approaches is explained by the fact that cognitive behavioral therapy came to Russia about ten years later than the other methods mentioned; moreover, the offer of educational programs dedicated to psychodynamic methods on the market is much wider than for any other ^[61].

In addition to psychotherapy, medication or pharmacotherapy is also commonly used in the treatment of mental disorders in Russia. Psychiatric medications such as antidepressants, anxiolytics, and mood stabilizers are prescribed by healthcare providers to alleviate symptoms, regulate mood, and stabilize psychiatric conditions. Pharmacotherapy is often combined with psychotherapy or other forms of treatment to achieve optimal outcomes in managing mental health conditions. In the first few months of 2024, antidepressant sales in Russian pharmacies reached a five-year high. Herbal and sedative medications, such as Corvalol and Phenibut, are being gradually replaced by antidepressants ^[62]. This is because the use of pharmacotherapy is effective in treating mental health, especially depression, anxiety and bipolar disorder. Several studies in Russia found that clinical recommendations for the selection and provision of psycho-pharmacotherapy treatment were effective in 70-80 percent of young patients and 55–65 percent of elderly

patients with mental illness ^[63]. In recent years, there has also been an increasing focus on the role of holistic and alternative therapies in the treatment of mental disorders in Russia. These therapies include mindfulness-based approaches, art therapy, and others. Many individuals in Russia have found these alternative therapies to be effective in managing their symptoms and improving their quality of life. In Russia, mindfulness began to be used in the 50s, while it was first proposed by the German doctor Johann Heinrich Schultz already in 1932 ^[66]. Mindfulness-based interventions, including mindfulness meditation, yoga, and mindfulness-based cognitive therapy, are gaining popularity in Russia as treatments for stress, anxiety, mood, depressive, and panic disorders. This is proven by the findings of Russian researchers who explain that the use of meditation techniques by psychologists can reduce the level of situational anxiety experienced by Russian college graduates ^[67]. Besides that, a pilot study found that brief mindfulness training can reduce depression and increase subjective happiness in Russian first-year students, which may further support students' adaptation and well-being during their first year at university ^[68].

Art therapy has long been one of the treatments used for mental health in Russia. Even an association of art therapy specialists, namely the RPO "Russian Art Therapy Association" was founded in 1997, and in 2017 became the National Association for the development of art therapy science and practice "art therapy association". Currently, there are more than 300 specialists such as psychotherapists and psychologists who have received additional education in the field of art therapy and routinely use this method in treating mental health problems in children, adolescents and adults in educational, medical and educational institutions as well as in private practice in Russia.

Furthermore, in 2011, when new rehabilitation departments now started working in every psycho-neurological

department in several Russian cities such as Saint Petersburg and in some other cities as well, art therapy played an important role in the rehabilitation process in these new structures and the type of art therapy that is often used by Russian specialists is play therapy and specific art therapy traditions ^[69]. In 2019 for the first time, the effectiveness of art therapy (drama therapy) in children with mental disorders was studied based on substantial clinical data in Russia. Researchers have developed a method of drama therapy for children with mental disorders, determining the indications and contraindications for this treatment. This method can be used to improve the adaptation of children with mental disorders to micro-social environmental conditions, especially family adaptation, the formation of harmonious, supportive and rehabilitative family relationships ^[70].

The popularity of diverse treatment and therapy options for mental disorders in Russia reflects a multifaceted approach to mental health care that values individual preferences, cultural traditions, and evidence-based practices. By offering a range of therapeutic modalities, Russia provides individuals with choices and opportunities to address their mental health needs in a holistic and personalized manner. Effective mental health treatment in Russia is characterized by a blend of traditional wisdom, modern innovation, and a compassionate commitment to supporting individuals on their journey towards mental well-being.

Treatment and therapy innovations

Advances in the field of mental health care in Russia have led to innovative treatments and therapies aimed at transforming the way mental disorders are diagnosed and treated. From cutting-edge technology to novel therapeutic approaches, Russia is embracing innovations in mental health care practices,

including the use of virtual reality for psychotherapy, Tele-psychiatry and online counseling, neurofeedback therapy and AI for the diagnosis and treatment of mental disorders.

1. Virtual Reality (VR) Therapy

Currently, the use of virtual reality technologies is proving effective in addressing real psychological issues in Russia. By immersing individuals in virtual environments that simulate real-life situations, therapists can provide exposure therapy for anxiety disorders, PTSD, and phobias. Research studies have shown promising results in using VR technology to enhance outcomes and engagement in therapy sessions for mental health disorders. Additionally, relaxation programs using Flow virtual reality technology are being utilized as an effective and promising non-pharmacological method to assist patients in somatic hospitals with complaints of anxiety, apathy, low mood, and symptoms of hypertension ^[72].

At present, the National Medical Research Center for Psychiatry and Neurology named after V.P. Serbsky, a Federal State Budgetary Institution, is actively developing and testing a domestic software and hardware complex of training programs using virtual reality (VR) for the rehabilitation of patients with schizophrenia spectrum disorders who have specific impairments in social functioning. Under the direction of Professor A.B. Shmukler, it has been observed that this technique holds promise by allowing rehabilitation programs to be simultaneously individualized based on detected impairments in social-cognitive skills. The authors anticipate that their technology will see extensive clinical application in the near future ^[73]. Another example of the use of VR for mental health problems in Russia is the development of a VR helmet and application to overcome low self-esteem by one of the Yakutia IT Park companies. The IT product consists of a VR helmet and an application that can be used to carry out a series of exercises in virtual reality. This

VR helmet integrates immersive technology in the practice of treating depression and fear because in virtual reality, the vision is completely immersed in the virtual world and the volumetric events increase the visual perception and accommodation of game scenarios. In this virtual reality space, a person identifies and accepts the body and attributes of a virtual character ^[74].

2. Tele-psychiatry and Online Counseling

By mid-April 2020, telemedicine for outpatient psychiatric care was already in active use in Russia. This rapid adoption was driven by the spread of COVID-19, which made face-to-face outpatient services challenging to provide, while stress and anxiety levels among the population were high, necessitating remote care ^[75]. As a result, the number of requests to online psychotherapists increased by 69 percent compared to 2019 ^[76]. According to Zigmund online, more than 25,000 clients completed over 150,000 psychotherapy sessions on the site. Their turnover in 2020 was approximately 60 million rubles, rising to over 270 million rubles in 2021 ^[77]. Research indicates that remote technology for psychiatric care can be effectively applied in the Russian community for patients not only with common mental disorders but also with psychotic disorders during supportive care. Even when a patient is not online at the scheduled time or when discussing treatment organization difficulties, using encrypted phones and messaging can be an effective method of gathering information about them. Additionally, social networks and messaging apps can be used to work with patients in special circumstances ^[75]. Consequently, the use of Tele-psychiatry in Russia has become very popular due to the numerous conveniences it offers.

3. Neurofitness

Nowadays, neurofitness therapy has become widely used in Russia. For instance, the Tomsk Children's Clinical Hospital

regularly holds neurofitness classes for children as part of psychological support for patients with neurological and traumatology profiles. The children find neurofitness enjoyable and not overly challenging, leading to tangible benefits such as the formation of new stable neural connections, improved ability to perform symmetrical and asymmetrical movements, strengthened vestibular apparatus, and reduced stress and tension [78]. Neurofitness in Russia was developed by the Solovyov Moscow Research and Practical Psycho-neurological Centre to enhance mental health. Neurofitness encompasses a collection of medical procedures and lifestyle modifications, including facial muscle and speech organ control, rhythmic and eurhythmics, fine motor dexterity, and asymmetrical movements of varying complexity and intensity. This technique aims to strengthen and enhance memory, emotional intelligence, and creative thinking. Patients are taught memorization techniques and attend lectures on the nervous system, the neuropsychology of memory, sleep, dietary habits, work, and relaxation. Neurofitness is beneficial for patients experiencing disruptions due to aging, long-term medication use, or persistent mental or physical illnesses. It is effective against depression and aids in the early detection and prevention of dementia [79].

4. Neurofeedback Therapy

Neurofeedback therapy, a non-invasive technique that monitors brainwave activity and provides real-time feedback to individuals, is being utilized in Russia to treat mental disorders. Applications for neurofeedback technology are numerous in Russia and include improving stress resilience and treating mental disorders like depression, anxiety, epilepsy, and attention deficit hyperactivity disorder (ADHD) [80]. In fact, Russian scientists at the Artificial Intelligence Research Institute (AIRI) and HSE University have managed to cut the latency - the time interval between a change in brain activity and the display of the

accompanying neurofeedback signal by half. The outcomes were attained by filtering the latency of brain activity signals from a range of people using a neural network that was trained in low-light circumstances. These results provide new opportunities for the treatment of epilepsy and attention deficit disorder in Russia [81].

Artificial Intelligence for Mental Health Screening

Artificial Intelligence (AI) algorithms are being employed in Russia for mental health screening and diagnosis, utilizing data analytics and machine learning to identify patterns and predict potential mental health disorders. In Russia, AI-based psychotherapy programs, such as *inCognito*, *Dyslecto*, *Neuroscaner*, help streamline the screening process, facilitate early intervention, and personalize treatment plans based on individual needs, contributing to more efficient and targeted mental health care delivery. The rise of innovative treatments and therapies in mental health care reflects a dynamic and progressive approach to addressing the complex needs of individuals in Russia. Through continued research, implementation, and integration of innovative treatments, the future of mental health care in Russia holds great promise for advancing the field and fostering positive change in the lives of individuals facing mental health challenges.

Adoption of AI Technologies Mental Health Diagnosis and Treatment

AI (Artificial Intelligence) has revolutionized various industries, including healthcare and mental health. In Russia, the emergence of AI-based psychotherapy programs, such as *inCognito*, *Dyslecto*, *Neuroscaner*, others mark significant

progress in providing accessible and innovative mental health support.

The *inCognito* has created an AI product to recognize psychological conditions and disorders based on messages. Its algorithm can analyze user responses, determine a number of parameters based on linguistics, and then, based on this data, personalize therapy. Apart from that, *inCognito* is also designed to recognize mental conditions and symptoms of disorders based on natural language. The neural network was trained on hundreds of thousands of user messages, as well as open information from psychological forums. So *inCognito* can also recognize suicidal tendencies, depression, anxiety, sleep and eating disorders, as well as a number of other specific conditions, such as loneliness or social phobia. It has developed a psychological chat-bot, segmented into several distinct applications, including “*Anti-Depression*,” “*Anti-Stress and Health*,” “*Relationships*,” and “*Child Psychology*”^[82].

The “*Anti-Stress*” program is designed to assist users in learning psychological coping mechanisms for managing high levels of stress. Its primary features include comprehensive information and instruction on stress psychology, self-analysis, positive thinking, motivation and concentration techniques, anti-stress habits, anti-stress installations, communication guidelines, and conflict resolution via the chat-bot. Additionally, it offers text consultations with psychologists, practical exercises to enhance relaxation skills, and further promotes self-analysis and positive thinking^[83]. The “*Anti-Depression*” program aims to help users develop self-help psychological skills to treat depressive disorders. Key features include text consultations with psychologists via chat-bots, practical exercises to foster relaxation skills, self-analysis, and positive thinking. It also provides informative and training sessions on topics such as diagnosing the degree of depression and anxiety, the

fundamentals of behavioral therapy for depression, principles of cognitive therapy for depression, mindful-awareness compassion therapy, communication rules, and problem-solving techniques [84]. The "Relationships" program is designed for couples to enhance their psychological self-help capabilities within the context of relationships. The program offers information and training sessions on various aspects of couple dynamics, including relationship diagnostics, conflict prevention, emotion management, effective communication, acceptance of differences, and secrets of successful relationships. It also addresses common issues faced by couples through text consultations with psychologists via chat-bots and practical exercises aimed at promoting relaxation, self-analysis, positive thinking, and planning [85].

The last program in child psychology is tailored for parents seeking to establish mutual understanding with their children and conduct an in-depth evaluation of their child's psychological health. It aims to help parents better manage their emotions and develop effective parenting techniques and child-specific understanding. To facilitate self-diagnosis and provide a series of training sessions in child psychology and child-parent relationships, the program involves filling out cards in a mobile application, texting with a consultant within the program's internal chat, and engaging in exercises to improve mood and relaxation through audio and video instructions [86]. In addition to *inCognito*, researchers from the HSE AI Research Center have developed Dyslector, an application designed to assess the presence and degree of dyslexia in school students. This assessment is based on gender, age, school grades, and eye-tracking data using a pre-trained machine learning model. Users input the participant's gender, age, and school grades into the program, along with the time and location of gaze fixation. The

eye tracker then records the participant's eye movements while they read sentences from a laptop or mobile device. Upon clicking the 'Dyslexia Degree Value' button, the application displays the model's predictions: normal, risk of dyslexia, or dyslexia [87].

Moreover, a team of specialists from the Federal State Budgetary Institution “National Medical Research Center for Psychiatry and Neurology named after V.M. Bekhterev developed Neuroscanner, a mobile assistant for diagnosing and assessing the dynamics of anxiety and depressive disorders. It features a core set of psychometric tools for diagnosing affective and autonomic symptoms and is intended for use by primary care physicians, who are often the first point of contact for patients with non-psychotic mental disorders. The data obtained through the mobile assistant can facilitate interdisciplinary consultations and telemedicine consultations, providing objective data on the patient's condition and enabling quick data transfer. Neuroscanner reduces consultation time, supports high-quality differential diagnosis, offers therapy recommendations, and evaluates treatment responses. Additionally, Neuroscanner can be employed in online educational programs to help practitioners acquire practical skills in assessing standard and routine cases [88].

Furthermore, Russian researchers at the Kurchatov Institute have also created an AI program for a classifier algorithm that can identify schizophrenia in patients with 85 percent accuracy when an MRI of their brain is performed. With this application the researchers were able to identify eight brain regions using the classifier; Abnormalities in the function of this region almost always indicate mental illness. The app can also check the activity of more than a hundred different brain regions in total [89]. The use of such AI-based applications and programs could improve mental health services in Russia in various ways: can

bridge the gap in mental health services, especially in remote or underserved areas, by providing a virtual platform for therapy; can increase the efficiency of delivering therapy and allow for scalability to reach a larger population in need of mental health support; and can contribute to destigmatizing mental health issues and encourage more individuals to seek help by providing a discreet and non-judgmental environment. While AI offers many benefits in mental health issues in Russia, it can also be challenging in matters such as data privacy issues and maintaining human emotional touch that cannot be replaced by computer programs in therapy and mental health care.

Recommendation for Enhancing Mental Health Care

Addressing mental disorders and improving mental well-being is an important public health priority globally, including in Russia. Therefore, recommendations from scientific research and evidence-based studies regarding mental disorders/mental illnesses in Russia are needed. By reviewing the existing literature, it is hoped to offer insights into effective strategies and interventions to improve mental health services and support individuals with mental disorders in the Russian context.

1. Enhancing Access to Mental Health Services

Research suggests that improving access to mental health services is crucial in addressing the burden of mental disorders in Russia. Recommendations include:

- **Expanding Community-Based Services:** Although community-based mental health services have long been developed in Russia, namely in 1919 by order of the health services department of the Moscow regional government, as part of a comprehensive psychiatric service that also included mental hospitals and family patronage. However, there are still major challenges for

the future development of community-based services, so as to organize support for patients with common mental disorders. Therefore, it seems necessary to delegate the treatment of patients with mental disorders to general practitioners. Changes in finance (psychiatry is funded from the national health care budget, whereas general medicine is funded by insurance) and legislation (only psychiatrists can diagnose and treat mental diseases) are necessary for this strategy. Even though the professional healthcare community started this process on its own initiative, changes of this nature take time ^[7].

- Integrating Mental Health into Primary Care: It has long been an issue to provide psychiatric services in primary care to individuals with non-psychotic mental problems. The decisions it has made have become more significant in the last few decades ^[90]. The needs of the primary medical network largely dictate this, as many mental disorder patients (75 percent from 4883) had coexisting somatic conditions. The most common conditions, with prevalence higher than in the Russian Federation's general population, were hypertension and non-insulin-dependent diabetic mellitus. Patients with diagnosed schizophrenia are more susceptible to metabolic abnormalities and endocrine system diseases than people without these conditions ^[91], so it requires the utilization of psychiatric and medico-psychological techniques for optimal therapy. The need for the development of typical algorithms for providing assistance to patients with non-psychotic mental disorders in the primary health network, as well as the preparation and publication of relevant regulatory documents at the federal and municipal levels is of great importance, since the main problem that remains to this day is the recognition of federal health

authorities and the city for the humanitarian, organizational and economic importance of developing models of medical-psychological and psychiatric support into primary health care units. The development of assistance to individuals with non-psychotic and non-specific mental disorders has significant preventive potential for addressing mental health problems in society ^[90]. In addition, ensuring the accessibility and availability of mental health services to the general public is a goal that cannot be achieved only within the limits of the current mental health service system, so interaction with the general medical care system in major medical network facilities becomes very important for the provision of various types of mental health services ^[91].

2. Training and Professional Development

Development of professional skills and knowledge and collaboration with some aspects are essential for the advancement of mental health services. Recommendations include:

- Continuing Education Programs: The most important professional values for mental health specialists in Russia are job opportunities, intellectual stimulation, and work-life balance. They have the greatest need for educational activities aimed at developing their English language skills, learning the principles of evidence-based medicine, and developing the skills for conducting research and publishing their results. So, it is necessary for improving specialists' qualifications and job satisfaction that will lead to an increase in the quality of the care provided to people with mental disorders ^[93]. Moreover, to ensure prompt patient routing, assisting professionals (psychologists, psychiatrics, etc.) should

receive more training in the fundamentals of diagnosing depression and other mental diseases. In addition, development of advanced training programs and cycles of continuing professional education for neurologists and therapists in the diagnosis and treatment of depression is needed as well ^[94].

- Promoting Multidisciplinary Care: Encourage multidisciplinary approach to mental health care involving psychiatrists, psychologists, social workers, and other professionals to provide comprehensive support. In conditions where information overload affects mental health, the source of this information - the smartphone - can simultaneously include a means of combating socially induced stress. The use of apps will prove useful in both primary and secondary prevention ^[88]. Apart from that, the use of technology such as virtual reality to overcome mental disorders is also something that can be very helpful and useful ^[73]. In addition, there is a need to create collaboration between various mental health disciplines (psychiatry, psychology, neurologists, social work, and other specialists) to improve the delivery of comprehensive care and promote a holistic approach in the management of mental health patients ^[94].
3. Strengthening Mental Health Literacy and Awareness
- Subjective stigmas are overcome by ensuring the availability of complete objective information about the rights of citizens, including persons with drug addiction disorders in connection with placement under dispensary drug treatment observation, as well as the organization of appropriate psycho-correctional programs for persons with substance abuse disorders; At the same time, it is important to take into account that overcoming prejudice is a long process, but it proceeds faster and more effectively the more actively

patients and their families participate in it. So, it is needed to create programs for individual and collective assistance to people subject to stigmatization ^[28]. Then, more efforts should be undertaken to spread information about modern diagnostic and treatment approaches in mental disorder through medical educational programs, and to overcome various barriers that increase the stigma and decrease the availability of psychiatric service to mental disorder patients ^[23]. So, raising awareness and enhancing mental health literacy are essential in reducing stigma and improving mental health outcomes.

4. Enhancing Mental Health Policy and Governance

Strong mental health policy frameworks are essential for driving systemic improvements in mental health care. Recommendations include:

- Developing policies and management

The cost of treatment for recurrent depressive disorder (RDD) in Russia is very expensive, less than half of the expenditure is spent on drugs from the standard of care of Russian RDD hospitals so it is important to apply management methods based on a combination of cost analysis and pharmaco-epidemiological analysis (i.e. integrated analysis), which may enable a reasonable choice in selecting cost-effective drugs for inpatient recurrent depressive disorder (RDD) treatment in Russia ^[95]. Furthermore, improving the regulatory framework aimed at minimizing the stigmatization of patients with mental disorders ^[28]. Possible changes to the regulatory framework for providing care for symptoms of mental disorder by neurologists (updating the procedure for providing neurological care - adding the ability to diagnose certain forms of depression and prescribe

antidepressants) can improve mental health care in Russia [94]. Therefore, policy development, service provision and management, and resource allocation for mental disorders are very necessary.

- **Strengthening Data Collection and Monitoring:** As of right now, a number of studies conducted by both international and official Russian organizations indicate that there are notable variations in the number of individuals with mental illness in Russia. Online survey results show a largely haphazard use of the ICD-10 Diagnostic Guidelines in Russia. The low estimates given by survey participants regarding the usefulness of the ICD-10 diagnostic criteria for mental disorders especially schizophrenia, anxiety and depressive disorders create a need to improve the practical usefulness of the diagnostic guidelines in the latest revision of the ICD, including, perhaps, simplifying, generalizing and adapting them to diagnostic capabilities in Real clinical practice has become so important that the use of ICD-10 diagnostics in Russia has become more widespread and the diagnosis of mental illnesses has become easier and more accommodating. Then, with the possibility of transition to ICD-11 and to unify approaches to the diagnosis of mental disorders in Russia, it is necessary to update and improve educational programs for psychiatrists. Apart from that, the continuing medical education system must be implemented more actively and widely [20]. Apart from that, it is also necessary to implement a monitoring system for violations of statutory regulations in the provision of drug treatment services for mental disorders and legal conflicts in their provision, accessible to various interested parties, including representatives of narcotics treatment services and law enforcement agencies,

including those involved for monitoring dispensary drug treatment ^[28]. Therefore, it is important to build robust data collection systems to monitor mental health indicators, evaluate interventions, and track progress toward mental health goals.

- Ensuring Equity and Accessibility: Distribution of social services based on regional knowledge and active mental disorder monitoring from psychiatric services on the regional basis, are important tasks for current Russian governmental policies ^[43]. Ensuring the accessibility and availability of mental health services to the general public is a goal that cannot be achieved just within the confines of the current mental health care system. In main medical network facilities, for example, interaction with the general medical care system is essential for the organization of different types of mental care ^[92]. Psycho-education of patients, providing them with accessible information about depression and the opportunity to receive more accessible qualified care on an outpatient basis and drawing attention to the problem of mental health of the working-age population as socially significant ^[94]. Therefore, it is necessary to prioritize equity and accessibility in mental health services to ensure that all individuals, regardless of their background or location, have access to quality care.

Evidence-based recommendations derived from a literature review offer valuable insights into enhancing mental health care in Russia. Hopefully, by implementing those strategies Russia can improve access to services, raise awareness, integrate evidence-based practices, and strengthen mental health governance, and also can make significant strides in supporting

individuals with mental disorders and promoting mental well-being across the population.

Conclusion

Mental disorders in the Russian Federation are influenced by stigma, access to treatment, and other socio-cultural factors. While challenges persist, the integration of AI technologies into mental health care holds potential for improving diagnosis, treatment, and outcomes for individuals affected by mental illness.

Mental disorders in the Russian Federation are influenced by various factors including societal attitudes, access to healthcare, and the availability of resources. Here's an overview of some key aspects:

1. **Stigma:** Like many countries, stigma surrounding mental illness remains a significant issue in Russia. Cultural beliefs and societal attitudes often contribute to stigma, leading to discrimination and reluctance to seek help. Mental health conditions are sometimes viewed as a sign of weakness or moral failing rather than legitimate medical issues. This stigma can prevent individuals from seeking treatment and can also affect their social and professional lives.
2. **Distribution of Mental Illness:** Mental health disorders are prevalent in Russia, with rates comparable to those in other developed countries. Common mental health conditions include depression, anxiety disorders, substance abuse, and post-traumatic stress disorder (PTSD). The distribution of mental illness can vary across different regions due to factors such as socioeconomic status, access to healthcare, and cultural influences. Urban areas may have higher rates of certain disorders due to stressors associated with city life, while rural areas may face challenges related to isolation and limited access to mental health services.

3. **Treatment:** Access to mental health treatment in Russia can be limited, particularly in rural and remote areas. The country faces challenges such as a shortage of mental health professionals, inadequate funding for mental health services, and a lack of awareness about available treatments. Traditional treatment approaches include psychotherapy and medication, but there is growing interest in incorporating artificial intelligence (AI) into mental health care.
- **AI in Diagnosis:** AI technologies, such as machine learning algorithms, can analyze vast amounts of data to assist in the diagnosis of mental health disorders. By identifying patterns in speech, behavior, and other data points, AI systems can help clinicians make more accurate and timely diagnosis.
 - **AI in Treatment:** AI-powered tools and applications can also support mental health treatment by providing personalized interventions and monitoring patient progress. For example, chat-bots and virtual therapists can offer cognitive behavioral therapy (CBT) techniques and coping strategies to individuals experiencing symptoms of depression or anxiety. AI-based platforms can also track treatment adherence and outcomes, allowing for adjustments to be made as needed.
 - **Challenges and Considerations:** While AI holds promise for improving mental health care in Russia, there are also challenges and ethical considerations to address. These include ensuring data privacy and security, mitigating biases in AI algorithms, and integrating AI technologies into existing healthcare systems in a way that is accessible and culturally appropriate.

Questions

1. What are the common mental health disorders prevalent in Russia?
2. How prevalent is the stigma surrounding mental illness in Russia?
3. What factors contribute to the distribution of mental illness in Russia?
4. What are the traditional treatment approaches for mental disorders in Russia?
5. How can artificial intelligence (AI) be used in the diagnosis of mental health in Russia?
6. What are some AI-based tools and applications that can support mental health treatment in Russia?
7. What challenges and considerations exist regarding the integration of AI into mental health care in Russia?
8. How can efforts be made to reduce stigma and improve access to mental health care in Russia?

Answers

1. Common mental health disorders in Russia include depression, anxiety disorders, substance abuse, and post-traumatic stress disorder (PTSD).
2. Stigma surrounding mental illness remains significant in Russia, impacting individuals' willingness to seek help and their social and professional lives.
3. The distribution of mental illness in Russia can vary due to factors such as socioeconomic status, access to healthcare, and cultural influences. Urban areas may have higher rates of certain disorders due to stressors associated with city life, while rural areas may face challenges related to isolation and limited access to mental health services.

4. Traditional treatment approaches for mental disorders in Russia include psychotherapy and medication.
5. AI-Technologies, such as machine learning algorithms, can analyze data to assist in the diagnosis of mental health disorders by identifying patterns in speech, behavior, and other data points.
6. AI-powered tools, such as chat-bots and virtual therapists can offer cognitive behavioral therapy (CBT) techniques and coping strategies to individuals experiencing symptoms of depression or anxiety. Additionally, AI-based platforms can track treatment adherence and outcomes.
7. Challenges include ensuring data privacy and security, mitigating biases in AI algorithms, and integrating AI technologies into existing healthcare systems in a way that is accessible and culturally appropriate.
8. Efforts to reduce stigma and improve access to mental health care in Russia can include public education campaigns, training programs for healthcare professionals, and policies aimed at increasing funding and resources for mental health services.

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4 Republic of India

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Prevalence Mental Illness in India

For present and lifetime rates, respectively, the weighted prevalence of mental morbidity was 10.6 percent and 13.7 percent. Males were shown to have a larger prevalence of current mental illness than females, both in terms of lifetime (16.7 percent vs. 10.8 percent) and present (13.9 percent vs. 7.5 percent) ^[1]. The largest frequency was seen in the age group of 40–49 years (14.5 percent), whereas the prevalence of present mental illness was greater in metropolitan metro dwellers (14.7 percent) ^[1,2]. According to reports, people with only a primary education had greater rates of mental illness (both lifetime and current experience), and these rates were even higher than those with no education. Mental morbidity rates among the educated population declined with increasing educational attainment. Similarly, compared to their peers, the working population and those who were widowed or separated had greater rates of mental morbidity (both lifetime and current experience). Families in the lowest economic quintile had greater rates of mental illness, both in the present and throughout the course of their lifetime. According to recent data, the mental illness rate was 12 percent in the quintile with the lowest income, 11 percent in the quintile with the middle income, and 9 percent in the quintile with the greatest income ^[3]. Only three-fourths as many people suffered

from mental illness in households in the highest income quintile as in those in the low-income quintile.

Tobacco use disorders contributed to the highest percentage (20.9 percent) of the weighted prevalence of any substance use disorder (current use), which was 22.4 percent overall and 4.6 percent of people had alcohol use disorders, compared to 0.6 percent for other substance use disorders. One-fourth of those surveyed stated they currently used tobacco products, and of them, 83.6 percent had tobacco use disorder (low to moderate dependency: 52.4 percent, severe dependence: 31.2 percent), with low to moderate dependence being more common than serious dependence (7.8 percent) ^[4]. The weighted prevalence of tobacco use disorder was found to be 20.9 percent; this prevalence was greater in men (32.8 percent) and in those between the ages of 40 and 49 (27.5 percent). When comparing the 30-39-year age group (22.7 percent) to the 18-29-year age group (12.4 percent), the prevalence rate was almost twice as high.

In comparison, rural communities had a higher burden (22.7 percent). In Punjab, the percentage of respondents with tobacco use disorders was 5.5 percent, while in Rajasthan, it was 38.3 percent. Just three states—Kerala, Tamil Nadu, and Punjab—reported having a frequency below (10.0 percent) ^[4, 5]. The prevalence of SUDs was reported to be the highest in the 50-59 age groups (29.4 percent) and among the sexes, it was higher in males (35.7 percent). The prevalence was more in rural areas (24.1 percent) as compared to urban non metro (20.3 percent) and urban metro areas (18.3 percent). Among the states, the prevalence was the highest in Rajasthan (38.9 percent) followed by Madhya Pradesh (36.6 percent) ^[6].

Reported prevalence rate of Alcohol use disorder was 4.6 percent with higher rate observed in 40-49- year age group (6.7 percent) and among males (9.1 percent). The burden was more in

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the urban non- metro area (5.6 percent). The prevalence of alcohol use disorder was the highest in Madhya Pradesh (10.3 percent) followed by Punjab (7.9 percent), while it was the lowest in Uttar Pradesh ^[7].

Numerous studies have been conducted on the effects of different psychoactive substances on people, families, and society as a whole. Broadly, One's life is impacted in both health-related and non-health-related ways. As a result of drug use issues among the health issues mentioned by the participants were cancer, delirium, liver issues, TB, and accidents. The statement "Financial loss, family bankruptcy, loss of the peace in the family, stressed relationships between the family & neighbors, divorce/separation of spouses, negative impact on their children are some of the impacts" highlights the much more significant and distressing effects on family members, particularly on the spouse and children (Rajasthan); "The effect is profound, particularly for the women in the household" (Jharkhand).

The prevalence of schizophrenia and psychotic disorders in India is notably high, with a lifetime prevalence rate of 1.4 percent and a current prevalence of 0.5 percent ^[8]. Interestingly, the prevalence is slightly higher in men (0.5 percent) than in women (0.4 percent). The 40–49 age groups (0.6 percent) had a greater prevalence of current experience with schizophrenia and other psychotic disorders than other age groups. Residents of urban metro areas reported greater rates of current experience (0.7 percent) than did other people ^[9]. Mood disorders affect 2.9 percent of the population, with higher prevalence rates found in the 40-49 age group (3.9 percent) and among urban residents (5.6 percent). Women are more likely to experience mood disorders (3.1 percent) than men (2.6 percent), further emphasizing the gendered nature of this mental health challenge ^[10].

Bipolar affective disorders lie in the category of severe mental disorders and had an overall weighted prevalence of 0.3 percent for current and 0.5 percent for lifetime experience. The present prevalence rate of bipolar affective disorder was 0.3 percent greater in men than in women. In contrast to women (0.2 percent), the prevalence of present bipolar affective disorder experience was higher among different age groups and residence categories, with those in the 40-49 age group (0.4 percent) and urban metro dwellers (0.7 percent) having the highest experience.

Depression remains one of the most common mental health conditions in India, with 2.7 percent of individuals experiencing depression currently and 5.3 percent having a lifetime experience. Women are more likely to experience depression (3.0 percent) compared to men (2.3 percent). Moreover, the prevalence of depression is significantly higher in urban areas (5.2 percent) and among those in the 40-49 age group (3.6 percent).

Postpartum depression affects a significant number of new mothers in India, with an overall prevalence of 22 percent. Women were included in eight researches, express depression within two weeks of giving birth. Following their removal, the aggregated prevalence for the 30 studies that remained (a total of 11 257 women) was 19 percent (95 percent CI: 17–22). Southern (26 percent; 95 percent CI: 19–32) and eastern (23 percent; 95 percent CI: 12–35), south-western (23 percent; 95 percent CI: 19–27), and western regions (21 percent; 95 percent CI: 15–28) had the highest estimated total pooled prevalence, respectively. The prevalence was lowest in northern India (15 percent; 95 percent CI: 10–21). The combined prevalence was studies carried out in hospital settings had a higher, but not statistically significant, rate than studies conducted in community settings (17 percent; 95 percent CI: 13–22); see also Fig. 4; Table 2 and studies 202

conducted in urban versus rural areas (24 percent; 95 percent CI: 19–29 versus 17 percent; 95 percent CI: 14–21). When studies with mean maternal ages of less than 25 years and more than 25 years were merged, the prevalence was 20 percent (95 percent CI: 16–24) and 21 percent (95 percent CI: 16–26), respectively.

Neurotic and stress-related disorders, which include conditions like anxiety and phobias, affect 3.5 percent of the population currently, with a lifetime prevalence of 3.7 percent. Compared to other age groups, the prevalence of current experience of neurotic and stress related disorders were higher in the age group of 40-49 years (4.4 percent). When examined across the genders, it was found that females were nearly twice as likely as males to have current experience of neurotic and stress related disorders (4.3 percent for females vs. 2.7 percent for males) ^[11]. Urban metro residents (6.9 percent) had the highest prevalence for current experience of neurotic and stress related disorders when compared to their counterparts.

Generalized anxiety disorder (GAD) and phobic anxiety disorders also contribute to the mental health burden in India. The current prevalence of GAD is 0.6 percent, with women reporting higher rates (0.8 percent) than men (0.4 percent). Similarly, phobic anxiety disorders affect 1.9 percent of the population, with women having higher rates (2.4 percent) than men (1.5 percent), and metropolitan residents experiencing higher rates (3.8 percent) compared to their rural counterparts.

Common mental morbidity represents a group of disorders which are highly common and are often misdiagnosed as physical illnesses in primary care. Studies show that the weighted prevalence of any mental disorder was 10.6 percent current and 13.7 percent lifetime. In contrast, common mental illnesses had a lifetime prevalence that was over six times greater and a current prevalence that was more than twelve times higher than severe

mental disorders. Compared to neurotic and stress-related illnesses, depressive disorders had a comparatively higher frequency of 5.1 percent for lifetime common mental illnesses ^[12, 13]. For current and lifetime experience, the overall weighted prevalence of common mental morbidity was 10.0 percent and 12.3 percent, respectively. Males were found to be almost twice as likely as females to have had common mental illness in the past (13.3 percent vs. 6.9 percent). Urban metro inhabitants (13.8 percent) and those in the 40–49 age groups (13.7 percent) had the highest prevalence of current experience for both current and lifetime experience; the overall weighted prevalence of serious mental disorders was 1.9 and 0.8 percent, respectively ^[12]. Compared to other age groups, the 40–49 age groups had a higher current experience rate of severe mental illness (1.2 percent). In a similar vein, the prevalence of severe mental problems was slightly greater in men (1.0 percent) than in women (0.7 percent). Residents of urban metro areas (1.6 percent) in comparison to counterparts had higher rates.

Co-morbidity is the concurrent presence of two or more medically diagnosed diseases/disorders in the same individual. Majority of the individuals surveyed (83.4 percent) had only one disorder, while 12.3 percent had a dual diagnosis, 4.3 percent had 3 or more diagnoses. The top 10 conditions amongst those with single diagnosis based on descriptive analysis of un-weighted prevalence included: Depression (37.1 percent), Alcohol use disorders (33.2 percent), Psychoses (8.2 percent), Agoraphobia (7.8 percent), OCD (3.1 percent), substance use disorder (other than alcohol) (2.6 percent), Bi-polar Disorder (2.2 percent), General Anxiety Disorder (2.1 percent), panic disorder (2.1 percent) and social phobia (1.1 percent). Amongst those with a dual diagnosis, depression was found in 4 of the top 5 combinations: Depression and alcohol use disorder (17.6 percent), Depression and Agoraphobia (13.3 percent),

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Depression and panic disorder (6.5 percent) and Depression and OCD (4.9 percent); alcohol use disorders and substance use disorders (other than alcohol) was found amongst 13.0 percent of those with dual diagnosis ^[14, 15].

Mental health is also associated with epilepsy, particularly generalized tonic-clonic seizures (GTCS). The WHO's screener, a diagnostic tool for identifying individuals with the Generalized Tonic Clonic Seizures (GTCS) subtype of epilepsy, was accepted by the survey team. Nearly two thirds of epilepsy cases are caused by GTCS, which can be better identified than other types of epilepsy due to its characteristic presentation and simple recognition of symptoms and signs. In general, in all 12 states, the prevalence of screener positivity rate for epilepsy (GTCS alone) was 3.3 percent. According to Table 35, 0.3 percent of respondents tested positive for the GTCS-specific epilepsy screener question. It was found to be higher in men (0.4 percent) and in the 30- to 39-year-old age group (0.4 percent). The prevalence was found to be higher (0.4 percent) in metropolitan metro areas. Punjab had the highest percentage, at 0.7 percent ^[16].

Mental morbidity in India also shows gender trends, with women experiencing higher prevalence rates for mood disorders and neurotic & stress-related disorders than men, who have higher rates for substance use and psychotic disorders. Age also plays a significant role in mental health, with prevalence rates rising as age increases, particularly in the 40-49 age group ^[17,18]. However, psychosis follows a bimodal distribution, with a second peak in individuals aged 60 and above.

Mental health is a significant factor contributing to suicides in India, where over 100,000 people take their lives annually. The causes of suicides are varied, including job-related issues, loneliness, abuse, family problems, mental health issues, alcohol

addiction, and chronic pain. Maharashtra, Tamil Nadu, and Madhya Pradesh report the highest number of suicides, accounting for nearly 50 percent of all suicide cases in the country. Maharashtra had the highest number of suicides (22,746), followed by Tamil Nadu (19,834), Tamil Nadu (15,386), and 13.3 percent, 11.6 percent, 9.0 percent, 8.0 percent, and 7.4 percent of all suicides were committed in Madhya Pradesh, 13,606 in Karnataka, and 12,669 in West Bengal ^[19]. Together, these 5 States were responsible for 49.3 percent of all suicides that were reported in the nation. In the remaining 23 States and 8 IJTs, there were reports of 50.7 percent of suicides. With only 4.8 percent of all suicides reported in the nation, Uttar Pradesh, the most populous State (17.0 percent of the total population), has reported a comparatively smaller percentage share of suicide deaths ^[20, 21].

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Stigma Associated with Mental Disorders in Indian Society

The narrative accounts of the respondents during focused group discussions revealed that the community generally perceived severe mental illness as the result of either bad deeds or black magic. There was some difference between urban and rural residents regarding awareness about mental illnesses. Person with mental health problems is usually perceived as weak, untidy, harmful, and dangerous. They are also considered a nuisance to the public. In general, most of them believed that either they had to be treated by traditional healers or there is no cure for a person with a mental health problem. They also felt that persons with a mental health problem require a longer duration of treatment. So, they are often neglected without any support and few of them end up begging or as homeless mentally ill. Because of the community's perception about the illness experience, most of the persons with severe mental health problems usually undergo unnecessary treatment in faith healing practices before they receive any professional care. They try to hide their illness from the family and community and become reluctant to seek medical care. A study on mental-illness-related stigma among medical practitioners in South India. Quantitative analysis showed low to moderate stigma (Mean = 53.52, SD = 7.61), while qualitative study revealed unintended negative attitude toward mental illness [3].

It is worth noting that the community intervenes in the treatment process, compelling individuals to seek assistance from Bhopas and undergo jhadu funk, which not only prolongs and exacerbates the patient's condition but also leads to chronic suffering. Despite advances in the understanding of mental health issues, mentally ill persons are referred to in various derogatory terms by the public as well as the media.

These words used for the mentally ill vary from community to community and different languages have different terms. Sometimes the name of the mental health hospital was used to brand a person with mental health problems.

Here is some response from the national health survey 2016, conducted by the government of India in 12 states and one can easily understand the condition of Indian society. A respondent from Manipur mentioned depicting mentally ill individuals, especially women, who are unable to care for their families and are consequently subjected to verbal and physical abuse in several Manipuri films. In Chhattisgarh, a participant mentioned that the general public often perceives individuals with psychiatric illnesses as incompetent, irrational, and untrustworthy, which significantly diminishes their prospects for marriage. ^[4] A respondent from Rajasthan remarked that 'Once mentally ill, always mentally ill' highlighting the strong beliefs and limited awareness about mental health problems.

Stigma Associated with Mental Disorders in India

1. Shame and Discrimination. There is a prevalent stigma surrounding mental health issues in India, often leading to feelings of shame, discrimination, and social exclusion for individuals and their families.
2. Lack of Awareness. Misconceptions and lack of awareness about mental health can contribute to the stigma, making it challenging for individuals to seek help or talk openly about their struggles.
3. Impact on Help-Seeking Behavior. Stigma can act as a barrier to seeking professional help, leading individuals to avoid treatment or delay seeking support, which can worsen mental health outcomes ^[5,6].

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National Mental Health Policy of India — 2014

The National Mental Health Policy, 2014, is based, inter-alia, on the values and principles of equity, justice, integrated and evidence-based care, quality, participatory and holistic approach to mental health and is in consonance with the World Health Assembly resolution 65.4 on global burden of mental disorders and the need for a comprehensive, coordinated response from health and social sectors at the Community level. It aims to address the social determinants of mental health like poverty, environmental issues, education, etc.

The vision of the NMHP 2014 is to promote mental health, prevent mental illness, enable recovery from mental illness, promote de-stigmatization and desegregation, and ensure socio- economic inclusion of persons affected by mental illnesses by providing accessible, affordable and quality health and social care to all persons through their life-span, within a rights-based framework.

Given the enormous prevalence of behavioral, mental, and drug use disorders in India, urgent action is required. It is hoped that the NMHS data will influence national mental health care delivery systems and mental health legislation and policy. Most importantly, India's development agenda needs to place more emphasis on mental health. Mental health agendas must be included and integrated into all health policies and programs, as well as those in related fields such as welfare, education, employment, and other programs.

Health care facility of India

The health care system in India is complex with respect to the ownership pattern and is broadly categorized into public or private owned systems. Across the states, the

availability of health care facilities varied from 14.85 per population in Uttar Pradesh to 46.45 per population in Chhattisgarh. According to the World Mental Health Atlas (2014), there were 0.3 psychiatrists per lakh of population in India. Psychologists and psychiatric social workers were even fewer. The average national deficit of psychiatrists was estimated to be 77 percent ^[48]. In developing countries with acute shortages of mental health professionals, the delivery of mental health services through general health care is considered as the most viable Strategy for increasing the access of underserved populations to mental health care.

Traditional healing practices

Traditional healing practices for mental health issues often involve a combination of spiritual, herbal and lifestyle mediation. These may embrace practices such as yoga, meditation, and seeking counsel from spiritual leaders or healers. To start imbibing these practices into your own mental health routine, you could begin by exploring yoga and meditation classes, learning about ayurvedic principles and please ensure that you are receiving appropriate care for your specific mental health issue. Traditional medicines for example in India ayurvedic medicines as we know that Ayurveda is an ancient system of medicine from India that focuses on balancing the mind, body, and spirit, to prevent and treat illness ayurvedic treatments may include herbal remedies, dietary changes lifestyle modifications as mentioned in above lines about herbal medicine as we know that this involves the use of plant extracts to treat various health conditions .different culture have their own way of traditional herbal remedies for common ailments such as cold , digestive issues, and skin problems nature has given us lot of things we should find it and use it properly and

productively. According to existing knowledge apart from India there are many countries like Africa, China etc. talking about African traditional medicines even they have their own culture of traditional healing practices that involve the use of herbs, minerals, rituals and spiritual ceremonies to address physical, mental and emotional issues and traditional Chinese medicine is very comprehensive system of healing that includes practices such acupuncture [it means it involves the insertion of thin needles through your skin at strategic points on your body it's commonly to treat pain and even stress management also], cupping therapy, tai chi and qigong. This concept is based on the concept of balancing energy to promote body health. It's important to note that mental health issues can be treated in many ways but differ from person to person so consult the professionals who have expertise in these practices.

Mental health in workplace in India

As per the Census, there are 474 million working-age people in India. Additionally, the 2018 report, from the nation's Sample Registration System demonstrates that the demographic dividend of the nation is still expanding. The percentage of the population that is working age is predicted to rise from 61 percent in 2011 to 65 percent in 2036, meaning that every year 12 million more people will join the working population ^[1].

According to a poll conducted by The7th Fold 2020 among 509 working individuals from various Indian sectors and metropolises, 36 percent of them had some kind of mental health problem. The COVID-19 epidemic has made mental health issues worse, elevating them to a more significant problem.

A healthy population productively contributes to the economy and it is in the benefit of organizations to safeguard public health. Poor mental health at the workplace can be a contributor to a range of physical illnesses like hypertension, diabetes and cardiovascular conditions. People need to continue throughout their lives; they can't avoid work most of the time, even in a pandemic like COVID-19. The radiation workforce from Bangladesh had the highest number of contacts with COVID-19-positive patients, followed by India, Indonesia and Nepal. A countrywide symptom analysis showed that the novel coronavirus presented both short- and long-term side-effects. Headache and anxiety were common symptoms in Indian and Bangladeshi participants. Exposure to COVID-19-positive patients exhibited enhanced stress levels, largely related to fear of quarantine/isolation from family members, etc. Which places workers in a very risky position to become affected by various mental disorders ^[2], Interventions for workplace mental health in India are not well researched. It is important to support research on risk factors, cost-effectiveness analysis, and mental health in employees. The review focuses on the issues with stress and mental health that working people encounter. Mental Health of the unemployed was the worst in India and 47 percent of unemployed reported anxiety with 61 percent of them feeling stressed and 42 percent felt anger and 60 percent of unemployed showed stress regarding uncertainty of future and 61 percent for career growth ^[3]. Percentage of stress employees are facing in India: Self/Family Physical Health (32 percent); Work task and deadlines (31 percent); Self / Family Mental Health (25 percent); Performance Appraisal (22 percent); Social distancing / isolation (18 percent); Relationship issues (17 percent); Being laid off (16 percent); Children's Education (13 percent).

Coping mechanisms

Overall, Well Being includes physical health and mental health scores. The well-being of employees who used positive coping mechanisms like exercise, meditation and yoga was much healthier than the rest. At the same time, those who used negative coping mechanisms like avoiding and suppressing emotions, social media and isolating themselves from family and friends showed a much worse well-being score. The mental wellbeing of those who had a pre-existing illness is poorer than the healthy participants.

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Emerging Mental Health Challenges in India

Urbanization and Lifestyle Changes: Rapid urbanization has led to increased stress, lifestyle-related disorders, and mental health issues like anxiety and depression. **Technology Addiction:** With the widespread use of smartphones and social media, issues like internet addiction and cyber bullying are on the rise, impacting mental well-being. **Work Stress:** High-pressure work environments, job insecurity, and long working hours are contributing to a rise in stress-related disorders among the working population. **Youth Mental Health:** The youth in India are facing unique challenges related to academic pressure, career expectations, and social media influence, leading to mental health issues like anxiety and depression. **Shortage of human resources:** Compared to India's big population of 1.44 billion, India is having only limited numbers of health workers. **Limited Resources:** Shortage of government funds and infrastructure. **Connectivity:** India is still a developing country. India still needs to develop a lot of infrastructure and need to create its connectivity between urban cities and rural villages.

Strategies for Improving Mental Health Services and Awareness

Telemedicine and Online Counselling. Expanding access to mental health services through telemedicine platforms can bridge the gap between mental health professionals and individuals seeking help, especially in remote areas. **Emphasis on School-Based Interventions.** Implementing mental health education in schools, training teachers to recognize early signs of mental health issues, and providing support services for students. **Integration of Mental Health into Primary Healthcare.** By integrating mental health services into primary healthcare facilities, individuals can receive timely and more accessible

mental health support. Public Awareness Campaigns. Launching widespread public awareness campaigns through various mediums to educate the population about mental health, reduce stigma, and encourage help-seeking behavior. Community Mental Health Programs. Establishing community-based mental health programs that provide support, counselling, and awareness-raising activities within local communities.

Raising awareness of mental health education is crucial. Enhanced understanding of mental health can result in better outcomes. Over half of the participants lacked sufficient knowledge on mental health and mental disease. A community cross-sectional study carried out in the Indian state of Karnataka. 350 research subjects were chosen using a practical sampling method 50.8 percent of people didn't know enough about mental illness and mental health. Participants who were illiterate were more likely to have inadequate knowledge. Fifty-eight percent of the participants knew little about mental health.

Education plays a critical role in dismantling the deep-rooted stigma associated with mental health in Indian society. Through comprehensive awareness campaigns and targeted education initiatives, communities can cultivate a more nuanced understanding of mental health conditions. This shift in perception not only fosters greater empathy but also empowers individuals to provide meaningful support to those grappling with mental health challenges. By reframing mental health as a legitimate medical concern rather than a source of shame, education can pave the way for more open dialogue and encourage individuals to seek timely and appropriate care.

Comprehensive education equips individuals with the knowledge to identify early signs of mental health issues, enabling timely intervention before conditions worsen. By fostering awareness of symptoms and available resources, people are more likely to seek professional help at an earlier stage,

mitigating the risk of escalation and improving overall outcomes. Awareness campaigns can play a pivotal role in highlighting the significance of mental well-being and the adoption of self-care practices. By normalizing the need for mental health support and promoting proactive measures, such campaigns encourage individuals to prioritize their mental health and seek help when necessary, fostering a culture of prevention and resilience.

Community workshops in schools, workplaces, and local areas can disseminate accurate mental health information and normalize discussions. Media campaigns across TV, radio, social media, and print are instrumental in raising awareness and combating stigma. Providing mental health literacy training to teachers, healthcare professionals, and community leaders enables them to recognize and support those in need. Peer support programs create safe, inclusive spaces for individuals to share experiences and reduce isolation. Integrating mental health education into school curriculums fosters early understanding and resilience in children. Together, these strategies can significantly enhance mental health literacy and support in India.

Case studies and success stories

- 1) A 24-year-old female client reported that for the last 1 month she has difficulty in falling asleep even after a long tiring day. She cannot keep her eyes closed. She also had difficulty in controlling her anger. She could not tolerate dishonesty and fake promises, and got infuriated in office about petty issues. She had an abusive relationship with her boyfriend and had hit him on several occasions. But when the anger subsided, she would go to him and would be ready to do anything to please him. She sought therapy at the point when her boyfriend was threatening to leave her and she could not tolerate it and cut her wrists. She also reported of being abused by parents and of having a disturbed family

environment ^[1].

(Suggestion)

The therapist explained that her anger was an expression of a stifled cry of the psychological pain inside her which she was unable to express in words. Her expressions of distress came out in the form of abusive behavior, which further alienated those around her. This further increased her distress which again manifested as anger – either on others or on herself. She could not sleep because of her psychological distress. The therapy was aimed at enabling her to understand her reactions and connect it to her feelings. Gradually she was able to explore negative feelings and was in a better position to handle it and could communicate it in a language and manner which was understood by others.

- 2) I am a 47-year-old woman and work for the Post Office. I am finding it very difficult to motivate myself to go to work every day for the past 2 months. I am thinking of resigning from my job. I have difficulty getting up from bed in the mornings. I am a very sincere worker and try to do everything perfectly. However, because of frequent staff absenteeism and staff shortages, my supervisors tend to rotate me in various departments, to fill in the shortage. I feel very low and have stopped enjoying anything. I do not have any problems in my personal life as my husband and mother-in-law are very supportive of my work and help me to look after my children. I have never felt like this before as I am a very dedicated worker and have always worked beyond my working hours to complete all duties. Please advise what I should do? ^[1]

(Suggestion)

I feel you are suffering from depressive disorder. Work stress is the cause for your illness. Unfortunately, your need to do everything perfectly is contributing to your problems. You are in a difficult position- because of your reputation as a sincere worker; your supervisors rely on you and post you to sections where work is pending. You are a perfectionist and therefore you try and complete everything and maybe take on too much burden without realising that it is causing you stress and anxiety. The symptoms you are describing are typical of depressive disorder: feeling lethargic, inability to get up from bed in the morning, having poor quality of sleep and feeling tired and listless, inability to enjoy things which used to interest you indicated you have depression. I feel the first step you should take is to speak to your supervisor and explain your situation. Request him not to keep on posting you to different departments. You can take some time off on leave and go for a holiday if it is possible. Try and get some regular exercise and even after this if your problems persist, you may need to see a psychiatrist for help.

- 3) I have a two and half year-old son and I am very worried about him. He is still not able to walk and can only crawl and uses 2 or 3 words like “baba” and “ma”, although I think he uses them randomly instead of using them meaningfully. My neighbor’s daughter is of the same age but is now walking and speaks in 2–3-word phrases. I am very worried. Please advise what we should do ^[1].

(Suggestion)

From the description, it is clear that your son’s developmental milestones are delayed. After birth, as

children are growing up, they develop and grow at an expected rate. For example, they are supposed to sit, walk and start speaking within an expected time frame. The simplest rule for parents to remember is that children usually develop social smile by the time they complete 2 months, can hold their head steadily by the time they complete 4 months, can sit alone with little support by 8 months and can stand alone by 12 months. Social smile means that the child smiles back at you when you smile at the child. When the child is delayed in development, then these milestones are not reached within that specified period. Most children start using 1-2 words by 12 months apart from baba or ma and start using 10-20 words between 1-2 years. Children walk unsupported between 1-2 years. Therefore, from your description, it appears that your son is not being able to meet the expected milestones at the age when he should have done so. This indicates that he is delayed in development.

- 4) We got married six months back. Our parents had arranged our marriage through some relatives. Incidentally, I had been engaged before, but that had not worked out in the end. This time I did not want to prolong the engagement and we got married within a month of getting to meet each other. She is from a different state and the eldest amongst her three siblings, while I am the younger one of two siblings. And then I started noticing the differences. Our viewpoints wouldn't match we would get into endless arguments which led to shoving and hitting each other. My parents, relatives, family friends have tried to talk to her and asked her to adjust, but she is adamant. She is constantly on the phone with her parents, and they blame me for not taking adequate care of her- they have pampered her so much ^[1].

(Suggestion)

Marriage between two individuals results in the individuality of two people coming together. The ways we look at life and deal with different issues-vary from family to family. When two people marry, they bring together different adjustment strategies from their family of origin. Hence the initial time period is the most difficult as the differences become more noticeable. It is how both the husband and wife accept and respect each other that determine how the issues will be sorted. No one person can be solely responsible for the adjustment. It is a team-work. Family members mean well, but end up introducing their own biases rather than allowing the couple the space to develop their own set of dynamics. Mutual respect, privacy, and giving each other some space-helps foster patience and understanding. Marital therapy will give you guidelines about how to develop a healthier relationship. Also, some of the individual personality difficulties can also be addressed so as to ease the process of adjustment. At the end of the day both you and your wife are one team, so the problems need to be worked on rather than blamed on each other.

My daughter is 13 years old. She is very intelligent. She is very good in her studies and also a very good dancer. But for the last 7-8 months she has been behaving peculiarly. Whenever she goes to the toilet, she takes almost 1 to 1 1/2 hours and never comes out early. Whenever she goes to wash her hands, she goes on washing for a long time. If she thinks that she won't sit at a particular place then nobody can make her sit there. While dressing up she keeps on changing her mind before finally selecting one. Sometimes she is very lazy. But once she gets to do what she likes, she behaves actively. I've tried to make her understand that whatever she

is doing is not right. She temporarily understands my point but again goes back to her former self. She thinks that whatever she is doing is not perfect and then again redoes that particular thing. I'm tense. I can't understand whether this is just a prank and is she going through any difficult psychological problem? Please help ^[1].

(Suggestion)

It's highly unlikely that your child is engaging in a prank. As with many emotional disorders, it can be challenging for family members to pinpoint the exact issue, as these disorders often manifest within the child's internal mental space. Children, in particular, may struggle to articulate their thoughts and emotions clearly, leaving you to observe behaviors that may seem odd or purposeless. A trained professional, such as a clinical psychologist or psychiatrist, can help interpret these behaviors and assist the child in expressing their internal experiences. In the case of obsessive-compulsive disorder (OCD), irrational and intrusive thoughts, images, or impulses—such as “it's still dirty” or “if I don't tap nine times, something bad will happen to my family”—recur without the person's intention, causing significant distress. The persistent nature of these negative and erroneous thoughts leads individuals to engage in compulsive behaviors like repeatedly washing an already clean bathroom or performing superstitious actions (e.g., tapping nine times before starting any task). While these behaviors offer temporary relief from anxiety, they are time-consuming and can severely disrupt daily life. Unfortunately, this relief is short-lived, and the individual soon finds themselves caught in another cycle of irrational, distressing thoughts. Effective treatments, such as Cognitive Behavioral Therapy (CBT), are evidence-based approaches that help

individuals break free from these "thought-action traps." In more severe cases, medication may also be necessary. Family dynamics play a crucial role in either mitigating or exacerbating the problem, which is why family counseling is an integral part of a comprehensive treatment plan. OCD is a heterogeneous disorder, meaning it can present with various themes and manifestations. Relapses are common making long-term follow-up essential, with regular check-ups recommended every six months to a year. It's important to seek professional help from a psychiatrist or psychologist as soon as possible to ensure timely intervention and ongoing support.

- 5) My child is suffering from hypotonia? Does that mean she has less strength in her muscles?

(Suggestion)

The low muscle tone associated with hypotonia must not be confused with low muscle strength. In bodybuilding, good muscle tone is equated with good physical condition, with taut muscles, and a lean appearance, whereas an out-of-shape, overweight individual with fleshy muscles is said to have "poor tone." Neurologically, however, muscle tone cannot be changed under voluntary control, regardless of exercise and diet. In an article by Diane E Gagnon, M.Ed., PT, she explains "True muscle tone is the inherent ability of the muscle to respond to a stretch. For instance, if you quickly straighten the flexed elbow of an unsuspecting child with normal tone, the biceps will quickly contract in response (automatic protection against possible injury). When the perceived danger has passed, which the brain figures out really quickly once the stimulus is removed the muscle then

relaxes, and returns to its normal resting state. The child with low tone has muscles that are slow to initiate a muscle contraction, contract very slowly in response to a stimulus, and cannot maintain a contraction for as long as his ‘normal’ peers. Because these low-toned muscles do not fully contract before they again relax (muscle accommodates to the stimulus and so shuts down again), they remain loose and very stretchy, never realizing their full potential of maintaining a muscle contraction over time.”

- 6) My son’s age is 5 yrs and he does not concentrate in school. Teachers have complained that He does not follow actions and is unable to play with his classmates. Can I suspect these issues are sensory? If yes, then what can be done? ^[1]

(Suggestion)

Yes. All children rely on the ability to successfully modulate and discriminate the sensory information they are receiving from the world around them to develop the skills needed to successfully participate in occupational roles, including that of students. The school readiness skills that are influenced by sensory integration include, but are not limited to, the ability to sustain attention to task; follow directions (praxis on verbal command); complete a series of tasks independently (praxis); use in-hand manipulation skills; demonstrate handwriting skills including grasp, visual tracking, and visual praxis skills; use postural control to maintain an upright sitting position at a desk or on the floor; and demonstrate the gross motor skills needed to support play during recess activities. When sensory integration deficits are suspected, therapists with specialized training can administer the Sensory Integration and Praxis Tests (SIPT; Ayres, 1989) to determine the specific areas of sensory integration that are

problematic for the child. If the evaluation results indicate that the child is having underlying problems processing sensory information, the therapist would recommend therapy using an ASI® approach.

- 7) I am a 24-year-old woman. I work in Park Street in a private firm and I happened to witness the horrific fire at Stephen's Court recently. Since that night, I have not been able to sleep and I am getting repeated nightmares of the various scenes of the incident. There is one particular scene which comes into my mind whenever I am closing my eyes – it is that of a young woman shrieking for help from the window of her office. I later found out that she died due to the fire. I just see her terrified face whenever I close my eyes and now I am afraid to close my eyes, as I am scared that her image will haunt me. I am unable to concentrate on my work, do not feel like talking to anyone and am just filled with anger. I have realised that human life has no certainty and planning for the future is pointless as I can die tomorrow. Please help me ^[1].

(Suggestion)

You have witnessed an exceptionally traumatic event which had terribly tragic consequences. Witnessing such an event triggers a chain of emotional reactions, which you are now experiencing. Psychiatrists call this reaction PTSD (Post Traumatic Stress Disorder). In persons who have PTSD, flashbacks of the traumatic scene occur repeatedly, as you are experiencing. You find yourself re-living the event, again and again. This can happen both as a 'flashback' in the day and as nightmares when you are asleep. These can be so realistic that it feels as though you are living through the experience all over again. You see it in your mind, but may

also feel the emotions and physical sensations of what happened – fear, sweating, smells, sounds, pain. These kinds of traumatic events are shocking because they undermine our sense that life is fair, that it is reasonably safe and that we are secure. A traumatic experience like this makes it very clear that we can die at any time. Your reactions therefore are a natural reaction to a narrowly-avoided death. You may be thinking that it could easily have happened to you and hence a sense of hopelessness and anger at the authorities who are callous is understandable. If your problems are continuing for more than more than 6 weeks since the event, and these experiences do not seem to be getting better, it is worth talking it over with a psychiatrist.

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AI for mental disorders treatment

Mental health disorders pose a significant challenge globally, including in India, where a large population grapples with various mental health issues. The integration of artificial intelligence (AI) into various sectors has revolutionized the way tasks are performed and problems are addressed. One of the most promising applications of AI is in the field of mental health care. In recent years, there has been a growing interest in leveraging artificial intelligence (AI) to enhance the diagnosis, treatment, and management of mental health disorders ^[1,2]. Mental health disorders imply a significant and growing challenge in India, with a substantial portion of the population grappling with issues such as depression, anxiety, and stress. The conventional approach to mental health treatment often faces barriers such as stigma, limited accessibility to trained professionals, and the sheer magnitude of the problem ^[3, 4].

Mental health disorders have become a significant public health concern in India, affecting millions of individuals and their families. With the increasing prevalence of conditions such as depression, anxiety, and schizophrenia, there is a growing need for innovative and accessible solutions ^[5]. Artificial Intelligence (AI) is emerging as a promising tool in revolutionizing the landscape of mental healthcare, offering new possibilities for early detection, personalized treatment, and improved overall outcomes ^[6]. In recent years, the field of mental health care in India has witnessed a paradigm shift, thanks to the integration of Artificial Intelligence (AI) into various aspects of diagnosis, treatment, and support. With the increasing prevalence of mental health disorders in the country, innovative solutions are essential to address the growing challenges ^[7].

India faces a considerable burden of mental health disorders, ranging from depression and anxiety to more severe conditions like schizophrenia. According to the World Health

Organization (WHO), mental health disorders affect nearly 7.5 percent of the Indian population, with only a fraction receiving adequate treatment ^[8]. Stigma, lack of awareness, and a shortage of mental health professionals contribute to the existing challenges in providing effective mental health care. According to the National Mental Health Survey of India (2015-16), nearly 150 million people in the country are estimated to be in need of active mental health intervention ^[9, 10]. Despite this staggering number, there is a significant treatment gap, with only a fraction of those in need receiving adequate care.

Traditional approaches to mental health care in India encounter various challenges, including a shortage of mental health professionals, stigma associated with seeking help for mental health issues, and limited resources for outreach and intervention ^[11, 12]. Additionally, the subjective nature of mental health assessments and the variability in treatment responses further complicate the delivery of effective care. While the integration of AI in mental health care holds great promise, several challenges and ethical considerations must be addressed. These include data privacy concerns, the potential for algorithmic bias, and the need for regulatory frameworks to ensure the responsible and ethical use of AI in mental health settings.

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5 People's Republic of China

Novi Budianti

Nariyah Handayani

Mimi Sumiarsih

Distribution National and Regional

WHO estimates that tens of millions of people in the Western Pacific Region, including China, live with common mental disorders. Depression and anxiety were the two most prevalent, with approximately 54 million people in China experiencing depression and 41 million facing anxiety disorder.^[1,2] Mental health challenges have been a growing concern in China for decades, with a steady increase in incident cases, prevalent cases, and Disability-Adjusted Life Years (DALYs) reported from 1990 to 2019. Women are considered more vulnerable than men in developing mental disorders due to their significant burden from cultural changes related to urbanization and globalization.^[3]

"From 2002 to 2020, mortality linked to mental disorders decreased overall among rural Chinese residents. In urban areas, a similar decline occurred between 2005 and 2011, though no

¹ WHO. (2019, October 10). *WHO China / World Mental Health Day 2019*. World Health Organization (WHO). Retrieved May 27, 2024, from <https://www.who.int/china/news/events/world-mental-health-day/world-mental-health-day-2019>

² WHO. (n.d.). *Mental health in China*. World Health Organization (WHO). Retrieved May 27, 2024, from <https://www.who.int/china/health-topics/mental-health>

³ Chen, Q., Huang, S., Xu, H. et al. (2024) *The burden of mental disorders in Asian countries, 1990–2019: an analysis for the global burden of disease study 2019*. *Transl Psychiatry* 14, 167. <https://doi.org/10.1038/s41398-024-02864-5>

significant changes were observed in other years within this period. Age was identified as a factor associated with higher mortality rates from these disorders. From 2002 to 2020, mental disorder mortality decreased overall among rural Chinese residents. In urban areas, a similar decline occurred between 2005 and 2011, though no significant changes were observed in other years within this period. Age was identified as a factor associated with higher mortality rates from these disorders.

Stigma

Stigmatization of people with mental disorders occurs in all parts of the world. The Chinese are considered to have a tradition of cultural collectivism. Some of these values emphasize the importance of harmony on individual and family goals which leads to becoming a social stressor. It is perceived that having a family member with mental illness may bring disgrace to the family. Therefore, many Chinese families hide their relatives' mental illnesses to avoid stigma ^[4] Stigma in both forms of public stigma and self-stigma has a dangerous effect on people with mental disorders. Stigma can stimulate prejudice and discrimination when validated by the general population. The situation even becomes more dangerous when prejudice and discrimination are internalized into self-stigma. It may cause loss of self-esteem and efficacy to recover ^[5] Studies reported that perceived stigma and mistrust of social support influenced help-seeking behaviors on mental health problems. Some people

⁴ Yu M, Cheng S, Fung KP-L, Wong JP-H, Jia C. (2022). *More than Mental Illness: Experiences of Associating with Stigma of Mental Illness for Chinese College Students*. International Journal of Environmental Research and Public Health. 2022; 19(2):864. <https://doi.org/10.3390/ijerph19020864>

⁵ Corrigan, P.W.; Roe, D.; Tsang, H.W.H. *Challenging the Stigma of Mental Illness: Lessons for Therapists and Advocates*; John Wiley & Sons Ltd: London, UK, 2011. [Google Scholar]

ultimately tend to solve their problems by themselves or with their close relatives such as friends and families, rather than the professionals ^[6]. Discrimination and stigma have more effect among women which worsen the outset and chronicity of mental disorders ^[7]

The most common mental disorder in China

Concerns about China's environment, corruption, and socialist future may come up while looking at the country from the outside. Within, though, mental illness is a more important concern that competes with these problems. Experts and the media in China claim that the nation is experiencing a mental health "crisis" (Bi 2008; Chen 2010). According to a 2009 Chinese Disease Control Centre survey, more than 100 million of the 1.3 billion Chinese people have a mental illness of some kind (7.7 percent); of those, more than 16 million had serious mental illness (Chen 2010) (16 percent). In contrast, 1 in 37 Chinese adults, or 2.7 percent of the population, were reported to have mental illness in the 1950s (Yuen 2013). Overall, it is estimated that 190 million Chinese people require professional counseling or psychiatric therapy (Shao 2016); this number is higher than that of the aforementioned 2009 poll, but it is consistent with forecasts made globally: According to WHO estimations, 25 percent of China's total health burden would be related to mental disease by 2020 (Shao 2016).

⁶ Yao, Y.Y.; Chen, J.F. Research and education strategies of psychological help-seeking behavior among Chinese college students. *J. Campus Life Ment. Health* 2017, 15, 109–111. [Google Scholar]

⁷ Yu M, Cheng S, Fung KP-L, Wong JP-H, Jia C. (2022). *More than Mental Illness: Experiences of Associating with Stigma of Mental Illness for Chinese College Students*. *International Journal of Environmental Research and Public Health*. 2022; 19(2):864. <https://doi.org/10.3390/ijerph19020864> (copied no. 4)

When looking at China from an external perspective, concerns often focus on issues like environmental problems, corruption, and the direction of socialism. However, within the country, there's a more urgent issue: mental illness. Chinese media and experts have labeled it a "crisis." A 2009 survey by the Chinese Disease Control Center revealed that over 100 million out of China's 1.3 billion populations suffer from some form of mental illness, with over 16 million experiencing severe mental illness. This stands in stark contrast to the reported ratio of mental illness in the 1950s, which were 1 in 37 Chinese adults. Overall, around 190 million Chinese are believed to require professional counseling or psychiatric treatment. This figure exceeds the total reported in the 2009 survey but aligns with global predictions. The World Health Organization estimates that by 2020, mental illness will constitute one quarter of China's overall health burden. ^[8]

Depression and anxiety stand as the most widespread mental health conditions in China. Additional mental health disorders encompass bipolar affective disorder, schizophrenia, and other psychoses, dementia, intellectual disabilities, and developmental disorders like autism. In the past decade, China has undertaken substantial initiatives to address obstacles hindering access to diagnosis and care, such as implementing mental health legislation advocating for expanded facilities, bolstering the number of mental health professionals, and raising public awareness. ^[9] As of 2019, the estimated prevalence and lifetime prevalence of mental disorders in China stood at 9.3 percent and 16.6 percent, respectively, contributing to approximately 7.4 percent of the total disease burden. It is

⁸ Mental Health in China, Jie Yang (2018)

⁹ <https://www.who.int/china/health-topics/mental-health>

projected that by 2030, depression will emerge as the mental disorder carrying the greatest disease burden in China.

In 2020, China's first nationwide poll on psychological discomfort during the COVID-19 epidemic found that 35 percent of respondents reported anxiety and depression. School closures were linked to negative mental health symptoms and behaviors among children and adolescents. Although limitations have been lifted, there is still concern about resuming normal routines and the risk of virus transmission resuming. This scenario raises concerns, yet it is part of a larger picture of unresolved mental health issues in China ^[10]

People from disadvantaged backgrounds, particularly those lay off from state enterprises and those abandoned in rural areas, actually have the highest rate of depression in China, despite the fact that many people associate depression with middle class people or celebrities like Cui Yongyuan, Zhang Guorong, and San Mao. According to Zhang Jin (2014), the prevalence of depression among individuals who received social assistance or poverty relief is three times higher than China's overall depression rate. Depression may lead to poverty, and depression makes people even poorer—it's a terrible cycle ^[1]

The lowest of mental illness rate in China

Psychological and mental health disorders are having an increasing impact on Chinese society. Substantial changes to the country's social fabric during the last few decades, as well as economic strain and inequality, have all weighed heavily on people's mental health. According to estimates, the number of people suffering from mental disorders in China exceeded 160 million in 2019, making the country one of the most impacted by

¹⁰ Mental health after China's prolonged lockdowns. [Mental health after China's prolonged lockdowns \(thelancet.com\)](#). 2022

mental health-related ailments. During the COVID-19 epidemic, China's rigorous containment efforts and their consequent effects on daily life increased the likelihood of mental health issues among its inhabitants.^[11]

The prevalence of mental illnesses varies widely across different conditions. Among the various mental health disorders, the lowest prevalence rates in China are typically seen for rarer or less commonly diagnosed conditions. Based on available data and research, some of the mental health disorders with the lowest prevalence rates in China include: schizoaffective disorder, is a mental health condition characterized by a combination of symptoms of schizophrenia (such as hallucinations or delusions) and mood disorder symptoms (such as depression or mania). The prevalence of schizoaffective disorder is quite low, typically estimated at less than 0.5 percent of the population. Reasons for Low Prevalence: Complex Diagnosis: Schizoaffective disorder can be difficult to diagnose due to its overlapping symptoms with other mental health conditions like schizophrenia and bipolar disorder. This complexity might lead to under-diagnosis or misdiagnosis. Awareness and Reporting: Low awareness and stigma associated with mental illnesses in general, and more so with complex and severe conditions like schizoaffective disorder, can result in fewer people seeking help or getting diagnosed. Healthcare Infrastructure: Limited access to specialized mental health services in rural or underserved areas can also contribute to the low prevalence figures, as individuals may not receive the appropriate diagnosis or treatment.

¹¹ Zhang, W (2023). Mental health in China - statistics & facts.
<https://www.statista.com/topics/9303/mental-health-in-china/#topicOverview>

Obsessive-Compulsive Disorder (OCD) is characterized by recurrent, unwanted thoughts (obsessions) and/or repetitive behaviors (compulsions). The prevalence of OCD in China is relatively low, estimated to be around 0.8 percent to 1 percent of the population.

There are some reasons for Low Prevalence Cultural Factors: Cultural attitudes and understanding of OCD can influence its prevalence. In some cases, behaviors associated with OCD might be normalized or not recognized as a disorder. Underreporting: Stigma and lack of awareness about OCD can lead to underreporting. People with OCD might be reluctant to seek help due to fear of judgment or misunderstanding. Diagnostic Challenges: Similar to other mental health conditions, diagnosing OCD accurately requires specialized knowledge and training, which might not be uniformly available across all regions.

Eating disorders, such as anorexia nervosa and bulimia nervosa, have relatively low prevalence rates in China, typically estimated at less than 1 percent of the population for each disorder. There are some reasons for Low Prevalence, namely Cultural Differences: Cultural attitudes towards body image and food can influence the prevalence of eating disorders. Traditional Chinese culture may place different emphasis on body image compared to Western cultures, potentially affecting the manifestation and recognition of these disorder. Underdiagnosis: Eating disorders may be underdiagnosed due to lack of awareness among healthcare providers and the general public. Symptoms might be overlooked or attributed to other health issues. Stigma and Secrecy: Stigma associated with eating disorders can lead to secrecy and reluctance to seek help, contributing to lower reported prevalence. Reasons behind Low Prevalence Rates, including: Stigma and Cultural Factors, Stigma surrounding mental health issues in China can lead to

underreporting and under-diagnosis of mental health conditions. Cultural beliefs and norms may also influence how mental health disorders are perceived and whether individuals seek help. In many cases, mental health conditions might be seen as a personal or family failure, leading to reluctance in acknowledging and addressing these issues. Limited Mental Health Literacy, Limited awareness and understanding of mental health conditions can result in low prevalence rates. People might not recognize the symptoms of certain mental health disorders or might attribute them to other causes, such as physical health problems or stress. Education and public awareness campaigns are crucial to improving mental health literacy and encouraging help-seeking behavior.

Healthcare Access and Infrastructure, Access to mental health services is uneven across China, with rural and underserved areas facing significant challenges in accessing care. A shortage of trained mental health professionals and limited mental health services can result in under diagnosis and inadequate treatment. Improving mental health infrastructure and training more professionals can help address these issues. Diagnostic Challenges, Accurately diagnosing mental health disorders requires specialized knowledge and training. In many cases, symptoms of rarer or more complex mental health conditions might be overlooked or misdiagnosed. Enhancing the training of healthcare providers and improving diagnostic tools can help increase the accuracy of diagnoses and ensure that individuals receive appropriate care. Efforts to address mental health issues in China have seen significant progress in recent years, with a combination of policy reforms, increasing awareness, and improved access to services. Key developments include:

1. **Legislative Framework:** The *Mental Health Law* passed in 2013 was a major milestone. It was designed to protect the rights of individuals with mental illness, promote early intervention, and standardize the diagnosis and treatment of mental health conditions.
2. **Integration into Primary Care:** China has been working to integrate mental health services into the broader healthcare system, particularly at the primary care level. This aims to ensure that mental health issues are identified and treated early, especially in rural areas where access to specialists is limited.
3. **Awareness Campaigns:** Public awareness about mental health has increased, partly due to campaigns addressing stigma. These efforts aim to encourage people to seek help and reduce the stigma associated with mental illness, which has historically been a barrier to treatment.
4. **Community-Based Care:** In line with global trends, China has shifted toward community-based mental health services. This involves providing care outside of psychiatric hospitals, promoting outpatient services, rehabilitation programs, and social reintegration for people with mental health issues.
5. **Mental Health Resources:** The government has invested in expanding mental health infrastructure, increasing the number of professionals, and improving training for healthcare workers to address mental health needs.

While these efforts represent progress, challenges such as stigma, uneven access to services, and a shortage of mental health professionals remain significant obstacles. Recognizing the importance of mental health, the Chinese government and various organizations have taken steps to address mental health issues and improve access to care. Key initiatives include:

1. Policy Reforms

The Chinese government has implemented policy reforms to prioritize mental health and integrate mental health services into the broader healthcare system. This includes the introduction of the National Mental Health Work Plan and initiatives to train more mental health professionals.

2. Community-Based Interventions

Community-based mental health services have been expanded to provide accessible and culturally appropriate care, particularly in rural and underserved areas. These services include psychological counseling, outreach programs, and mental health education initiatives.

3. Public Awareness Campaigns

Public awareness campaigns have been launched to reduce stigma surrounding mental illness and promote mental health literacy. These campaigns aim to increase understanding and acceptance of mental health issues and encourage help-seeking behavior.

4. Technology and Innovation

Technology-based solutions, such as online counseling platforms and mobile mental health apps, are being utilized to improve access to mental health services, especially among young people who are more comfortable with digital platforms.

Future Prospects for Mental Health Care in China

While progress has been made in addressing mental health issues in China, significant challenges remain. Key considerations for the future of mental health care in China include:

1. Integration and Collaboration

Continued efforts to integrate mental health services into the broader healthcare system and strengthen collaboration between healthcare providers, community organizations, and government agencies are essential for improving access to care and addressing the multifaceted nature of mental health issues.

2. Capacity Building

Investing in the training and development of mental health professionals, particularly in rural and underserved areas, is critical for enhancing the quality and availability of mental health services.

3. Early Intervention and Prevention

Prioritizing early intervention and prevention strategies, including mental health education in schools, workplace mental health programs, and community-based interventions, can help address mental health issues before they escalate.

4. Research and Innovation

Continued investment in mental health research and innovation is needed to advance understanding of mental illness, develop effective interventions, and tailor services to the diverse needs of the population.

5. Addressing Stigma

Efforts to reduce stigma surrounding mental illness and promote a culture of acceptance and support are crucial for fostering a supportive environment for individuals living with mental health conditions.

While certain mental health disorders in China, such as schizoaffective disorder, OCD, and eating disorders, exhibit relatively low prevalence rates, these figures may be influenced by factors such as underreporting, stigma, and limited access to

care. Addressing these challenges requires comprehensive efforts to improve mental health literacy, reduce stigma, enhance healthcare infrastructure, and promote early intervention and prevention. By taking a holistic approach to mental health care, China can work towards improving the well-being of its population and ensuring that individuals with mental health conditions receive the support and treatment they need.

Government strategy to eliminate the mental disorders

Mental health holds a significant position within the broader spectrum of health. Prior to 2009, China grappled with a stark imbalance between the supply and demand for mental health services, posing substantial challenges to its mental health service system. In 2009, China initiated a comprehensive healthcare system reform. Recognizing the paramount importance of mental health services, the government introduced a series of policies and initiatives aimed at enhancing the mental health service system, bolstering personnel capabilities, and refining service models. For instance, the enactment of the Mental Health Law, the nationwide expansion of community mental health services, the establishment of additional psychiatric hospitals and clinics, the augmentation of psychiatric workforce through educational endeavors, and the establishment of an integrated interdepartmental cooperation mechanism in mental health were implemented to enhance service delivery. Moreover, particular emphasis was placed on addressing the mental health needs of vulnerable groups such as children, adolescents, and the elderly, while gradually increasing attention towards patients with common mental disorders, thereby transitioning from an individual-centered approach to mental health towards a more community-centered one. Many of these

initiatives commenced as pilot projects to accumulate practical insights before scaling up nationwide ^[12]

The mental health care system in China has evolved over time and involves various aspects, including policies, services, and laws ^[13]. Here are some key points: Policy and Law: China has developed its first mental health law which was enacted in 2013 ^[4]. This law covers both civil and criminal law and highlights the importance of public health interventions to address mental illness ^[4]. The mental health care system in China has evolved over time and involves various aspects, including policies, services, and laws ^[14]. Here are some key points: Policy and Law: China has developed its first mental health law which was enacted in 2013 ^[4]. This law covers both civil and criminal law and highlights the importance of public health interventions to address mental illness ^[4]. Services and Systems: Mental health services in China are concentrated in large specialist hospitals rather than in community and primary health care ^[15]. This encourages the long-standing pattern in China of going directly to large hospitals for specialist care, rather than seeing a general practitioner first ^[5]. Challenges: China faces challenges in developing appropriate strategies and service systems to reduce the huge mental health burden ^[4]. Prevalence of Mental Health Disorders: Depression and anxiety are the two most common mental health disorders in China ^[16]. Other mental health

¹² W. Zhang, Mental health policy and implementation from 2009 to 2020 in China (2023)

¹³ Zhong S Wang X. Mental Health Policy, System and Service in China. link [springer.com](https://www.springer.com) (2021)

¹⁴ Zhong S Wang X. Mental Health Policy, System and Service in China. link [springer.com](https://www.springer.com) (2021)

¹⁵ Mental health after China's prolonged lockdowns. [Mental health after China's prolonged lockdowns \(thelancet.com\)](https://www.thelancet.com) (2022)

¹⁶ Mental Health in China. <https://www.who.int/china/health-topics/mental-health>

disorders include bipolar affective disorder, schizophrenia and other psychoses, dementia, developmental disorders including autism ^[6]. Efforts to Increase Access: Over the past decade, China has made significant efforts to address the barriers that prevent people from accessing diagnosis and treatment, including the introduction of a mental health law that calls for more facilities, an increase in mental health professionals, and improved ^[6].

Public awareness

Recently, mental health was a rarely mentioned topic in the public sphere. Many patients faced discrimination and were considered socially fragile. Following several sad occurrences that made global headlines, the Netherlands passed its first mental health law in 2013. It coordinates the treatment of mental diseases and prevents prejudice, progressively changing attitudes about the problem. Most Chinese people now recognize the value of mental health services and their efforts.

With public awareness growing, government spending and private investment have expanded dramatically in recent years, bridging the gap between mental healthcare facilities in cities and rural areas. Digitalization and the rise of social media have also expedited the movement toward active mental health maintenance ^[3]. Psychiatric Hospitals In China, public psychiatric facilities have considerable power. However, the country's public mental health facilities are chronically understaffed, unable to satisfy the demands of patients. Furthermore, resources are focused in rich eastern regions and urban centers, leaving China's vast rural areas underserved. Many districts and counties across the country had long been without psychiatric beds, and the number of mental health experts in the western areas remained low. In 2009, the Chinese

government introduced new medical reform laws that encouraged private investment in the healthcare sector and actively pushed the establishment of private health facilities. Since then, an increasing number of private mental health firms have been registered each year. In 2019, the number of private psychiatric hospitals surpassed that of government-owned institutions, with more private mental healthcare facilities being developed in remote areas.

The high recurrence rate of mental disorders and protracted treatment time frames have resulted in considerable profitability for the mental healthcare industry, allowing private enterprises to enter the market. The current increase in the sector has led not just in the establishment of smaller local mental healthcare facilities, but also in the expansion of publicly traded corporations such as the Wenzhou Kangning Hospital Group.

Treatment or method for mental disorders

With the increasing burden of mental health in China, especially in neurological and psychiatric disorders and substance use disorders, the Chinese Government sees the need to make policies in an effort to deal with it. There are about 4 (four) phases of mental health policy development in China, namely:

The first phase, in 2004, China launched the National Continuing Management and Intervention Program for Psychoses (686 Programs). This program reformed the public health system including an integrated mental health care program. It is in the form of a pilot project of an integrated mental health service model between hospitals and the community. The scope of integrated mental health services includes management, treatment and rehabilitation for severe mental disorders. However, there are obstacles due to lack of manpower, funds and facilities.

In the second phase, the Chinese government began to realize that in implementing health system reform, especially in mental health care, there were shortages of manpower, funds and facilities. It began to increase efforts to improve the mental health care system, by strengthening regulations by drafting laws and outlines. Some of the laws and outlines drafted are as follows:

- In 2008, the Outline of the National Mental Health Work System (2008-2015) was developed, which was implemented by updating mental health facilities and setting up psychiatric outpatient services in general hospitals nationwide in 2012-2013.
- In 2012, the Mental Health Law of the People's Republic of China was issued. In 2014, there was a discourse on Deepening the Reform of Clinical Medicine Personnel Fostering through Health Department and Education Department Cooperation. This was implemented by increasing the role of universities in producing experts, through undergraduate majors in psychiatry education program at selected universities.

The third phase, handling mental health is not only the task of the health sector. Various related sectors need to work together so that mental health problems can be resolved. The Chinese government realizes this, so in addition to increasing the capacity of the workforce and facilities, an efficient working mechanism is built to ensure mental health services are more accessible. Establishing a comprehensive mechanism of interdepartmental cooperation in mental health is done at this stage, with the preparation of the National Mental Health Work Plan (2015-2020). In the work plan, in 2015 the National Comprehensive Management Pilot Project for Mental Health was piloted in 40

sites. Based on the pilot, the work guideline was improved in 2018.

In the fourth phase, as China's economy grew, so did the government's concerns about psychosocial problems. The government's focus began to change from case management to prevention and health promotion. There are 2 important things launched by the Chinese Government in this regard, the first is establishing the Guidance on Strengthening the Psychological Services in 2016. This document was issued by the National Development and Reform Commission with 20 other departments. The purpose of this document is to guide in developing all kinds of psychological services such as mental health education and psychological crisis intervention, improving mental health services for the elderly and adolescents, improving personnel capability, and improving the psychological service system.

The second is the development of a long-term action plan outlined in the Healthy China Action Plan 2019 - 2030. The action plan states that China aims to increase depression treatment rates to 80 per cent by 2030. It is therefore necessary to increase efforts in addressing people's mental health in order to achieve this target. To this end, a national campaign for mental health promotion was also launched. It calls for greater government efforts in communicating mental health knowledge to the public and building a network of community-based mental health services.

The common treatment used by countries

Based on various laws and outlines set by the Chinese Government, the treatment for mental disorders involves a combination of approaches. Some of them are as follows:

1. **Psychotherapy:** Psychological counseling and psychotherapy have seen significant growth in China. These approaches aim to address mental health issues through talking therapies and behavioral interventions.
2. **Public Psychiatric Institutions:** Public psychiatric institutions play a dominant role in providing mental health services. However, these facilities often lack staff and struggle to meet patient needs.
3. **Medication:** While psychotherapy is increasingly popular, medication remains an essential part of treatment. However, it's worth noting that in some cases, patients with major depressive disorder may not receive antidepressant treatment.
4. **Awareness and Stigma:** There is still a stigma associated with mental health issues in China. Some individuals may avoid discussing treatment for mental disorders due to a lack of perception or feelings of stigma.
5. **Epidemiology:** WHO estimates that 54 million people in China suffer from depression, and about 41 million suffer from anxiety disorders. The goal is to ensure that at least 80 percent of patients suffering from depression have access to treatment by 2030.

AI as mental health treatment

China has developed severe AI based treatments for mental health such as Xiaoice WeDoctor, and iFlytek. Xiaoice is an AI Companion, developed by Microsoft China. Xiaoice is an AI chatbot that engages users in empathetic conversations. Xiaoice has been used by millions of Chinese users to alleviate loneliness and provide emotional support. Its success highlights the potential of AI in offering companionship and early mental health interventions.

WeDoctor, a leading digital health platform in China, integrates AI to enhance its telehealth services. The platform uses AI to analyze patient data, provide diagnostic support, and recommend personalized treatment plans. WeDoctor's AI capabilities have improved access to mental health care, especially in remote areas, iFlytek: AI-Powered Psychological Assessment. Then, iFlytek, a Chinese AI company that has developed an AI-powered psychological assessment tool that analyzes speech patterns and emotional expressions to detect signs of mental health issues. This tool is being used in schools and workplaces to identify individuals at risk and provide early interventions.

Recommendation based on Literature Reviews

Mental health is a critical component of overall well-being and quality of life. In China, mental health issues have become increasingly significant due to rapid social, economic, and cultural changes. This writing provides recommendations to enhance mental health care in China, focusing on public awareness, access to services, workforce development, technology integration, and stigma reduction.

- Enhancing Public Awareness and Education: Nationwide Public Education Campaigns. Launch comprehensive public education campaigns to raise awareness about mental health issues, their symptoms, and the importance of seeking help. These campaigns should target diverse demographics, including children, adolescents, adults, and the elderly, through various media platforms such as television, radio, social media, and community outreach programs.
- Content and Messaging: Develop culturally sensitive messages that challenge stigma and promote mental health as an integral part of overall health. Use positive

narratives, real-life stories of recovery, and testimonials from individuals who have successfully managed their mental health conditions to foster a supportive and understanding public attitude.

- **Collaborations and Partnerships:** Collaborate with schools, universities, workplaces, and community organizations to disseminate mental health information. Engage influencers, celebrities, and public figures to endorse mental health awareness and reduce stigma.
- **School-Based Mental Health Programs:** Curriculum Integration, Integrate mental health education into school curricula from primary to higher education. Teach students about emotional well-being, stress management, and recognizing signs of mental health issues in themselves and others.
- **Training for Educators:** Provide training for teachers and school staff to recognize and respond to mental health issues among students. Equip them with skills to create supportive and inclusive environments that promote mental well-being.
- **Student Support Services:** Establish school-based mental health support services, including counseling and peer support programs, to ensure students have access to confidential and professional mental health care within the school setting.
- **Expanding Access to Mental Health Services:** Improving Rural Healthcare Infrastructure, Investment in Infrastructure. Increase investment in rural healthcare infrastructure to ensure that mental health services are available and accessible in remote areas. This includes building mental health facilities, equipping them with

necessary resources, and ensuring they are staffed with trained professionals.

- **Telehealth Services:** Expand telehealth services to provide remote mental health care. Telepsychiatry and tele-therapy can bridge the gap between rural and urban healthcare access, allowing individuals in remote areas to receive timely and effective mental health support.
- **Mobile Clinics:** Deploy mobile mental health clinics that travel to underserved areas to provide on-site care and support. These clinics can offer screenings, counseling, and treatment services, bringing mental health care directly to that in need.
- **Affordable Mental Health Care: Insurance Coverage.** Ensure that mental health services are covered by public and private health insurance plans. Reduce out-of-pocket expenses for mental health treatment to make it more affordable and accessible for all individuals, regardless of their financial situation.
- **Government Subsidies:** Provide government subsidies for mental health care, particularly for low-income families and vulnerable populations. Subsidies can cover the cost of medications, therapy sessions, and other essential mental health services.
- **Sliding Scale Fees:** Implement sliding scale fees based on income to make mental health services more affordable. This ensures that individuals pay for services according to their ability to afford them, reducing financial barriers to care.
- **Strengthening the Mental Health Workforce: Training and Certification.** Standardized Training Programs, Develop standardized training programs for mental health professionals, including psychiatrists, psychologists, counselors, and social workers. Ensure

- that training includes the latest evidence-based practices and culturally sensitive approaches to care.
- Continuing Education: Mandate continuing education for mental health professionals to keep them updated on new research, treatments, and best practices. Offer regular workshops, seminars, and online courses to facilitate ongoing professional development.
 - Certification and Licensing: Implement rigorous certification and licensing requirements for mental health professionals to ensure high standards of care. Establish a national certification body to oversee the accreditation process and maintain a registry of certified professionals.

Conclusion

The state of mental health in China is shaped by a complex interplay of sociocultural, economic, environmental, and psychological factors. While significant progress has been made in recent years, challenges remain in terms of reducing stigma, improving access to care, and addressing regional disparities. The Chinese government's efforts to prioritize mental health through legislation, policy initiatives, and healthcare reforms are commendable, but sustained commitment and investment are needed to achieve lasting improvements. As China continues to develop and modernize, ensuring that mental health care keeps pace with these changes is essential for promoting the health and happiness of its people. Through collaborative efforts, innovative solutions, and a commitment to destigmatizing mental illness, China can create a brighter future for mental health care, harnessing the power of AI to support and enhance the well-being of its citizens.

Task: Research and Analysis on Mental Health in China

Objective:

To understand the current state of mental health in China, identify the challenges, and propose potential solutions.

Instructions:

Research Phase:

- Investigate the prevalence of different mental health disorders in China. Focus on disorders such as depression, anxiety, schizophrenia, and eating disorders.
- Explore the sociocultural, economic, and environmental factors that influence mental health in China.
- Examine the current mental health policies and initiatives implemented by the Chinese government.
- Look into the availability and accessibility of mental health services, particularly in rural versus urban areas.
- Investigate the role of stigma in mental health and how it affects individuals seeking treatment.

Analysis Phase:

- Based on your research, identify the key challenges faced by the mental health care system in China.
- Analyze how cultural attitudes and economic factors contribute to these challenges.
- Evaluate the effectiveness of current mental health policies and initiatives in addressing these issues.
- Propose potential solutions to improve mental health care in China. Consider aspects such as public awareness campaigns, policy changes, and the integration of technology.

Presentation Phase:

- Prepare a written report summarizing your findings. The report should be 1500-2000 words and include the following sections:
- Introduction: Briefly introduce the topic and outline the objectives of your research.
- Current State of Mental Health in China: Summarize the prevalence of mental health disorders and the key challenges.
- Factors Influencing Mental Health: Discuss the sociocultural, economic, and environmental factors.
- Evaluation of Policies and Initiatives: Analyze the effectiveness of existing policies and initiatives.
- Proposed Solutions: Provide recommendations for improving mental health care in China.
- Conclusion: Summarize the key points and the importance of addressing mental health issues.
- Create a PowerPoint presentation highlighting the key points of your report. The presentation should be 10-15 slides and include visuals such as graphs, charts, and images to support your findings.

Questions to Consider:

- What are the most prevalent mental health disorders in China, and how do they compare to global trends?
- How do cultural attitudes towards mental health in China influence individuals' willingness to seek treatment?
- What are the main barriers to accessing mental health care in rural areas compared to urban areas?
- How effective are the current mental health policies and initiatives in addressing the mental health crisis in China?

- In what ways can technology, such as Tele-health and AI, be utilized to improve mental health care in China?

Evaluation Criteria:

- Depth of Research: Thorough investigation and use of credible sources.
- Critical Analysis: Insightful analysis of the factors influencing mental health and the evaluation of policies.
- Proposed Solutions: Practical and innovative recommendations.
- Clarity and Organization: Clear, well-structured report and presentation.
- Presentation Skills: Effective communication and use of visuals in the PowerPoint presentation.
- By completing this task, students will gain a comprehensive understanding of the mental health landscape in China and develop skills in research, analysis, and presentation.

6 Republic of South Africa

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South Africa lies thousands of miles distant from major African cities such as Lagos and Cairo and more than 6,000 miles (10,000 km) away from most of Europe, North America, and eastern Asia, where its major trading partners are located—helped reinforce the official system of apartheid for a large part of the 20th century.

The apartheid regime was disdained and even vehemently opposed by much of the world community, and by the mid-1980s South Africa found itself among the world's pariah states, the subject of economic and cultural boycotts that affected almost every aspect of life ^[1].

Eventually forced to confront the untenable nature of ethnic separatism in a multicultural land, the South African government of F.W. de Klerk (1989–94) began to repeal apartheid laws. That process in turn set in motion a transition toward universal suffrage and a true electoral democracy, which culminated in the 1994 election of a government led by the Black majority under the leadership of the long-imprisoned dissident Nelson Mandela. As this transition attests, the country has made remarkable progress in establishing social equity in a short period ^[1].

Durban, a port on the Indian Ocean, is a major industrial center. East London and Port Elizabeth, both of which lie along the country's southern coast, are important commercial,

industrial, and cultural centers. Today South Africa enjoys a relatively stable mixed economy that draws on its fertile agricultural lands, abundant mineral resources, tourist attractions, and highly evolved intellectual capital. Greater political equality and economic stability, however, do not necessarily mean social tranquility.

Stigmatization of People Living with Mental Health Issues in South Africa

Stigma and discrimination associated with certain illnesses have remained a global public health concern over the years. Treatment stigma has led to major barriers to accessing health care and illness management. Stigma has been linked with problems relating to knowledge (ignorance) and attitudes (prejudice) while discrimination has largely been related to behavior. Different types of stigmas exist ranging from public (externalized or experienced stigma) to self-stigma (internalized stigma). Though these types of stigmas are interlinked and one can lead to the other, their overall effects on the people with mental illness (PWMIs) can be far reaching. In addition to dealing with their illness, PWMIs have to deal with the social, psychological and economic consequences of psychiatric stigma which can exacerbate low self-esteem, marginalization from society, social isolation, social anxiety, poor social skills and difficulties in securing employment, housing difficulties as well as poor social support, all of which are important for integration into the society. These effects, in turn, can lead to strained relationships, depression, low self-esteem, unemployment and be a barrier to accessing health care, etc. These consequences are compounded by poor access to health care within a health care system already challenged by widespread inequalities in resources and health personnel. Reducing stigma has hence been

identified as an important factor that will improve the lives of those with mental illness.

Negative stereotypes by the public and media which portray PWMI as violent, dangerous, dependent, not fit to get married, psychologically unstable and unfit to work are some of the challenges that these persons have to face from the society in which they live. These stereotypes exist irrespective of the severity or recovery status of patients lending credence to Goffman's description of stigma as 'spoiled identity' [2]. In the light of the fact that persons with mental illness have to grapple with various types of stigmas, it is important that the health care facilities from where they seek help for their illness should be non-judgmental and value free. The attitude of health care providers is a key to ensuring this. Individual beliefs, situational circumstances and personality characteristics have been identified as significant determinants of people's attitudes towards people with mental illness with society's conceptualization of mental disorders having a strong influence on practical professional responses even in the face of information to the contrary.

Health care providers are therefore often guilty of treatment stigma of PWMI. With the decentralization of mental health care and its integration into primary health care services in South Africa, many general healthcare providers who have not been exposed to patients with mental disorders, now have to provide health services to users with mental disorders. Previous studies outside of Africa suggest a high level of stigma and discrimination amongst general health care providers as well as mental health care providers. Among health professionals, mental health professionals have been found to be less optimistic about prognosis and the long-term outcomes for people with mental illness than other health professionals. This therefore calls

for interventions targeted at mental health professionals as well as other health care service providers whose services are vital to the recovery of people with mental illness ^[3].

The South African health care system is largely characterized by being organized predominantly to provide acute care as well as inequities between private and public health care that can be attributed to apartheid past. The disease burden of South Africa is characterized by the clashing chronic disease epidemics that the health care system needs to respond to through reorganizing care for integrated chronic disease management. Results from the South African Stress and Health (SASH) Survey show a 75 percent treatment gap of common mental disorders nationally. In addition to other factors that may be responsible for this treatment gap, stigmatization of people with mental illness especially by health care professionals may also be responsible for this treatment gap.

In addition to increasing access to care for people with mental disorders through improved identification and treatment services, there is also a need to address stigmatization of PWMIs to improve service uptake as well as ensure acceptability of services provided especially with the on-going reorganization of the South African health care delivery sector. In order to inform the development of interventions that may help to reduce stigma in the society, it is important to understand the ways in which PWMIs are stigmatized as well as various stigmatizing agents. This study aimed to explore i) the experience of psychiatric stigma and discrimination by service users with mental illness, at the primary health care level as well as within their families and communities; ii) the perceived causes of stigma and discrimination; iii) the perceived impact of stigma and discrimination on service users; and iv) perceptions on appropriate interventions to address this problem. Investigating the experiences of stigma and discrimination by service users

from their own perspective is especially important because testimonials from service users have been found to be an effective tool for anti-stigma interventions. Unfortunately, there has been little research focusing on the lived experiences of those experiencing stigmatizing attitudes particularly service users ^[3].

The mental health burden is increasing in Africa and is estimated to be responsible for 9 percent of the non-communicable diseases burden. Common mental health illnesses such as depression and anxiety disorders contribute about 8 percent and 3 percent, respectively, to the years lost to disability in Africa. Currently, mental illnesses are responsible for 13.6 million disability-adjusted life years (DALYs) in the region. Despite this surge in mental health burden, there is an estimated mental health treatment gap of 76 – 85 percent for serious mental disorders in low- and middle-income countries (LMICs). In South Africa, an estimated gap of 75 percent for common mental disorders (anxiety, depressive and substance use disorders) has been reported ^[4].

Multiple factors are attributed to Africa's large mental illness treatment gap, including low priority at a policy level, lack of skilled personnel, limited financing, and poor allocation of financial resources towards institutional care. Institutional mental health stigma plays a role in the low priority of mental health in resource allocation, contributing to limited progress towards universal access to mental health services globally. In Africa, limited-service availability is compounded by low service demand fueled by traditional beliefs and misconceptions that promote mental health stigma. Consequently, this results in a cycle of poor mental health services utilization, demand availability and funding for services ^[4]. Due to the limited mental health services in Africa, caregiving for service users with severe mental illness often falls onto family members who are the only

available support. Caregiving is an immense and demanding burden, and families are often left to cope on their own. The South African health system offers no specialized/integrated support for family caregivers while there are no limits to the specialist services [at tertiary level facilities] available to service users. Furthermore, stigma against the family of an individual with mental illness is common in Africa, and it provides an added burden of negotiating social stigmatization. Due to mental health stigma, both mental health service users and their family caregivers suffer from low self-esteem, shame, anger and this often results in attempts to conceal the stigma ^[5].

Stigma limits the uptake of mental health services and integration of people with mental illness into communities and society at large. In South Africa, caregivers and service users report stigma experiences within families and communities, resulting in families withholding the information that a family member has a mental illness from community members for fear of stigmatization. High levels of mental health stigma within communities threaten the social reintegration of service users and the deinstitutionalization of mental health services and care – which are central to the South African National Mental Health Policy Framework (2013–2020). Ironically, a shift from institutional to community mental health care approaches are meant to counter the psychiatric stigma associated with institutionalization that removed people with mental health illness from society ^[6, 7].

Studies in high-income countries have demonstrated short to medium-term improvements in mental health knowledge and a few reported attitudinal improvements. Variances in mental health stigma intervention findings are attributed to the differences in study design, delivery approaches and target populations. Research on the interventions to reduce mental health stigma within communities remains sparse in developing

countries. Over half of the published studies on stigma reduction interventions in developing countries are focused on human immunodeficiency virus (HIV) and only three studies concentrate on mental health. Only one study was identified that focused on addressing community mental health stigma in African settings. A recent review on stigma reduction interventions in LMICs identified only nine studies that varied in their educational content, and only three explicitly included stigma sessions ^[8].

The deinstitutionalization of mental health services requires community-level anti-stigma interventions to accompany this process to aid the reintegration of service users within their communities, inclusive of service users themselves, caregivers and their families. Therefore, our study qualitatively evaluated the feasibility and acceptability of a community-delivered mental health intervention for family caregivers from low-income South African communities. For our study evaluation, feasibility is defined as consisting of eight focus areas (i.e., acceptability, demand, implementation, practicality, adaptation, integration, expansion and efficacy testing) in intervention design in the preparation for full-scale implementation ^[9, 10].

The responses from the caregivers who participated in the feasibility study strongly suggest the acceptability of the intervention. The caregivers reported satisfaction and endorsed the intervention as helpful in caring for the service user and themselves. Self-reported positive changes in mental health stigmatizing attitudes among the caregivers and subsequent improvements in relationships with the service users were attributed to the intervention. The caregivers were appreciative of how the intervention helped them understand mental illness, and in turn, caregivers shared their newfound knowledge with

their immediate family members. Similar results of acceptability have been reported from other mental health interventions for caregivers and their families ^[11].

The intervention was delivered from a relatively accessible central venue in the community. Participation and completion of the intervention remained throughout, suggesting the acceptability and utility of the community-based support group approach. The feasibility and acceptability of group-based mental health interventions and their effectiveness to improve clinical outcomes have been successfully demonstrated in the case of other public health issues in the region, such as HIV or AIDS in Tanzania. For broader application at scale, training existing community-based workers such as auxiliary social workers under the supervision of social workers to run the support group sessions for service users and caregivers within communities should be considered and evaluated accordingly. Task-sharing of responsibilities for mental health services has been proven feasible and effective in LMIC countries such as Zimbabwe where there are chronic shortages of health workers ^[12].

For future applications, several considerations need to be made. The caregivers suggested the inclusion of support options (individual and group sessions) and medical personnel to enrich the intervention. These suggestions are probably unrealistic in the context of sparse medical and mental health specialists in South Africa. The inclusion of a session on common medications prescribed for mental health service users with severe mental illness and about their side effects should be considered for similar programs in the future. Referral pathways to existing mental health professionals should also be included for those requiring additional professional support ^[13]. The advent of the coronavirus disease 2019 (COVID-19) pandemic disrupted health services and had an overwhelming impact on mental

health distress (Moitra et al.; Yao et al.). Not only has it foregrounded the need for strengthened mental health services globally, but it has also highlighted the need for digital platforms to provide workshops and training to promote social distancing. Previous studies in high-income countries have assessed the feasibility and accessibility of digital approaches to mental health interventions through Tele-health and concluded that the approach could be widely applied. There is increasing evidence of the efficacy and potential of Tele-health interventions for mental illness and marginalized groups in developing countries [14].

The caregivers recommended that future interventions consider community awareness initiatives to improve mental health literacy and reduce mental health stigma within communities to improve the social landscape for people living with a mental illness. Understandably, community stigma remains a vital issue of concern for both caregivers and service users. Failure to address the social stigma around mental illness threatens the social reintegration efforts of persons living with mental illness, especially in African settings where stigma remains high. This insight of caregivers on the need for community awareness interventions to reduce mental health stigma at a population level needs emphasis as community care demands increased social acceptance of people living with a mental illness [15, 16].

Financial distress among the families of mental health service users. Our study participants were from low-income communities, and their demographics showed that the majority have monthly household incomes that fall below the South African minimum wage of approximately US\$240.00. Mental health stigma in low-income South African communities has been high in an already financially constrained setting where

misconceptions on mental illness are prevalent and the need for stigma reduction strategies needs to be emphasized. While interventions such as the current one may contribute to reducing stigma, the financial burden of care also requires attention, and strategies need to be developed to assist caregivers in improving and strengthening their financial independence [18, 19, 20]. Strengthening relationships between caregivers and mental health service users, and promoting coping and alleviating some aspects of the burden of care. With the South African government's drive for deinstitutionalization of mental health services, the need to integrate such community group-based initiatives that address the mental health stigma of caregivers within community mental health services is essential to increase the uptake of services and facilitate social reintegration of service users. However, the need for population-based anti-stigma interventions is also required to facilitate social reintegration and acceptance of mental health service users within communities [21].

The Highest Rate of Mental Illness

The magnitude of mental illness in South Africa, its significant impact and the clarion call to actionable measures triggered the first national collaborative Mental Health conference between the government and Mental Health Professionals which was held in Johannesburg in April 2023 [22]. South Africa ranks among the highest in the world with prevalence of mental health disorders [23]. In an article on 2023 Mental Health news in South Africa, the high prevalence of common mental health disorders among South Africans accounts for 25 percent when compared to the United States which accounts for 6.9 percent, Australia which accounts for 10 percent, and Brazil which accounts for 7.9 percent. High levels of psychological distress which includes Depression and

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Anxiety, if left untreated, significantly poses a strain on the health care system, family, and the economy. These distresses are as a result of high levels of violence, unemployment, poverty and inequality ^[24]. Statistics showed that 1 in 3 people in South Africa experience a mental health breakdown, 1 in 10 South Africans with mental health problems have access to mental health care service, and 1 in 4 South African employees are diagnosed with depression ^[25]. Several studies have established a relationship between mental health and socio-economic status.

Research findings on the epidemiology of major depression in South Africa revealed that females experience a significantly higher rate than males, and low level of education contributes to increased prevalence of depression ^[26]. Education is thought to bestow economic, occupational, and status benefits, may include reduced financial strain, increased autonomy, improve work conditions, and minimize routinization ^[27]. Besides that, hormonal changes in women, particularly during puberty, prior to menstruation, following pregnancy and after menopause can cause depression. Men however, present with externalizing symptoms as the triggers for depression, which are sensitivity to external career and goal related factors ^[28].

In a survey on Depression, anxiety and childhood trauma, 3402 adults across the nine provinces of South Africa between September and October 2021 were interviewed. The result of the survey suggested that 17.8 percent of South African respondents had probable anxiety. Probable anxiety was highest among the respondents aged 65 or older, the unemployed, primary school leaver, the widowed, divorced or separated, and those living in metropolitan areas. These findings confirm how exposure to adverse experiences in early childhood had a higher risk of probable depression or probable anxiety in adulthood than people who did not face adversity in childhood ^[29]. Likewise, The Stress

and Health Survey conducted between 2002 and 2004 to determine the prevalence of mental disorders found that anxiety disorders had a high lifetime prevalence of 15.8 percent, followed by mood disorders at 9.8 percent and substance use disorders at 13.4 percent. The overall prevalence of any mental health disorder was 30.3 percent. These data emphasize the need for investment in mental health care, and implementing effective mental health policies and services, considering that the prevalence of mental health disorders in South Africa is among the highest in the world, with adverse childhood experiences, socio-economic status, geographic location, age, marital status and education levels summing up as the main complex factors contributing to this endemic in South Africa ^[30, 31].

The Lowest Rate of Mental Illness

According to Dr Myuyiso Talatala of the South African Society of Psychiatrists (SOSAP), Schizophrenia affects only around 1 percent of the population. It is accounted to be one of the most severe psychiatric disorders affecting young people, with an estimate of 90 percent of those affected with the disease first showing signs at under 25 years of age, as reported by Dr. Eugen Allers ^[32]. Symptoms of this disease include delusions, hallucinations or disorganized speech, difficulty in thinking and lack of motivation. Although it is reported that early treatment may help get symptoms under control before serious complications develop, people with schizophrenia have to undergo lifelong treatment ^[33].

In an article published on addressing the Needs of People with Schizophrenia in South Africa during the COVID-19 Pandemic, the healthcare system in South Africa consists of public and private sectors. The private sectors are smaller and better funded with only 14.83 percent of South Africans benefitting from private health insurance, while the public

healthcare system funded through government allocations from National Treasury, caters for an estimated 80 percent of the population, consisting mainly of people with low or no income. The lack of resources to fund the public health sectors is due to disparity in socioeconomic equality, which reflects the legacy of the apartheid era which was characterized by discrimination and marginalization of people of color across all basic needs, including healthcare. Some of the barriers to care access for people with Schizophrenia include; lack of funds to run the service efficiently, poorly planned deinstitutionalization programs with mentally ill patients placed in the care of inappropriate facilities, insufficient supply of antipsychotic medications, and regular seeking of alternative with traditional healer over contemporary care. However, during the COVID 19 pandemic, people with schizophrenia showed a reduced level of relapse due to Government lockdown regulations such as implementation of the COVID-19 social relief grant and mandatory shelter for homeless people, family interactions imposed by “stay home” regulations improved psychosocial support and, perhaps, treatment adherence of people with Schizophrenia, and the total ban on the sale and consumption of alcohol due to lockdown restrictions ^[34].

Government Strategy to Eliminate the Mental Disorders

The elimination of mental disorders could be a complex and multifaceted challenge that requires a comprehensive approach including different methodologies at administrative, societal, and personal levels. Whereas total destruction of mental disorders may not be doable due to their multifactorial nature, governments can actualize techniques pointed at avoidance, early interventions, treatment, and support to decrease the burden of mental ailment. Here are a few key components of a legislative

procedure to address mental clutters: The Government of South Africa has recognized the significance of tending to mental health as a basic component of public health and well-being. Whereas the objective of mitigating mental disorders totally may not be attainable, the government has executed different methodologies to improve mental health and bolster for its citizens. Here are a few key components of the government's methodology.

The South African government has created a National Mental Health Approach System and Vital plan to direct mental health services and activities over the nation. This system traces needs, techniques, and activities to advance mental health, avoid mental sickness, and guarantee access to quality mental wellbeing services and treatments ^[35]. They also has prioritized the integration of mental health into essential healthcare settings to increase access to care and address mental health needs at the community level. This includes preparing essential care suppliers in mental health appraisal and treatment, as well as giving bolster and assets to essential care clinics ^[36].

The government has contributed in community-based mental wellbeing administrations to provide help and treatment for people with mental health disorders in their communities. This may incorporate community mental health clinics, mobile mental health groups, and outreach programs to underserved populaces. Moreover, they have actualized public campaigns and instructive/educational programs to diminish stigma encompassing mental ailment and advance understanding of mental wellbeing issues. These activities aim to raise knowledge about the significance of mental health, empower help-seeking behavior, and give data on accessible assets and bolster administrations ^[37].

Furthermore, the government is working to make strides to access mental health services by expanding the number of mental

health experts, extending scope for mental health medicines beneath healthcare frameworks, and diminishing obstructions to getting to care, such as long hold up times and transportation issues. They have sanctioned enactment and created approaches to bolster mental health, counting the mental health Care Act, which traces the rights of people with mental ailment and builds up guidelines for mental health services and treatments. The Government proceeds survey and upgrade approaches to address developing mental health challenges and guarantee that mental wellbeing services are adjusted with worldwide measures and best homes ^[36].

Then, the government underpins mental health research activities and advancement to progress understanding of mental disorders, create compelling medications, and upgrade the conveyance of mental health. This incorporates subsidizing research institutions, supporting collaborative research ventures, and advancing information trade between analysts, clinicians, and policymakers. They have executed suicide avoidance programs and emergency intervention administrations to supply quick bolster for people encountering mental health emergencies. This incorporates setting up suicide hotlines, preparing healthcare experts in suicide chance appraisal and intercession, and actualizing methodologies to address the social determinants of suicide ^[37].

In general, the Government of South Africa is committed to moving forward mental healthcare and help for its citizens through a comprehensive procedure that addresses avoidance, treatment, and support at the community, healthcare, and policy levels. In any case, challenges such as stigma, asset imperatives, and incongruities in access to care stay, and proceeded endeavors are required to fortify mental health frameworks and advance mental well-being for all South Africans ^[38].

New Treatment or Method for Mental Disorders

South Africa, like numerous nations, is likely to be included in continuous inquiry about and usage of inventive approaches to address mental health disorders. A few of the medications and strategies specified prior, such as psychedelic-assisted treatment, computerized therapeutics, and Tele-therapy, may too be investigated or utilized in South Africa. Given the differing populace and interesting healthcare challenges in South Africa, endeavors to create socially significant and access to mental health interventions are imperative. Community-based approaches, integration of conventional recuperating homes, and collaborations between Western and innate healing frameworks may moreover play a part in tending to mental health needs in South Africa.

There have been continuous improvements within the field of mental health treatment, counting the investigation of modern treatments and approaches. Here are a few outstanding progressions:

1. **Psychedelic-Assisted Therapy:** There's growing intrigued within utilize of psychedelics such as psilocybin (found in certain mushrooms) and MDMA (commonly known as rapture) in conjunction with psychotherapy for the treatment of different mental wellbeing conditions, counting discouragement, uneasiness; PTSD, and substance utilize clutters. Clinical trials have appeared promising outcomes, driving expanded research and investigation of these substances as potential helpful apparatuses.

2. **Digital Therapeutics and Tele-therapy:** With the headway of innovation, computerized therapeutics and Tele-therapy stages have gotten to be more predominant. These incorporate smartphone apps, online programs, and virtual reality intercessions outlined to convey evidence-based medicines for mental wellbeing conditions such as misery, uneasiness, and sleep deprivation. These stages offer more prominent availability, comfort, and versatility compared to conventional in-person treatment ^[40].
3. **Trans cranial Magnetic Stimulation (TMS):** TMS may be a non-invasive brain prompting strategy that employs attractive regions to strengthen nerve cells inside the brain. It has been FDA-approved for the treatment of disheartening that has not responded to traditional medications. Ongoing research is exploring its potential applications for other mental prosperity disorders, such as uneasiness, PTSD, and OCD.
4. **Ketamine Therapy:** Ketamine, generally utilized as an anesthetic, has shown up rapid-acting upper impacts in treatment-resistant wretchedness and self-destructive ideation. Ketamine implantation treatment and nasal sprinkle definitions have been supported by authoritative masters for the treatment of hopelessness in certain cases. Investigations are ongoing to get its long-term practicality and security.
5. **Nutritional Psychiatry:** The upcoming field of nutritional psychiatry explores the interface between food and mental prosperity. Ask almost proposes that dietary components, such as the Mediterranean check calories affluent in normal items, vegetables, aggregate grains, and slant proteins, may have a protective effect against debilitation and other mental prosperity disorders. Dietary trade and dietary supplements

are being inspected as adjunctive drugs for mental sickness [37].

6. **Mindfulness-Based Interventions:** Mindfulness-based therapies, such as mindfulness-based stress reduction (MBSR) and mindfulness-based cognitive therapy (MBCT), have picked up a reputation as adjunctive drugs for depression, uneasiness, and other mental health conditions. These trades connect mindfulness thought sharpens to progress self-awareness, emotion regulation, and quality.
7. **Art and Music Therapy:** Inventive expressions treatments, counting craftsmanship treatment, music treatment, and dance/movement treatment, utilize expressive expressions to encourage passionate mending and self-expression. These treatments have appeared to benefit people with different mental health conditions, counting PTSD, sadness, and schizophrenia.

Common Treatment Used By South Africa

Mental health treatment regularly includes a combination of approaches, counting psychotherapy, pharmaceutical, and strong administrations. Here are a few common medicines utilized for mental health problems in South Africa:

1. **Psychotherapy/Counseling:** Different shapes of psychotherapy, counting cognitive-behavioral treatment (CBT), interpersonal treatment (IPT), and psychodynamic treatment, are commonly utilized to address a run of mental health problems. Psychotherapy sessions are ordinarily conducted by prepared analysts, counselors, or social specialists and aim to assist people get it and oversee their indications, adapt with stressors, and move forward in general well-being.
2. **Medication Management:** Psychiatric medicines, such as antidepressants, antipsychotics, temperament stabilizers,

and anxiolytics, may be endorsed by therapists or other healthcare suppliers to ease side effects of mental health illness. Pharmaceutical administration includes cautious checking of pharmaceutical viability, measurement alterations, and potential side impacts ^[39].

3. **Community-Based Services:** South Africa utilizes community-based mental healthcare to provide bolster and treatment to people with mental health disorders at the nearby level. This may incorporate community mental wellbeing clinics, outreach programs, and peer support groups/teams that offer counseling, psycho instruction, and social bolster to people and families influenced by mental ailment.
4. **Hospital-Based Care:** For people with serious mental health problems or intense psychiatric emergencies, hospital-based care may be essential. Psychiatric healing centers and psychiatric units inside common clinics give serious treatment and stabilization for people in emergency, including medicine administration, psychotherapy, and steady/supportive care.
5. **Integration of Traditional Healing Practices:** Conventional healing practices, such as herbal pharmaceutical, spiritual customs, and native healing ceremonies, are regularly combined in mental health care in South Africa, especially inside rural communities. Conventional/Traditional healers, known as *sangomas* or *inyangas*, may give socially significant medications and spiritual direction for people encountering mental health challenges ^[40].
6. **Peer Support and Self-Help Groups:** Peer support networks, systems and self-help teams play a critical part in South Africa's mental wellbeing framework by giving

support and opportunities for people with mental health problems to put through with others who share comparable encounters. These teams/groups offer enthusiastic bolster, viable exhortation, and a sense of community for people looking for recuperation and wellness.

7. **Tele-therapy and Digital Mental Health Services:** With the headway of innovation, Tele-therapy stages and computerized mental healthcare are progressively utilized in South Africa to increase access to mental healthcare, especially in farther or remote communities. These stages offer online counseling, psych instruction, and self-help assets through web-based or applications.

It's imperative to note that mental wellbeing treatment in South Africa may change depending on components such as geographic area, social foundation, financial status, and accessibility of assets. Furthermore, endeavors to address mental health incongruities and advance mental well-being in South Africa may include collaborations between government organizations, healthcare suppliers, non-governmental organizations (NGOs), and community partners ^[41].

AI to Eliminate or Treat Mental Disorders

Beyond the treatment room, artificial intelligence holds the potential to address mental health on a huge scale. There has been an exponential rise in AI-powered, cognitive behavioral therapy-informed chat-bots, such as Woe-bot and Wysa. Innovative propels over the past two decades have revolutionized healthcare. We will duplicate organs and bones through 3D printing, counsel specialists on the other end of the world by means of progressed communication innovation, and screen our caloric admissions and rest cycles through mobile apps. Due to these advances, physical ailments have customarily been more likely to get

treatment compared with mental disorders, both locally and universally ^[42].

In any case, the most recent breakthroughs within the field of artificial intelligence (AI) guarantee critical changes in mental healthcare. Whereas a few conspicuous divisions of society are prepared to completely grasp the potential of AI, how will it cruel for the field of mental health, will AI supplant current mental health specialists completely, or just sufficient to fill the appalling and expanding mental health issues, in spite of clear concerns, AI applications within the mental health field are relentlessly expanding all over the world. Mental ailment shows extraordinarily in each person and is best clarified comprehensively by our biopsychosocial profile. The pathophysiology of mental sickness is complex and changed, and our current understanding of the effect of organic, social, and mental intuitiveness is constrained.

Be that as it may, there's proof that AI can be utilized to create progressed demonstrative screening instruments and define risk models to determine an individual's chance of creating mental ailment. Eventually, AI and profound learning can be utilized to recognize which treatment methods work best for which combination of indications. A future where mental ailment is superior overseen sounds awesome — particularly in today's climate where most people with mental ailment do not get any treatment. In South Africa, as it were one in 10 people living with a mental sickness get the care they require. The request for better mental health administrations has expanded ^[42].

More vitally, assembly these requests have ended up progressively troublesome and exorbitant due to a need of resources. Within the South African public sector, there are 0.97 clinicians and 0.31 psychiatrists per 100,000 individuals. In concerning ourselves with robots taking over, there's one

noteworthy boundary to the application and utilization of AI: access to technology. Access to computers, the web, smart devices/gadgets, and tablets isn't present in all parts of South Africa. In devastated communities over South Africa, access to technology is questionable ^[42].

Considering that smart devices/gadgets are regularly shared, the guarantee offered by AI-powered mental health chat-bots is compromised by potential breaches of privacy. We know that destitution could be a key social driver of mental sickness, and the fabric hardship related with poverty may make AI blocked off to those that require options to mental healthcare the foremost. It is not cruel that AI does not have a place in mental healthcare in South Africa and other resource-limited settings. In the soul of innovation, we ought to be imaginative in advancing access to AI-informed mental healthcare.

Recommendation

In spite of the fact that South Africa has made basic steps to reinforce its mental health framework counting changing the Mental Healthcare Act 17 of 2002 (MHCA), creating the South African National Mental Health Policy Framework (MHPF) and Vital plan and a move towards giving impartial healthcare administrations encapsulated within the as however unimplemented National Health Insurance Policy, there stay considerable challenges with the implementation of these policies. Typically, especially around the execution of district-level coordinated benefit and community mental health services at the common level where benefit conveyance takes place. In case South Africa is to meet the destinations of the Mental Health Policy Framework in line with the WHO suggestions, the improvement, satisfactory resourcing and scaling up of community-based services is needed. Specific consideration is required to guarantee the requirements of defenseless mental

health benefit client populaces, such as the elderly, children and uncommon populaces like prisoners and displaced people are met ^[43].

A few particular recommendations can be made to reinforce the mental healthcare conveyance framework in South Africa and make more productive utilization of the constrained accessible assets. At community level developments in preparing community health specialists to identify and elude individuals living with mental health conditions within the community. At the primary care level, accessible essential care guidelines on mental health ought to be coordinated into schedule nurse-led services, counseling psychologists have to be placed inside within the public sector to extend access to persons and more psychotherapy at primary care level. At district and regional health care level, ventures are required in infrastructure for inpatient mental health units, especially for emergency admissions and treatments related to psychosis and self-harm. At tertiary level master units ought to scale down long-term custodial care as assets are moved to community, primary care and hospital levels ^[43].

The advancement of solid advocacy movements driven by people with mental disabilities. More than once, it has appeared that “user-led” promotion around issues of legitimate change, services development, and societal change has been most compelling in finishing segregation and stigmatization and accomplishing human rights for particular minority communities. Administrative change to annul discrimination, ban manhandle/ exploitation and abuse, and ensure individual opportunity, nobility, and independence ^[44]. Incorporation of mental health on the plan of development program and targets such as the Millennium Development Goals (MDGs). At the global, national, and regional levels, mental inability rights and

“needs” must be included in programs pointed at accomplishing development targets and reducing destitution and inequality. Removal of barriers to get to health services experienced by people with mental incapacities. Lawful changes are required to evacuate monetary barriers to access for those with mental incapacities. Elimination of barriers to get too social, family-related, settlement, educational, occupational and recreational benefits, and full interest for people with mental disabilities ^[44].

Essential to the success of these suggestions may be a stronger administration framework for mental health in South Africa. Right now, in spite of the great desires of policy and legislation, mental health services remain dis-empowered and do not have the imperative budget and decision-making specialist inside the provincial and national health sector. The saying “nothing about us without us” remains central to all of these recommendations, and individuals with experience must be counseled and included within the planning and conveyance of scaled up mental health services in South Africa ^[43].

Individuals with diverse needs are the center of mental health promotion, the prevention of disorders/illness, and treatment and recovery. Regardless of the complexity of the method and the numerous impediments displayed, changes within the mental health, well-being, working and quality of life of individuals with mental disorders give more than satisfactory inspiration for the improvement and execution of mental health policies, plans and programs ^[45].

Conclusion

South Africa has “nailed its colors to the mast” through enacting legislation and signing international policies pointed at maintaining and guaranteeing the human rights of individuals with mental disorders/incapacity. In spite of this, that country proceeds to fall far short of meeting the needs of its citizens

influenced by mental ailment. The mental health gap is significant in South Africa, in spite of a dynamic administration that has championed the rights of other impeded people in society. While laudable, South Africa's endeavors to achieve formal equality ought to not stand alone, without comparative promotion centered on the accomplishment of substantive correspondence for people with mental illness. Genuine life components such as poverty, absence of education, salary disparity, homelessness, war, displacement and discrimination based The Equal Rights Review, Vol. Six (2011) 110 on ethnicity, race, and sex, social exclusion, stigma/shame, and abuse all affect the rationally sick individual's capacity to get to services and realize full personhood inside their communities.

The South African health care system is largely characterized by being organized predominantly to provide acute care as well as inequities between private and public health care that can be attributed to an-apartheid past. The disease burden of South Africa is characterized by the clashing chronic disease epidemics that the health care system needs to respond to through reorganizing care for integrated chronic disease management. Multiple factors are attributed to African and South Africa's large mental illness treatment gap, including low priority at a policy level, lack of skilled personnel, limited financing, and poor allocation of financial resources towards institutional care. Institutional mental health stigma plays a role in the low priority of mental health in resource allocation, contributing to limited progress towards universal access to mental health services globally.

Research findings on the epidemiology of major depression in South Africa revealed that females experience a significantly higher rate than males, and low level of education contributes to increased prevalence of depression.

The Government of South Africa has recognized the significance of tending to mental health as a basic component of public health and well-being. Whereas the objective of mitigating mental disorders totally may not be attainable, the government has executed different methodologies to improve mental health and bolster for its citizens. In general, the Government of South Africa is committed to moving forward mental healthcare and help for its citizens through a comprehensive procedure that addresses prevention, treatment, and support at the community, healthcare, and policy levels.

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7 Global Regulation and Technology for Elimination

Ida Susanti

Global Regulation

The global burden of mental disorders, encompassing self-harm and common mental disorders like depression, anxiety disorders, schizophrenia, and substance use disorders, is indeed escalating worldwide. Research spanning from 1990 to 2019 highlights a significant increase in the burden of mental illnesses, with a particular focus on depressive disorders showing a rise in incidence cases by 159.3 percent ^[1]. Furthermore, the economic burden associated with common mental health disorders is substantial, estimated at 16 trillion by 2030 ^[2]. The correlation between national development and the burden of mental disorders indicates that higher development levels are linked to increased Years Lived with Disability (YLDs) due to mental disorders, emphasizing the global nature of this issue ^[3] ^[4] ^[5]. Efforts in global mental health are crucial to address this growing burden and bridge the gap between countries, especially in developing nations. According to findings from the Global Burden of Disease Study by the Institute for Health Metrics and Evaluation (IHME), there was a growth in disability-adjusted life years (DALYs) globally during the period from 1990 to 2021, with an increase of 17.8 percent ^[6].

Geopolitical determinants such as climate changes, urbanization, pollution, migration, poverty, and governance play a significant role in shaping mental health needs and services worldwide. Additionally, the lack of resources, low budgets for mental health in low and middle-income countries, underutilization of services, and the stigma associated with

mental illnesses contribute to the burden of mental disorders global ^[7].

The Comprehensive Mental Health Action Plan 2013-2030, launched by the World Health Organization (WHO), was endorsed during the 66th World Health Assembly, underscoring the critical importance of effective governance and strong leadership in crafting policies and strategies to address mental health issues ^[8]. A mental health policy, as defined by governments, articulates a vision along with a set of values, principles, and objectives, alongside a comprehensive plan of action aimed at enhancing the mental well-being of a populace. This policy ought to include detailed strategies and activities, accompanied by clear timelines and the necessary resources for implementation. Mental health policies may either stand alone or be integrated into broader health or disability frameworks. They are deemed legitimate if they have received approval or publication by the Ministry of Health, other relevant ministries, or the nation's legislative body.^[9] According to WHO, mental illnesses contribute to one-sixth of years spent living with disabilities. Individuals facing severe mental health challenges typically experience a lifespan 10 to 20 years shorter than the average population. Struggling with a mental health disorder elevate the likelihood of suicide and continuous violations of an individual's human rights.

Furthermore, with productivity declines far surpassing the direct expenses associated with care have substantial economic impact. In some regions, the level of disability-adjusted life years (DALYs) related to mental health varies with different control and regulation, for example in the Americas region, Pan American Health Organization (PAHO) states that DALYs due to mental disorders increased from 16.9 million years in 2000 to 20.6 million years in 2019 mental disorders comprise a set of more specific disorders whose health burden varies by subregion

and country depending on socio-economic factors and the performance of health systems, particularly mental health services ^[10]. In this region, only a few countries have national legislation with explicit protections related to mental health or the human rights and fundamental freedoms of individuals with mental disorders or disabilities ^[10].

Across the South East Asia Region, the mental health action plan initiated by the World Health Organization (WHO) is implemented differently by each of its 11 member countries. In this region, about 13.2 percent of the population, meaning 1 in 7 (approximately 260 million people), live with a mental health condition ^[11]. Treatment gaps for mental health conditions in many Member States of the Region are as high as 90 percent. Services are mainly concentrated in urban areas and mental health institutions. Myths and associated stigma and discrimination are widespread, and a high proportion of people seek help outside the health sector ^[11]. In Indonesia, based on Basic Health Research (Riskesdas) in 2018 stated that 6.2 percent of the population aged 15-24 years experienced depression and on the 2023 Indonesian Health Survey (SKI) which was 2 percent, although there was a decrease but it remained an essential mental health problem because the rate of suicidal ideation in depressed adolescents reached 61 percent ^[12].

Indonesia regulations on mental health are contained in Law no. 18 of 2014 which regulates mental health broadly. As for conditions that require more specific treatment related to the presence of socio-cultural elements derived in the Regulation of the Minister of Health number 54 of 2017 concerning the prevention of “pasung” in people with mental disorders (ODGJ). The Ministry of Health also issued Guidelines for Mental Health Services in First Level Health facilities. However, efforts to implement mental health policies are still constrained by the

fulfillment of health human resources and access to services. WHO data in Addressing Mental Health in Indonesia 2022 stated that Indonesia only had 0,4 Psychiatrists, 0,2 Psychologists and 2.3 mental health nurses per 100,000 population. Mental health services are available from the primary level (primary health centers) and secondary level (district and provincial general hospitals) ^[13]. The Community Mental Health Program at the primary level is overseen by both the Ministry of Health (MoH) and District Health Offices. They are responsible for training health providers, stakeholders, and community volunteers in community mental health practices ^[13].

Mental health intervention landscape

Several physical illnesses have correlation with mental illness. Most common cardiovascular diseases, including hypertension, coronary artery disease, and heart failure, are often linked with depression and anxiety. Mental health conditions can exacerbate cardiovascular problems, and vice versa. Stress and depression can lead to increased inflammation and blood pressure, negatively impacting heart health. Conversely, chronic illness and the lifestyle limitations it imposes can lead to depression and anxiety ^[14]. There are findings indicating an increase in autoimmune diseases, with stress being identified as one of the contributing factors ^[15]. In many cases, patients may be unaware of their condition and refuse to seek professional help, due to factors such as lack of insight or anosognosia, denial, stigma, lower education and economically incapable. To address this, effective management and treatment approaches are needed such as integrated care, psychotherapy, medication, lifestyle changes, support groups and education awareness.

Psychologists and psychiatrists diagnose mental health problems through a comprehensive and systematic process that includes clinical assessment, patient history, interviews, medical

and physical examination, standardized diagnostic criteria using DSM-5 and ICD-10 and other tools. However, recently with help of technology, mental health can be diagnosing base on change of biological indicators that might contribute to psychiatric symptoms, such as blood tests to check for issues such as thyroid dysfunction, vitamin deficiencies, or infections, Neuroimaging with MRI or CT scans to rule out neurological conditions, Electroencephalograph (EEG) detect abnormal brain wave activity that could indicate epilepsy or other neurological disorders ^[16]. In the future, AI may change conventional examinations, there has been research done using AI to diagnose mental illness from eye movements ^[17].

Pharmacological and psychotherapy Interventions

The World Health Organization (WHO) reviewed evidence for effective treatment of mental disorders, and concluded that a combined psychotherapy and pharmacological approach performed significantly better than each intervention alone ^[18]. In this case, WHO has created a special guideline for pharmacological treatment of mental disorders in primary health care, 2009 which provide simple, adequate and evidence-based information to health care professionals in primary health care especially in low- and middle-income countries to be able to provide pharmacological treatment to persons with mental disorders ^[19]. It Contains prescribing followed medicines used in psychotic disorders; depressive disorders; bipolar disorders; generalized anxiety and sleep disorders; obsessive-compulsive disorders and panic attacks; and alcohol and opioid dependence. They should be accessible within effective mental health delivery systems, consistently available, in sufficient quantities, in the correct dosage forms, with guaranteed quality and sufficient information, and at a price that both individuals and the

community can afford. Essential psychotropic medicines enable the treatment of mental disorder symptoms, shorten the duration of many conditions, reduce disability, and prevent relapse.

In the WHO Model List of Essential Medicines (EML) the treatment and control of mental disorders selected drugs are chlorpromazine, fluphenazine, haloperidol (medicines used in psychotic disorders); amitriptyline, fluoxetine (medicines used in depressive disorders); carbamazepine, lithium carbonate, valproic acid (medicines used in bipolar disorders); diazepam (medicines used in generalized anxiety and sleep disorders); clomipramine (medicines used in obsessive-compulsive disorders and panic attacks); methadone and buprenorphine (medicines used for substance dependence programs).[20] This treatment should be delivered by trained health personnel to use them in treating people with mental disorders. Improving access to essential psychotropic medicines is a key component in strengthening access to effective mental health care services.

Psychotherapeutic approaches are extensively employed for the treatment and prevention of various psychiatric conditions. These interventions are common for depression, psychosocial difficulties, interpersonal problems, and intrapsychic conflicts. Depression-focused psychotherapy is typically considered the initial treatment method for mild to moderate Major Depressive Disorder (MDD). Based on significant clinical evidence, two specific psychotherapeutic methods recommended as an effective treatment for MDD are: Cognitive-behavioral therapy (CBT) and interpersonal therapy (IPT). CBT is a type of talk therapy that helps people change their negative patterns of thinking and behaving. It is commonly used to treat depression and other mental health conditions by identifying patient negative thoughts and behaviors, challenge negative thoughts by considering alternatives of positive perspective, replace negative thoughts with more realistic and

positive ones and change behaviors with developing healthier habits and coping strategies. Meanwhile, IPT is a type of therapy that focuses on improving your relationships and social interactions to help alleviate symptoms of depression. It is based on the idea that personal relationships play a crucial role in mental health. IPT addresses the social context of depression. Improving your relationships and social support network can provide you with emotional support, reduce stress, and enhance your ability to cope with life's challenges. Other recommended psychotherapy are supportive therapy (ST) and psychoeducational intervention (PEI), however, there is insufficient data to strengthen it. In more cases of severe depression, ST and PEI are used only to augment pharmacological treatments.

Technology advancement on mental health

The history of mental health treatment has evolved significantly over time. In the Middle Ages, individuals with mental disorders were often believed to be influenced by supernatural forces or demonic possession. Consequently, treatments during this era included exorcisms, prayers, and various rituals intended to expel these perceived evil influences. The Evolution of Mental Health Treatment in the 18th-19th Century shifted towards more humane practices, with a strong emphasis on rehabilitation. This period marked the beginning of a more compassionate approach to mental health care, focusing on improving the well-being and recovery of individuals through more ethical and supportive treatment methods. In the mid-20th century, psychotropic medication was discovered and the development of psychotropic medications revolutionized mental health treatment and starting the idea to transitioning mental health care from psychiatric hospitals to

community-based settings as to move away from the often isolated and institutional environments of psychiatric hospitals, promoting instead the integration of individuals with mental health conditions into their communities. By fostering community-based care, these movements aimed to enhance the quality of life for patients, provide more personalized and accessible treatment, and reduce the social stigma associated with mental illness. This approach emphasized the importance of community support and the development of local resources to meet the needs of individuals with mental health conditions. In recent years, the rapid advancements in science and technology of mental illness have significantly improved. Neuroscience and brain imaging technologies, for instance, have provided detailed insights into the biological foundations of mental disorders. These technological developments offer robust evidence that supports various treatment approaches. Among these, cognitive-behavioral therapy (CBT) stands out as an evidence-based psychotherapy that has gained widespread recognition and use. The integration of biological evidence with therapeutic practices has paved the way for more effective and targeted treatments for mental health conditions.

The diagnosis of mental disorders traditionally relies on clinical interviews, psychological assessments, and self-reported questionnaires. However, advancements in medical technology have introduced various medical device modalities that can aid in the objective assessment and diagnosis of mental health conditions. Several devices that provide valuable insights into the biological and physiological aspects of mental disorders are as follow:

1. Neuroimaging Techniques

- **Magnetic Resonance Imaging (MRI):** provides detailed images of brain structures. Functional MRI (fMRI)

measures brain activity by detecting changes in blood flow, used to identify structural abnormalities and monitor brain activity patterns associated with mental disorders such as depression, schizophrenia, and bipolar disorder.

- **Positron Emission Tomography (PET):** measure metabolic activity in the brain by detecting the distribution of radioactive tracers, useful in studying neurotransmitter systems and identifying abnormalities in brain metabolism related to conditions like Alzheimer's disease and major depressive disorder
- 2. **Electroencephalography (EEG):** measures electrical activity in the brain using electrodes placed on the scalp, used to help in diagnosing conditions such as epilepsy, sleep disorders, and some psychiatric disorders by identifying irregular brain wave patterns.
- 3. **Magnetoencephalography (MEG):** function to record magnetic fields produced by neuronal activity in the brain and used to pinpoint areas of brain activity, particularly useful in presurgical mapping for epilepsy and in research on cognitive and sensory processes.
- 4. **Genetic Testing:** involves analyzing DNA to identify genetic variations that may be linked to mental disorders, use to help in understanding the genetic predispositions to conditions such as schizophrenia, bipolar disorder, and autism spectrum disorders.
- 5. **Neurocognitive Testing Devices:** function to assess cognitive functions such as memory, attention, and executive function through computerized tests. It is used to diagnose cognitive impairments related to conditions like ADHD, dementia, and brain injuries.

In the realm of mental health treatment, various innovative technologies offer alternative or supplementary approaches to conventional methods like medication and psychotherapy used in the treatment of mental disorders, namely:

1. **Electroconvulsive therapy (ECT)** is the oldest and most effective nonpharmacological therapies currently available for psychiatric disease. It involves the administration of controlled electrical currents to the brain, inducing brief seizures. and performed under general anesthesia, electrodes are placed either unilaterally or bilaterally with electric pulses of 500–800 mA, 0.3–2.0 mS duration at 20–120 Hz for 0.5–8 s. Muscle movement and EEG activity are monitored. ECT is frequently associated with retrograde and anterograde amnesia, and relapse after a successful ECT course is a major limitation of the therapy. It is primarily used for treatment-resistant depression, severe mania, and certain types of schizophrenia. ECT is often considered when other treatments have failed. ECT is effective for severe depression, with rapid improvement in symptoms often seen after a few sessions ^[21].
2. **Transcranial Magnetic Stimulation (TMS):** uses magnetic fields to stimulate nerve cells in the brain. It is primarily used to treat major depressive disorder, particularly in patients who have not responded to antidepressants. TMS has been shown to improve depressive symptoms with a non-invasive approach and fewer side effects compared to ECT.
3. **Deep Brain Stimulation (DBS):** Function to deliver electrical impulses to regulate abnormal brain activity using the implantation of electrodes in specific areas of the brain. Initially used for movement disorders like Parkinson's disease, DBS is now being explored for treatment-resistant depression and obsessive-compulsive disorder (OCD).

4. **Vagus Nerve Stimulation (VNS):** the use of a device implanted under the skin that sends electrical pulses to the vagus nerve, used for treatment-resistant depression and epilepsy.
5. **Wearable Technology and Mobile Apps:** Wearable devices and mobile apps monitor physiological parameters and provide behavioral interventions. Used for ongoing monitoring and intervention in conditions such as anxiety, depression, and PTSD.

In addition to diagnosis and treatment, the development of communication technology that brings patients and doctors closer virtually is also one of the solutions related to distance, time and opportunity. Since the beginning of the pandemic, the use of telehealth has increased substantially (American Psychiatric Association, 2020). There was widespread use of technology, with greater than 69 percent of organizations reporting using telephone or video for most services [22]. Teletherapy and telepsychiatry are mental telehealth services that use videotelephony (like Zoom), phone calls or other messaging systems to facilitate communication between mental health professionals and their patients. (Forbes) Teletherapy, also known as tele-counseling or online therapy, involves delivering mental health counseling and psychotherapy services remotely, typically via video conferencing platforms or phone calls, offering flexible scheduling option, and provides a confidential space for therapy sessions, promoting a sense of security and anonymity. Telepsychiatry involves the remote provision of Psychiatric evaluations, consultations, and medication management services using telecommunication technologies with benefits on access to specialists without the need to travel and enhancing continuity of care [22].

Innovative Approaches in Mental Health

There have been significant advancements in technologies aimed at addressing the challenges of mental illness. These innovations of Artificial Intelligence (AI) offer new avenues for diagnosis, treatment, and monitoring, ultimately improving the quality of care for individuals with mental health conditions. As technology advances, these models and more innovative technology are likely to become even more integral to mental health care, improving patient outcomes and expanding the possibilities for effective intervention. Continued research and clinical trials will further refine these technologies and their applications in mental health treatment. AI is the trend today and with reliable capabilities and better speed and accuracy Artificial Intelligence has great potential to lead to accelerated, accurate, and more objective diagnoses of mental health disorders [23]. However, AI still requires a lot of supervision if it is to be used for services in mental health, since AI's have potential for error. Some of the shortcomings owned by AI are data security risks, can and accuracy, no empathy and reduced human intervention, and challenges to regulations and ethics.

Artificial Intelligence (AI) is the simulation of human intelligence in machines that are designed to think like humans and problem-solving capability. (IBM) AI works through the integration of several techniques like machine learning from large data set, deep learning usually for image and speech recognition, Neural network as system mimics the human brain Neurons, Natural language Processing (NLP) is a branch of AI that helps machines understand, interpret, and respond to human language, and computer vision that teaching machines to make decision based on visual data. The key components of AI are data (big data), algorithm, computing power, model training and inference is the phase when AI can make decisions based on data

in the real world. Hence, the more data that is inputted into the AI's memory, the more accurate and reliable the decision or information ^[24]. On the other hand, AI functions as a double-edged sword, bringing limitations that require careful attention. AI raises concerns about patient privacy and data security and addressing biases in AI algorithms is crucial for ethical practices ^[25]. One of AI failures have occurred in media such as the Tay incident, when Microsoft's chatbot Tay released in 2016 learned from interactions on Twitter and removed within 24 hours due to multiple racist, sexist, and antisemitic tweets generated by the bot ^[26]. AI can also do some damage to humans such as providing biased information and also doing inappropriate things if the data used for learning is bad data, AI has limited Understanding of Complex Cases and there can also be misinterpretation of symptoms.

Research on AI for mental health has also provided many good and promising results, such as Woebot who uses the CBT method for therapy of depression and anxiety symptoms ^[27], some study implies that integrating VR technology into psychiatric treatment plans can lead to enduring positive outcomes for patients, enhancing the overall effectiveness and long-term success of therapeutic interventions, however, its use still requires equipment and training for operators ^[28]. The advantages of using AI for mental health can provide broad benefits such as easier access to doctors, rapid initial response through analysis and prediction, personalized treatment tailored to the patient's needs, making it more effective, conducting analysis, providing continuous support, and reducing stigma in society ^[29].

AI provides analytical results and covers all areas of mental health services, namely screening, diagnosis, treatment planning, intervention delivery, outcome prediction and population level

mental health management AI can also reduce stigma by offering anonymity and privacy, reducing the stigma associated with seeking mental health treatment and encouraging more people to seek help. While specific cases of mistreatment or negative consequences related to AI and mental health may not be widely reported, however This should be addressed before using AI for the implementation of mental health issues. Based on FDA guidelines related to AI based tool in healthcare, regulatory framework plays a critical role in safeguarding patient welfare, promoting innovation, and maintaining public trust in healthcare technology, which are addressing regulation based on risk approach, regulatory pathways, quality system regulator, clinical evaluation, transparency and explainability, post-market surveillance ^[30]. Developers need to engage with regulators from early development to navigate regulatory requirements effectively and bring safe and effective products to market ^[30].

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8 Future potential of AI support for Mental Health

Alexey Koushner

Artificial Intelligence rapid advancements

Fast pace of technology development creates wide opportunities for AI implementation for new types of data collection and analysis, new forms of use and new types of AI systems. Clinical decision support systems (CDSS) were historically the magistral direction of AI applications in healthcare, sometimes with controversial views on its clinical efficiency. Systematic review conducted in 2005 identified some improvements both for doctors' practice, and for patients' outcomes ^[1]. A systematic review conducted in 2014 did not identify significant influence on mortality risks even if CDSS was integrated with electronic health records ^[2].

Recent meta-review of advanced AI systems, based on conversational agents and natural-language processing technology and large language models, demonstrates that there are therapeutic effects, but long-term efficiency is still the subject for further investigations ^[3]. Further developments of AI aim to play a positive role for Mental Health Spectrum, including neurodegenerative disorders, intellectual disability and seizures ^[4]. And the very promising AI impact on Mental Health of large cohorts of people could be associated with friendly spaces and environments, designed and managed sustainably to prevent and mitigate potential risks ^[5]. The current frontier for AI developers is the fusion of multimodal data and various types of information to gather as much data as possible and extract robust evidence for Mental Health Spectrum analysis and differential diagnostics ^[6]. And ethical considerations regarding data privacy and algorithm

transparency emerged as critical challenges for further AI developments for Mental Health applications. ^[7].

AI in Mental Health now is developing extremely fast outside the radar of medical regulations. There are fast-growing markets for AI in the fields of wellness, wellbeing, lifestyle management, fitness, nutrition and sleep management, self-monitoring wearables, intellectual training gadgets and games – endless continuum of products, services and solutions. And most of these things are not related to healthcare services and clinical practices. Hopefully it is the era of initiative search of balances between speed of innovation, flexibility, ethics, and regulatory clearance. And, probably, this era will lead us to up to higher levels of AI robustness, reliability, explainability and usability.

Potential for wide implementations of AI for Mental Health

The current level of the medical infrastructure and healthcare system development could be assisted by AI-services in terms of wide screening and non-budgetary support by private healthcare services. Mental Health spectrum, especially dementia, not diagnosed and not covered by governmental healthcare in full-scale coverage of population. For example, there are up to 10 thousands alive patients with clinically diagnosed Alzheimer Disease in Russia, but the real number of cases simultaneously represented in the overall population is close to 1,5 million people ^[8].

Extremely low level of clinical diagnostics and respectively curation could be, in some ways, compensated by integrative support for patients in difficult mental health condition (such as precisely orchestrated sensory integration, cognitive and emotional training, planned diet, physical activity and sleeping regime, managed recreational and balneology factors intake).

In cases of not-diagnosed mental health spectrum, AI-

services could provide much more capacity for autonomous integrated interdisciplinary support in Confident-Concierge-Consigliore Explainable-Autonomous-Artificial-Intelligence format. Where Confident is about multidisciplinary search, reference and information gist support for queries from the person, relatives, supporting professionals and paramedics involved; Concierge is about scheduling and routine activities coordination; and Consigliore is about explainable general transdisciplinary roadmap of curation what-If modelling and advice accordingly.

Longevity as the next big market of AI-assisted Mental Health

When we consider the global population as a coexistence of ~ 400 million clinical patients in ~ 8 '000 million people, we address healthcare services to some 5 percent of the global population. But clinical cases – being diagnosed and curated – are the small part of the target audience for prevention, support, and adaptation, especially when we consider Mental Health.

Existing classifications, clinical recommendations and operational routines traditionally focused on pathology. Medical services and healthcare infrastructures designed and established to work with nosologically described units, and various scientific domains of illness, disease or disability. And modern medicine has made great advancements in this. But the next big challenge is to make healthy people stay healthy enough for as long as possible, including mental health, intellectual capability and creativity potential.

The endless challenge for healthcare systems is prevention – making healthy people capable of staying healthy as long as possible. And AI is the next big step of progress in this field. AI assistants, robots, intellectual algorithms and workflows already

influence our consumer behavior, media consumption, ways of perception and communication.

Inside the global population of more than 8 '000 million people, we can see a very specific cohort of health-conscious people, actively involved in healthy lifestyles, wellness, wellbeing, preventative practices, sustainable behavior and risk-avoidant nutrition practices with strong attitude to mental hygiene and healthy communications practices. This cohort is disseminated and pervasive for various ages, regions, gender and income groups or classifications. We could expect this cohort to equal more than 50 percent of the overall population, with two guesstimates as statistical peaks around 15-35 and 60-80 by age. We can name this cohort “Longocracy” – people who take care, practice self-discipline, and make efforts to stay healthy and live longer. Mental Health is the crucially important aspect of such self-motivation. And AI-services already provide endless possibilities for monitoring, check-ups, health training and traction for such types of persons (even if they are not clinically treated as patients).

New big market of Mental Health for mentally healthy people (or Mental Longevity for “Longocracy”) will integrate prevention, wellness, recreation, personalized food and beauty services, smart wear, and sleep management products. And all these longevity supporting components will be information-intensive and AI-driven. Even more, we already see early signs of an integrated approach to pro-health living spaces and longevity-friendly environments. And these spaces and environments are pervasively intellectual, even more – cyber-physically integrated (with video-analytics, biometry, sensors, robotics, intellectual climate systems, light, energy, security, and logistics infrastructures).

Conclusion

Today, the main advantage of AI services is real-time information flows acquisition, multimodal data fusion and what-if modeling for screening, planning, curation, and prevention activities.

Potentially, with further AI advancements, multidisciplinary teams of doctors could be co-piloted and contextually supported by pervasive AI. When we consider curation of certain patients, or pharmacoeconomic analysis of specific drugs, retrospective cohort review of the regional population, or longitudinal studies for fundamental medical research, we face many tasks already partially delegated to AI in some ways (radiology information analysis, laboratory data processing, clinical cases review, training for doctors and monitoring of patients).

In the foreseeable future, we consider AI-support for healthy life and Longevity, as integral, transdisciplinary and oriented on all aspects of health (social, physical, mental and intellectual), with the focus of AI-products and AI-infrastructures on the whole Mental Health Spectrum, on granular and precise analysis and developing new approaches for differential diagnostics and precise curation, abilitation, metaphylactics and prevention.

Tasks and Discussions

Discussion Questions (Make groups consisting of 2-3 people and discuss the questions)

1. What is the right balance between the art of doctors and computation power of Artificial Intelligence (AI) and robotic systems empowered by AI? Why?
2. What new, unique or original information could be collected, analyzed and systematically used for monitoring and curation

of the Mental Health Spectrum?

3. Do you agree with the statement: “AI will not outperform doctors, but doctors with AI will outperform doctors without AI”?
4. How to balance new information from scientific discoveries and clinical studies from the one hand, and old datasets, already used to train AI from the other hand?
5. What type of AI use is more effective – individual (doctor + copilot AI) or collective (interdisciplinary teams + AI)? Why?
6. Who will benefit more from AI implementation in healthcare – professional doctors with great experience and knowledge, or young doctors with energy and enthusiasm? Why?
7. What unexpected benefits and opportunities will bring AI to healthcare, prevention, longevity? Create the list.
8. What unexpected risks and contradictions will bring AI to medical insurance, healthcare regulations, professional requirements for doctors? Create the list.
9. How will the fast speed of AI progress affect medical education? Who will benefit more from AI spreading – patients or healthy people? Why?
10. Do you agree with the idea that people will intensively use AI support and follow prescribed recommendations to stay healthy and live longer? Why?
11. What is more important – to implement AI for individual care (smart wearables, smart advisors), or create healthy and sustainable environments (smart homes, smart cities) supported by AI?
12. Is it possible to improve mental capacity and intellectual capabilities with AI support? Do you see any hidden risks and drawbacks?
13. If AI will help to diagnose much more Mental Illness, more granularly and precisely, what types of resources will be required for healthcare system advancements?

14. Could intensive use of AI in some way stimulate new disorders and pathologies of the Mental Health Spectrum? Why?
15. Do you agree with the idea that AI could be of help to identify and analyze mental health of working teams, social groups and population as a whole?
16. What type of AI progress is more acceptable for you – free of any limits and boundaries, or strict standards and regulations?
17. Could you imagine a situation when doctors will be engaged in re-training, abilitation and curation of AI-systems to make it more efficient and effective, and more mentally healthy?
18. Do we need any Mental Health sanity requirements for AI design and implementation?
19. If AI could provide clear information about its sensory perception, memory status, logical reasoning and results of automated decisions, would it be relevant to AI to consider it as the subject of Mental Health monitoring and analysis?

Answers

1–20 are discussion questions; thus, the answers are dependent on group point of views.

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9 Cases and Examination for Mental Illness

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Case 1 – 55 are adapted from the book *“100 cases in psychiatry”* by Barry Wright, Subodh Dave, and Nisha Dogra, ^[1].

CASE 1

(History, how can you assess mental state?)

A 42-year-old woman presents herself at the hospital for a laparoscopic cholecystectomy. The attending physician harbors apprehensions regarding her mental well-being. There are lingering doubts pertaining to her capacity to endure the surgical procedure and subsequent convalescence. Consequently, the doctor initiates an inquiry into her psychiatric history to ascertain her overall psychological health and resilience in managing the exigencies of the impending operation and postoperative recuperation.

(Question)

In addition to historical data, a comprehensive assessment encompassing psychological, emotional, and cognitive domains would be instrumental in gauging the mental health status of this woman prior to making informed decisions regarding surgical intervention or the necessity of psychiatric evaluation. Such an assessment might involve exploring her current psychological functioning, including any symptoms of mood disorders, anxiety, or psychosis, as well as assessing her cognitive capacities, such as attention, memory, and executive functioning. Additionally, an evaluation of her emotional state and interpersonal functioning could provide valuable insights into her overall

mental well-being and readiness for surgical procedures. By conducting a thorough assessment across these multifaceted dimensions, clinicians can better ascertain the woman's mental health status and determine the most appropriate course of action moving forward.

(Answer)

The mental state examination serves as the psychological counterpart to the physical examination in medical or surgical practice, albeit focusing on a distinct system—the cognitive, emotional, and behavioral facets of an individual's mental health. This examination unfolds through astute observation and systematic probing inquiries tailored to uncover psychopathological indicators. Its structured nature adheres to a predefined procedure, meticulously integrated with the patient's medical history and diagnostic investigations. By amalgamating these components, the mental state examination enriches the formulation process, which serves as a condensed synthesis of the individual's mental health challenges and their interconnectedness with various life domains. Central to this formulation is the diagnosis, potentially employing a multi-axial framework for comprehensive diagnostic comprehension. Drawing upon information gleaned from the patient's history and the mental state examination, the formulation encapsulates the three pivotal Ps: predisposing factors, precipitating factors, and perpetuating factors, thus furnishing a nuanced understanding of the individual's psychological landscape. Key components typically encompass:

- **Appearance:** Upon assessing this woman's appearance, her hygiene appears adequate, with well-groomed hair and attire that appears neat and appropriate. There are no overt signs of neglect, and her clothing does not suggest affiliation with any

specific subcultural groups. However, her meticulous attention to detail in her appearance may hint at possible traits of perfectionism. There are no indications of grandiosity in her demeanor.

- Behavior: Throughout the observation period, the woman demonstrates a calm and composed demeanor, exhibiting appropriate rapport and empathy. Her movements are neither excessively slow nor rapid, suggesting a normative psychomotor tempo. She appears neither agitated nor displaying signs of psychomotor retardation. There are no evident invasions of personal space or marked impulsivity. However, she exhibits a tendency to monitor her surroundings, which may be indicative of heightened vigilance or anxiety.
- Speech: The woman's speech is characterized by a moderate volume and a coherent flow, with appropriate pitch and prosody. The content of her speech appears relevant and coherent, without any notable flight of ideas or pressured speech indicative of mania. There are no instances of formal thought disorder, and she provides adequate responses to questions posed.
- Mood: Subjectively, the woman describes her mood as stable, with no overt indications of significant distress or elation. This description aligns with the observed demeanor in the room, which appears congruent with her self-report.
- Thoughts: Upon assessment of thought content, there are no apparent signs of rumination or intrusive thoughts. Her thought processes appear logical and coherent, without evidence of racing thoughts characteristic of mania or excessively negative thoughts indicative of depression. There are no observable delusions or evidence of thought interference.

- Perception: There are no apparent perceptual disturbances observed or reported by the woman. She does not exhibit responses indicative of hallucinatory experiences, whether visual or auditory. Her perceptions appear within normal limits, without signs of heightened or dulled sensory experiences.
- Cognitive Function: The woman demonstrates intact cognitive function, with coherent and relevant responses to questions posed. There are no indications of cognitive impairment or pseudo-dementia.
- Insight: The woman demonstrates adequate insight into her current mental state and acknowledges the need for treatment intervention if necessary. She attributes her current concerns to situational stressors and appears receptive to therapeutic support.

CASE 2

(History, He doesn't listen to me)

A 43-year-old pharmaceutical representative from Chennai has been referred by his general practitioner (GP) as he is concerned that he may be suffering from attention deficit hyperactivity disorder (ADHD). His elder son, 11, was diagnosed with ADHD at the age of 8 – the same age when he recalls developing his own symptoms. He has been reading up about ADHD and has completed an online screening tool. He recalls being a *hyperactive* child – he had difficulty playing or engaging in leisure activities quietly, often spoke excessively and out of turn, was constantly fidgeting and squirming when seated in the class, would make frequent excuses to leave the classroom or

when at the cinema and was generally ‘running about’ everywhere as if ‘wired to a motor’. He also recalls being quite *impulsive* and impatient, so much so that he had difficulty waiting in line for his turn and would blurt out responses out of turn. He remembers being disorganized and *inattentive* – he was easily distractible and had difficulty focusing or concentrating; he was constantly making silly errors in school work, losing things and had difficulty completing assignments on time.

His hyperactivity has calmed down over the years though he still finds it difficult to relax when doing nothing and can feel quite restless when inactive. He has changed several jobs and finds himself getting bored easily. He often comes up with ‘brilliant ideas’ in team meetings but has poor motivation in following them through. He starts many new projects but then fails to complete them. He finds it hard to carry out mundane tasks: he has never managed to claim his travel expenses and tends to become drowsy in lectures or more worryingly when driving long distances. His 360-degree feedback at work included positive comments about his inexhaustible energy and initiative but also referred to his failure to complete tasks and his tendency to talk over others or to become quite impatient and frustrated with colleagues. At home, his wife complains that she has to mother him and that she is like his personal assistant – organizing things for him, finding things that he has misplaced and reminding him of his responsibilities. She feels particularly upset about the fact that he doesn’t listen when she is speaking to him and she has to constantly repeat what she has said to him. He has been irritable at home and his wife is contemplating a separation. He enjoys adventure sports and ‘online shopping binges’ but has periods when he gets sullen and withdrawn. He does not misuse tobacco, alcohol or any other illicit substance.

(Examination)

Physical examination is unremarkable. On mental state examination, he appears worried and anxious to be given a diagnosis of ADHD. His mood is euthymic but he seems fidgety during the interview. There is no thought or perceptual disturbance.

(Questions)

- 1) What is the differential diagnosis?
- 2) What treatments should you offer?

(Answer)

The clinical picture is strongly suggestive of ADHD. He reports at least five symptoms of inattention (avoiding mundane tasks, having difficulty finishing projects, losing belongings, being easily distractible and failing to listen to others in conversation). He developed symptoms of inattention, hyperactivity and impulsivity before the age of 12 and his symptoms are pervasive (seen both in his home and work environments). They have led to significant disturbance in socio-occupational functioning (negative feedback from colleagues; threat of separation from his wife). The diagnosis can be confirmed by obtaining corroborative history from parents or teachers. Self-rating scales such as Conner's, Adult ADHD Rating Scale can be helpful. It would be important to check GP records in childhood for ADHD assessment, Child and Adolescent Mental Health Services (CAMHS) involvement or other relevant information such as school problems, minor injuries etc. This man's symptoms can- not be better explained by another psychiatric or medical disorder or by substance

misuse. Adult ADHD is the most appropriate diagnosis based on *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)* criteria. Bear in mind the possibility of feigned or exaggerated symptoms (e.g. for drug misuse). Symptoms of hyperactivity and impulsivity may subside in adulthood and in this case symptoms of inattention are prominent.

ADHD continues into the teens in two-thirds of children and of these a further two-thirds will retain the disorder in adulthood. It is associated with significant co-morbidity in adults; the most common comorbid diagnoses are anxiety disorders, depression or bipolar disorders which are the main differentials. Medical disorders such as thyrotoxicosis should also be ruled out. Substance (stimulants) misuse is of particular concern especially in vulnerable populations such as patients in prisons. Methylphenidate is the first-line treatment in adult ADHD according to National Institute for Health and Care Excellence (NICE) guidelines. Treatment should be initiated with a low dose of 5 mg tads and the dose can be gradually increased over 4–6 weeks based on treatment response and side effects up to a maximum of 100 mg/d in doses divided three or four times a day. Modified release preparations should be given no more than twice a day and ideally once a day. Atomoxetine or dexamfetamine should be considered if adequate trials with methylphenidate do not produce a response. Medication treatment requires close monitoring for side effects – cardiac side effects with stimulants (methylphenidate and dexamfetamine) and behavioral effects such as irritability and suicidal thoughts with atomoxetine. Stimulants are controlled drugs and prescribers should therefore be familiar with controlled drug legislation in their jurisdictions. In practice, treatment is likely to be prescribed by specialists rather than by primary care practitioners. Psychological treatments without medication should only be considered if drug treatments are not acceptable

or not effective. However, the care plan should address psychological, behavioral, educational and occupational needs of the patient and in this case referral for marital counseling and a referral to individual or group cognitive behavior therapy (CBT) to help improve organizational skills may be appropriate.

Key Points
<ul style="list-style-type: none">- ADHD can persist into adulthood and can have a significant impact on social and occupational functioning.- Methylphenidate is the treatment of choice in adult ADHD.

CASE 3

(History, Stressed)

A 40-year-old schoolteacher attends his general practitioner surgery with his wife with complaints of feeling constantly fearful and stressed. These feelings have been present on most days over the past 3 years and are not limited to specific situations or discrete periods. He also experiences poor concentration, irritability, tremors, palpitations, dizziness and dry mouth. He has continued to work, but his symptoms are causing stress at work and at home. He denies any problems with his mood and reports that his energy levels are fine. He admits that he is experiencing problems with his sleep. He finds it difficult to fall asleep and states that he does not feel refreshed on waking up. He has been married for 15 years and lives with his wife and two sons aged 8 and 10. His parents live locally and he has no siblings. His father has been diagnosed with Alzheimer’s dementia. He remembers his mother being anxious

for much of his childhood. He has no previous medical or psychiatric history and is not taking any medication. He smokes 20 cigarettes per day and drinks alcohol socially. He has never used any illicit drugs. He tends to hide his symptoms and said that he was seeing his general practitioner because his wife wanted him to seek help.

(Mental state examination)

He makes fleeting eye contact. He is a neatly dressed man with no evidence of self-neglect. He appears to be restless and tense but settles down as the interview progresses. He answers all the questions appropriately and there is no abnormality in his speech. His mood is euthymic and he does not have any thoughts of self-harm. There is no evidence of delusions or hallucinations. He is able to recognize the impact of his symptoms on his social and occupational functioning and is keen to seek help.

(Physical examination)

His blood pressure is 140/90 mm Hg and his pulse is regular and 110 beats per minute. The rest of the physical examination does not reveal any abnormality.

(Questions)

- 1) What is the differential diagnosis?
- 2) How would you investigate and manage this patient in general practice?

(Answer)

This man is suffering with generalized anxiety disorder (GAD). His predominant symptom is a feeling of constant fear and insecurity. He also has symptoms of anxiety related to autonomic arousal including tremors, palpitations and a dry mouth. These symptoms have been present on most days for a

period greater than 6 months. These symptoms are constant and not limited to specific situations like fear of being embarrassed in public (social phobia), fear of heights (specific phobia), discrete periods (panic attacks), or related to obsessions (obsessive-compulsive disorder [OCD]) or to recollections of intense trauma (posttraumatic stress disorder [PTSD]).

Differential diagnoses
<ul style="list-style-type: none">- <i>Depression</i>: Anxiety symptoms are common in depression and co-morbid depression is often seen with GAD. The type of symptom that appears first and is more severe is conventionally considered to be primary.- <i>Panic disorder</i>: There is a discrete episode of intense fear with sudden onset and a subjective need to escape.- <i>Other anxiety disorders</i>: They have the same core symptoms as in GAD but the symptoms occur in specific situations as in phobic anxiety disorder, OCD or PTSD.- <i>Substance misuse</i>: Symptoms of alcohol or drug withdrawal may mimic those of anxiety.- <i>Physical illness</i>: A host of medical conditions can mimic GAD – endocrine disorders such as hyperthyroidism or pheochromocytoma; neurological disorders such as migraine; deficiency states such as anemia or vitamin B12 deficiency; cardiac conditions such as arrhythmias and mitral valve prolapse; and metabolic conditions such as hypoglycaemia and porphyria.

A detailed history and mental state examination are needed to rule out the differential diagnoses listed above. Relevant blood tests like thyroid function tests, blood glucose and complete blood count are needed to rule out the physical differentials. Additional tests can be done in the context of other findings on

history or examination. Patients seen in early stages of GAD may respond to counseling offered in primary care. Those with moderate to severe symptoms need cognitive behavior therapy (CBT), which is the first-line treatment. Chronic or severe cases may need referral to psychiatric services, as in the case of this patient. Anxiety management provided by a community mental health nurse is often effective and no other treatment is needed. Selective serotonin reuptake inhibitors (SSRIs) such as fluoxetine, paroxetine or citalopram can be useful but may cause paradoxical increase in agitation and reduce patients' concordance with treatment. Side effects should be monitored carefully. Benzodiazepines carry a risk of developing tolerance and dependence with continuous use and should only be used very rarely and then for no more than 3 weeks.

Key Points
<ul style="list-style-type: none">- GAD is characterized by a constant feeling of fear and insecurity.- CBT is the treatment of choice. Benzodiazepines should be avoided.

CASE 4

(History, Sick Note)

A 43-year-old medical representative attends the general practice surgery requesting a sick note. She is due to deliver a presentation next week to the national team, upon which hinges her hope of a promotion. She says that the thought of doing this presentation is making her feel very panicky. She has always had stage fright and even the thought of speaking in public makes her

tremor worse. When asked to speak in public or when making presentations to doctors or nurses, she develops palpitations, sweating, dizziness and a feeling of butterflies in her stomach. She feels that she will make a fool of herself in public and therefore goes to great lengths to avoid such situations. When she has had to make presentations in the past to her local team, she has used a 'couple of drinks' to calm herself. She is single and is particularly nervous about dating. She feels that her problems have worsened over the past 3 years since she was promoted to hospital representative. Since then she has tended to fret about forthcoming presentations and her sleep has been quite poor. Over the last week she has been extremely agitated and has found it hard to concentrate on anything, so much so that she nearly had a serious road traffic accident. Fortunately, she escaped with a dent in her car. She reiterates her request for a sick note, as it would be 'impossible' for her to do the presentation. She would like to drive down to see her sister in Cornwall instead. There is no evidence of recurrent sick notes in her medical notes.

(Mental state examination)

She is a well-dressed woman wearing make-up. She establishes a good rapport and is cooperative. She appears very fidgety and restless. She is sweating profusely and keeps fanning herself with a magazine. Periodically, she gets tearful and her voice becomes tremulous. Her mood is clearly anxious and agitated. She does not have any formal thought disorder or indeed any other psychotic symptoms. She is a little irritable and gets upset when she feels that her request for a sick note is not being taken seriously. She has good insight into her symptoms. She acknowledges that she has not sought help 'all these years' but expresses her willingness to try any treatment that is likely to work.

(Physical examination)

Physical examination is unremarkable apart from tachycardia of 100/min.

(Questions)

- 1) How will you deal with her request for a sick note?
- 2) What advice do you give her in relation to her driving?

(Answer)

This lady is presenting with somatic and psychological symptoms of anxiety, which seem to occur in specific social situations where she fears she will embarrass or humiliate herself. So far, she has coped with these situations either by self-medicating with alcohol or by avoidance of the anxiety-provoking situation. The most likely diagnosis is either social phobia or panic disorder, although co-morbid depression needs to be ruled out, as do alcohol misuse or endocrine problems. Presently, she is very anxious about a presentation at work and is requesting a sick note. Sick notes for physical illness are usually less problematic as objective evidence of illness is often available. Stigma about psychiatric illness, both from the patient and the doctor, can further create barriers to providing a sick note. The presence of drugs or alcohol in the clinical narrative, as is the case here, can make one take a judgmental view. Parsons' concept of the *sick role* suggests that sick people get sympathy and are exempt from social obligations such as work or school. In return, however, there is the expectation that they will seek help and accept the offered treatment. This lady is likely to respond to cognitive behavior therapy (CBT) but that may take weeks. Similarly, selective serotonin reuptake inhibitors (SSRIs) such as fluoxetine may be effective but are unlikely to help her next week. Benzodiazepines can relieve anxiety in the short term but carry the risk of dependence as well as cause drowsiness and

sedation. This lady has a clinical diagnosis of an anxiety disorder and is willing to accept treatment. A sick note should help reduce the stress she is experiencing. It is important, however, to ensure that the sick note does not become an avoidance mechanism that tends to reinforce the underlying anxiety. The sick note should therefore be time limited and supported by efforts aimed at helping her back to work and engaging with treatment [2].

Driver and Vehicle Licensing Agency

Anxiety or depressive disorders, unless severe, do not usually necessitate suspension of driving. Effects of medication for these conditions or symptoms that impair driving must however be judged on an individual basis. With psychotic disorders (e.g. schizophrenia or mania) the Driver and Vehicle Licensing Agency (DVLA) guidance requires suspension of driving during the acute illness and for 3 months after complete resolution of the acute episode. Return of the license requires that the patient is compliant with treatment, that treatment side effects do not impair driving, that the patient has regained insight, and that the patient has a favorable specialist report. Fitness to drive is also usually impaired in dementia.

This lady has significant problems with concentration and agitation, which are impairing her ability to drive. DVLA guidance requires her driving to cease pending medical enquiry with resumption after a ‘period of stability’, which needs to be judged clinically. She should be advised not to drive. If she refuses to heed this advice, General Medical Council (GMC) guidelines advise breaking confidentiality and informing DVLA.

Key Points
<ul style="list-style-type: none">- Stigma about psychiatric illness may hamper return to work; sick leave relieves stress in the short term, but prognosis improves with return to work.- The DVLA needs to be informed if the patient continues to drive despite being unfit to do so.

CASE 5

(History, Checking)

A 27-year-old man presents with a 6-month history of increasing repetitive routines. He is now unable to leave the house without undertaking lengthy repetitive checking of locks, taps and switches. He is taking longer and longer so that he is often late for work. He is worried about losing his job as other colleagues have been made redundant. He had a similar episode when he was 18 around the time of his 'A level' examinations but that settled within a few weeks which is why he has delayed seeking help. He wants to know what is wrong with him and what treatment options there are that do not require medication.

(Mental state examination)

His eye contact is good. He is anxious and gently rubs his hands together without looking at them. His mood is not low subjectively or objectively. His speech is normal. There are no delusions or hallucinations and nothing else of note.

(Questions)

- 1) What is the most likely diagnosis?
- 2) What are the treatment options?
- 3) What are the Key Points about the therapy you would need to make sure the patient is aware of?

(Answer)

The most likely diagnosis is obsessive-compulsive disorder (OCD). OCD can take many forms, but, in general, persons experience repetitive, intrusive and unwelcome thoughts, images, impulses and doubts which they find hard to ignore. These thoughts form the obsessional part of 'obsessive-compulsive' and they usually (but not always) cause the person to perform repetitive compulsions, which are attempts to relieve the obsessions and neutralize the anxiety. Often there is a thought about completing an action that is accompanied by a fear that if they do not comply something dreadful will happen. They recognize that their fears and anxious behaviors are irrational but they do not stop themselves acting on them.

Medication is not recommended as a sole treatment method but is often used as an adjuvant treatment if the patient is willing. Research has shown selective serotonin reuptake inhibitors (SSRIs) are most effective for OCD, for example fluoxetine, fluvoxamine, paroxetine, and sertraline are the first line of treatment, but in the case of these being ineffective, clomipramine and others may be tried. Medication sometimes work by reducing the severity of the obsessive-compulsive symptoms or by 'taking the edge off' some of the anxiety precipitated by OCD. Cognitive behavior therapy (CBT) is a tried and tested treatment. CBT helps patients change how they think ('cognitive') and what they do ('behavior'). CBT focuses on the 'here and now' problems and difficulties. It does not seek

to look at the past for causes for current behavior and feelings. In this case he will need to consider how the obsessive thoughts lead to certain other thoughts, sensations, feelings and actions. CBT recognizes how these aspects interact in reinforcing cycles. It can help change how this man responds to his thoughts and feelings leading to alternative out- comes and a reduction in distress.

CBT can be done individually or with a group of people. It can also be done from a self-help book or computer program. CBT can be time consuming and needs motivation and commitment from the patient. Treatment usually involves 5–20 sessions weekly or fortnightly and sessions vary between 30 and 60 minutes. The problem is broken down into separate parts. It is usual to keep a diary to help identify individual pat- terns of thoughts, emotions, bodily feelings and actions. The relationship between these components is explored and techniques devised to help change unhelpful thoughts and behaviors. There is usually some ‘homework’ or ‘experiments’ between sessions, and this may include diaries. As an example, response prevention is practiced where compulsions are not carried out with discussion of thoughts, feelings, actions and outcomes. Meetings are used to do cognitive work, carry out and plan experiments and review how the tasks were undertaken and how further success can be built. CBT can be difficult to implement if someone is acutely distressed as it does need a level of clear thinking. Depression is often a co-morbid problem.

Key Points
<ul style="list-style-type: none">- CBT is the treatment of choice in OCD.- CBT is a time-consuming therapy that requires work commitment from the patient outside of the therapy sessi- SSRIs are the first-line medications used and can be effective.

CASE 6

(History, having a heart attack)

A 36-year-old schoolteacher is brought in by the paramedics to the emergency department. This is her fifth presentation in 4 weeks. She woke up from her sleep last week drenched in sweat and experiencing an intense constricting chest pain. She reported a racing heart, difficulty breathing and an overwhelming fear that she was about to die. She called 999 (emergency telephone number in the United Kingdom) who took her to the emergency department where all investigations were normal. She was discharged with a diagnosis of ‘panic attack’ but she had a similar attack 2 weeks later. On her third presentation she was referred to a psychiatrist. She had another episode last week, which was managed by the paramedics. Today, however, she said that the chest pain was far more severe and she was also feeling dizzy, choking, with hyperventilation, numbness and tingling in her left arm, which convinced her she was having a heart attack. The paramedics tried to reassure her but she started screaming and flailing her legs and arms forcing them to take her to the emergency department once again. She tells you that she thinks she is dying or going mad. She is terrified of having another attack and has insisted her husband take leave over the past week to be with her. She refuses to go out anywhere without him. She is upset about having called 999 but says the emergency doctors saved her life. She is avoiding her bedroom as four of the five attacks have happened there. She is avoiding lying down and instead spends the night in her armchair. Her husband is extremely concerned. He is particularly worried as her

father has a history of myocardial infarction and her mother has had a stroke. She has tried cannabis a few times, the last time being 6 months ago. She smokes when she goes out for a drink with her friends – usually once a month. They live in their own home, have no children and have no financial worries.

(Physical examination)

She appears calmer but shaken. She is drenched in sweat and still tremulous. She has tachycardia and tachypnoea, but blood pressure (130/84 mm Hg) is normal. There is no other significant abnormality.

(Questions)

- 1) What is the diagnosis and what are the likely complications?
- 2) How will you explain the diagnosis and possible treatment to her and her husband?

Investigations
Her electrocardiogram is normal. Random blood sugar, thyroid profile, serum calcium and urine drug screen are also normal.

(Answer)

This lady is presenting with a *panic attack* which is a discrete period of intense fear or discomfort developing abruptly and peaking within 10 minutes. It is characterized by palpitations, sweating, trembling, shortness of breath, choking sensations, nausea, abdominal distress, dizziness, fear of loss of control or ‘going crazy’, fear of dying, tingling sensations, numbness and chills or hot flushes. Derealization (feelings of unreality) and depersonalization (feelings of detachment from self) may also be seen. She has recurrent attacks with persistent

fear of having another attack (fear of fear) and worry about the implications of having the attack (fear of heart attack and death) suggesting a diagnosis of *panic disorder*. She is anxious about sleeping at night and is *avoiding* her bedroom and is engaging in the *safety seeking* behavior of going to the emergency department or of keeping her husband next to her. This suggests a diagnosis of *panic disorder with agoraphobia*.

Medical conditions that need to be ruled out include hyperthyroidism, hyperparathyroidism (serum calcium), pheochromocytoma (hypertension with headaches, tachycardia), hypo- glycaemia and cardiac arrhythmias.

Phobic avoidance and agoraphobia are common complications in panic disorder and can lead to the patient becoming housebound. Alcohol, substance misuse and depression are other possible complications. Reassuring her and her husband that there is no serious physical illness is important but so is acknowledging the reality of her distress and the worry of her husband. Cognitive behavior therapy with her will explain the link between emotions (fear), cognitions (belief that sleep may induce an attack) and safety (sleeping in the armchair) and how this is crucial as an explanation of the vicious cycle. It creates a link between sense of apprehension and physiological changes such as increased heart rate. These bodily changes are interpreted catastrophically with fear of something awful happening (*catastrophic misinterpretation*) leading to more anxiety which leads to further sympathetic response and somatic symptoms perpetuating the vicious cycle. This explanation provides the basis for cognitive behavior therapy which is the recommended treatment for panic disorder with or without agoraphobia. Recognizing signs of a panic attack and understanding the stress response can abort a panic attack. Cognitive therapy can be explained using the hot cross bun

model. Short-acting benzodiazepines such as alprazolam and lorazepam reduce the frequency and intensity of panic attacks but carry a high risk of dependence and are therefore not recommended. Tricyclic antidepressants such as imipramine and selective serotonin reuptake inhibitors (SSRIs) such as fluoxetine are effective though SSRIs may induce anxiety and agitation in the short term.

Key Points
<ul style="list-style-type: none">- Repeated catastrophic presentation of anxiety symptoms in the absence of a medical cause suggests panic disorder.- Reassure patients and significant others, explaining the link between physical and psychological symptoms.

CASE 7

(History, going through a bad patch)

A 34-year-old bank manager attends the general practice surgery with her 8-year-old son, who is suffering from asthma. She appears tremulous and becomes tearful while talking about his problem. She says that she has been very worried about her son and has not been sleeping very well for the past 5–6 months. She has been eating reasonably well although she admits that she has felt more tired and unmotivated than usual. She is still going to work but has found it hard to concentrate on her work as well as before. She worries that she might make a serious mistake at work. She says that she has managed to cope with the support of her husband, who has been ‘a rock’. However, there have been days when she has found it difficult to get out of bed. She feels she is going through a bad patch and is hopeful that things will

get better soon. She does not see a problem with her self-esteem and finds her work enjoyable but exhausting. She completely dismisses any idea of self-harm or suicide and saying she would never even think about it. She apologizes profusely for becoming emotional and asserts that she is normally very calm and composed but had been overcome by the stress of her son's illness. She requests a glass of water and takes a few deep breaths as her 'heart was beating fast'. She lives with her husband in their own four-bedroom house. There is no family history of any major medical or psychiatric illness. In particular, she denies history of any mood episodes, either depression or hypomania. She drinks alcohol socially, never exceeding 10 units per week. She does not smoke or use any illicit drugs. She describes herself as a 'go-getter'. She is a keen runner and runs 12–16 miles a week.

(Physical examination)

She agrees to a brief physical examination. She has a tachycardia of 108 beats per minute, her pulse is regular and her blood pressure is 138/88 mm Hg. Her palms appear cold and sweaty but there is no other significant physical finding.

(Mental state examination)

She is pleasant, cooperative and establishes a good rapport. She is clutching her son protectively but maintains good eye-to-eye contact throughout the interview. Her speech is of normal rate and volume. Her mood is anxious and low. She does not have any psychotic symptoms. She has a good insight into her symptoms. She does not wish to take any medications but acknowledges that she needs to be 'strong' to be able to look after her son. She does not have any ideas of self-harm.

(Questions)

- 1) What are the possible diagnoses?
- 2) How should this woman be managed?

(Answer)

This woman is presenting with a mixture of anxiety and depressive symptoms occurring in the context of her son's illness. She is feeling very stressed and has coped well with her husband's support. Diagnostic possibilities include:

- Mixed anxiety and depression. This is a common presentation in primary care characterized by a mix of anxiety and depressive symptoms without clear prominence of any one type and the presence of one or more physical symptoms (typically tremor, palpitations, lethargy etc.) present for more than 6 months.
- Adjustment disorder with depressed mood or with mixed anxiety and/or depression. This occurs in reaction to a stressful event or situation usually lasting less than 6 months with onset within 3 months of onset of a stressor. The symptoms are not caused by bereavement and the symptoms do not persist for more than an additional 6 months after cessation of the stressor.
- Depression. She does have the core symptoms (low/anxious mood, reduced energy) and some other symptoms (reduced concentration, poor sleep) lasting more than 2 weeks suggesting a mild depressive episode.
- Other disorders that need exclusion include generalized anxiety disorder or medical causes of anxiety/depression. Dysthymia (characterized by depressed mood over 2 years and two or more from a list of reduced or increased appetite, insomnia or hypersomnia, low energy, low self-esteem, poor concentration and feelings of hopelessness) can be excluded in this case due to the duration criteria.

Bipolar disorder needs to be excluded by asking about hypomanic/manic episodes.

Detailed history and mental state examination will be needed to establish the diagnosis. Appropriate investigations to rule out any medical disorders will also be required. National Institute for Health and Care Excellence (NICE) guidelines suggest that when depressive and anxious symptoms coexist, the first priority should usually be to treat the depression. Psychological treatment for depression often reduces anxiety, and many antidepressants also have sedative/anxiolytic effects.

A stepped care model approach would be well suited to this situation. This woman has mild mood symptoms and as per the stepped care model, these are best treated initially in a primary care setting. 'Watchful waiting' (follow-up appointment within 2 weeks) with reassurance is sensible, as symptoms may resolve spontaneously. If symptoms persist on subsequent visits, brief psychological interventions may be provided by the practice counselor or primary care mental health worker. Computerized cognitive behavior therapy (CBT), healthy lifestyle advice about exercise and sleep hygiene are also helpful. Guided self-help using manuals or self-help books are other options available in primary care. If her symptoms worsen, treatment can be commenced taking into account her preference. She can be referred for primary care-based psychological treatments such as CBT (e.g. Integrated Access to Psychological Therapies [IAPT] in England). Alternatively, if she prefers (or if CBT has proven to be unsuccessful), antidepressant/anxiolytic medication such as selective serotonin reuptake inhibitors (SSRIs) can be effectively administered in primary care. Treatment-resistant cases, psychotic symptoms, atypical symptoms or recurrent episodes should trigger a referral to specialist services. At any stage, if risk profiles change rapidly and risk assessment indicates a risk to

self, to others or of self-neglect a referral can be made to the crisis team for consideration of inpatient treatment.

Key Points
<ul style="list-style-type: none">- Establish the diagnosis and severity of mood disorder- Manage mild/moderate cases in primary care using a stepped care approach.

CASE 8

(History, I am putting weight on)

A 19-year-old health care assistant attends the psychiatry outpatient clinic for her first follow-up since discharge. She had been admitted with the first episode of paranoid delusions, running commentary hallucinations and has been diagnosed with paranoid schizophrenia. She has been prescribed olanzapine 15 mg daily. Her psychotic symptoms have been effectively controlled with this medication. She is no longer experiencing any positive psychotic symptoms and does not report any significant negative symptoms either. However, she has gained nearly 6 kg in weight over the 3 months that she has been taking olanzapine. She is 1.5 m tall and her baseline weight was 52 kg (body mass index [BMI] increased from 23 to 25.7). She used to smoke 20 cigarettes a day but has recently switched to rolling her own and is using about 100 g of tobacco a week. She does not use any illicit substances. She drinks about two bottles of wine a week and acknowledges that she had no motivation to exercise following discharge. She is extremely concerned about this weight gain and is keen to discuss this during her appointment.

(Mental state examination)

She is dressed smartly. She is pleasant, articulate and expressive. She does not have any psychotic symptoms. Her mood is euthymic. She understands the implications of her diagnosis and is keen on adhering to the prescribed treatment.

(Physical examination)

Her blood pressure is 128/78 mm Hg. Her waist measurement is 33 inches. There is no remarkable finding on systemic examination. Her blood investigations were reported as being normal at the point of admission. Her latest investigations done the day before her clinic appointment are given below.

Investigations
<ul style="list-style-type: none">- Haemoglobin: level 13.4 g/dL, reference range [13.3–17.7 g/dL]- Mean corpuscular volume (MCV) 85 fL, [80–99 fL]- White cell count 8.8×10^9 /, [$3.9\text{--}11.0 \times 10^9$ /L]- Fasting plasma glucose 6.4 mmol/L, [<6.1 mmol/L]- Hb1Ac 44 mmol/mol, [<42 mmol/mol]- Total cholesterol 5.6 mmol/L, [<5 mmol/L]- LDL cholesterol 3.7 mmol/L, [>0.9 mmol/L (men) >1.0 mmol/L (women) <3 mmol/L]- Fasting serum triglycerides 2.4 mmol/L, [<2 mmol/L]

(Questions)

- 1) What is the explanation for the changes in her weight and in her investigations?
- 2) How will you manage her?

(Answer)

This is a case of first-episode psychosis that is being managed with a second-generation antipsychotic medication, olanzapine. While these medications are less likely than the first-generation antipsychotics (see Case 41) to cause extrapyramidal side effects, they have been associated with significant metabolic side effects such as weight gain, impaired glucose tolerance and hyperlipidaemia. This woman exhibits dyslipidaemia (raised triglycerides and lowered HDL cholesterol), raised fasting glucose, and central obesity meeting four of the five criteria (barring raised blood pressure) needed for the diagnosis of metabolic syndrome. She has gained weight rapidly (>5 kg over 3 months) which along with her impaired glucose and lipid tests, places her in the red zone of the Lester Adaptation of the Positive Cardiometabolic Health Resource suggesting the need for immediate intervention. People with schizophrenia have their life expectancy reduced by 15–20 years and cardio-vascular disease (CVD) is the single largest cause of this premature mortality (more so than suicide) in this population. She has other risk factors that enhance this risk. She is a smoker (largest risk factor for CVD in people with mental illness), has become more sedentary since her discharge and is likely to need to remain on her antipsychotic medications. While 50 percent of patients commencing antipsychotic medications gain >7 percent of their body weight in the first 12 months (as she has), they are at continued risk of gaining further weight over the next 36 months.

The intervention in her case needs to target (1) smoking, (2) lifestyle, (3) weight and BMI, (4) blood pressure, (5) glucose levels and (6) blood lipids. There needs to be a proactive approach in collaboration with her, her primary care practitioner, the psychiatric care team and significant careers to maintain her physical health and well-being. She should be referred for smoking cessation counseling but given her increasing

dependency may need specialist support to help her stop or reduce smoking. Nicotine replacement therapy and/or varenicline are known to be effective. She should be encouraged to contain her caloric intake and exercise regularly (moderate intensity, 30 min/d). Community-based weight and diet management programs with periodic reviews (3-monthly in this case) of key parameters (weight, BMI, waist measurement, blood lipids, glucose, and electrocardiograph) to encourage and maintain compliance with healthy nutrition and lifestyle changes will be useful. In her case, she will need to be referred to a metabolic specialist given the diagnosis of metabolic syndrome. Hypertension, obesity and dyslipidemia may require appropriate pharmacological treatment – NICE guidelines offer useful protocols. Given the rapid onset of metabolic syndrome in her case, her antipsychotic medication needs to be reviewed and consideration must be given to reducing the dose or to switching to an alternative medication. This decision must take into account the risk of relapse of psychosis and patient preference.

Key Points
<ul style="list-style-type: none"> - Metabolic syndrome reduces the lifespan of patients with schizophrenia. - Medication review, lifestyle advice and appropriate specialist referral are needed.

CASE 9

(History, Unresponsive in the Emergency Department)

A 30-year-old man is brought to the emergency department by his girlfriend in an unresponsive state. His girlfriend provides

the history. She left him in his bedsit last night but found him lying unconscious this morning. She says that he has been an intravenous heroin addict for the past 5 years but is certain that he never shares needles and has had regular negative tests for HIV. In the past he has made several unsuccessful attempts to quit heroin, the last one being as recent as a week ago. There is no significant medical or psychiatric history. He is unemployed and lives on his own. His parents died when he was young, and he does not have any surviving relatives.

(Examination)

His pulse is 70 beats per minute regularly, blood pressure 108/58 mm Hg. His respiratory rate is 10 breaths per minute. He is in a hypotonic hyporeflexia coma but there are no focal neurological signs. There is no verbal response though he groans in response to pain. His Glasgow Coma Scale (GCS) score is 4/15. His SpO2 (percutaneous oxygen saturation) is 75 percent. He has pinpoint pupils. His arms and legs reveal multiple scarred needle puncture sites. His consciousness improves significantly (GCS of 15) following an intravenous bolus of 0.3 mg of naloxone.

Investigations
<ul style="list-style-type: none">- Haemoglobin level 13.8 g/dL, reference range [3.5–11.0 × 10⁹/L]- White cell count 9.8 × 10⁹/L [135–145 mmol/L]- Sodium 138 mmol/L [3.5–5 mmol/L]- Urea 4.0 mmol/L [2.5–6.7 mmol/L]- Bicarbonate 92 µmol/L [70–120 µmol/L]- Glucose 16 mmol/L [24–30 mmol/L]- Calcium 4.0 mmol/L1. [4.0–6.0 mmol/L]

- Arterial blood gases on air pH 7.29 7.4 kPa 9.6 kPa
[7.38–7.44 4.7–6.0 kPa 12.0–14.5 kPa]

Note: Electrocardiogram: no abnormality detected; chest X-ray: normal.

(Questions)

- 1) What is immediate management?
- 2) How will you manage him in the long term?

(Answer)

This man has the characteristic combination of impaired consciousness, bradypnoea and miosis indicative of opioid toxicity. Pinpoint pupils may be observed in pontine lesions or after local cholinergic drops, but history and examination suggest opioid overdose. Naloxone is a specific opiate antagonist with no agonist or euphoriant properties. On intravenous or subcutaneous administration it rapidly reverses the respiratory depression and sedation caused by heroin intoxication, confirming the diagnosis, as in this case. Immediate management involves securing the airway, stabilizing breathing and circulation (ABC) and providing supported ventilation and intravenous fluids. Naloxone is administered at a continuous 0.3 mg/h infusion aimed at keeping the GCS at 15 and a respiratory rate over 12 breaths per minute. He will need to be observed in an intensive care unit (ICU) with naloxone infusion until all opioids are cleared from the system. Investigations include blood and urine toxicology, full blood count for infections and arterial blood gases to monitor oxygenation. Further investigations include liver function tests, rapid plasma reagent (RPR), hepatitis viral testing, HIV testing in view of IV drug use and chest X-ray to rule out pulmonary fibrosis.

Detailed history and mental state examination are needed to assess whether the overdose was accidental or deliberate and to rule out psychiatric disorders such as depression. A sermon listing the ill-effects of substance misuse is likely to be ineffective and, in an acute setting, inappropriate. Motivational interviewing (MI) techniques have been shown to be more effective. This is where the patient, rather than the doctor, lists the costs and benefits of continued substance misuse. Key components of MI are as follows:

- 1) Using *empathy* to understand the patient's point of view and reasons for using opioids.
- 2) Allowing the patient opportunity to explore the *discrepancy* between positive core values (e.g. a desire to 'be good') and his or her unhealthy behaviors.
- 3) Tackling the inevitable *resistance* with empathy rather than confrontation.
- 4) Supporting *self-efficacy* and enhancing self-esteem.

The step-wise goals of treatment guide the patient through harm minimization strategies up to the complete cessation of the addictive behavior. These include (1) reduce injecting; (2) reduce street drug use; (3) practice maintenance therapy (MT) with heroin substitutes methadone (long-acting μ receptor agonist) or buprenorphine (partial agonist); (4) reduce substitute prescribing; and (5) abstain. An ongoing psychosocial care package with cognitive or group therapy aimed at relapse prevention is vital. MT reduces illicit drug use, criminal activity, the risk of seroconversion for HIV, hepatitis B and C and improves socialization. Methadone can be fatal in overdose and also has street value so medication is dispensed in liquid form (rather than tablets that can be reconstituted for injection).

(Stages of change)

Precontemplation: The patient does not acknowledge the problem and is often defensive about his or her substance misuse.

Contemplation: There is awareness of the consequences of substance misuse while weighing up the pros and cons of quitting. There is no decision made to change.

Preparation/determination: A commitment is made to change, involving research and preparation for the consequences. Skipping this step and jumping to ‘action’ often leads to ‘relapse’.

Action: Active efforts to change. It is boosted by external help and support.

Maintenance: Success in this stage involves avoiding relapse. This entails constant adaptation and acquisition of new skills to deal with changes in the environment.

Relapse: This is common and so it is useful to encourage a return to contemplation and re- entry into the cycle.

Key Points
<ul style="list-style-type: none">- Opioid intoxication needs urgent treatment with naloxone, the opioid antagonist. • Empathizing is more effective than sermonizing.- MT reduces illicit drug use but must be supported with a full package of care.

CASE 10

(History, feeling empty)

A 34-year-old call-center manager attends her general practitioner (GP) surgery with her boyfriend. She complains of tiredness and a lack of enthusiasm for life. These complaints started a year ago but have worsened over the past 2 months. She

has been forced to take time off work as she was constantly arguing with the senior manager and found it difficult to remain calm and composed at work. She has also been irritable with her boyfriend, and gets upset easily if he tries to 'motivate' her. She knows that he is well meaning, but still finds it very irritating and yet feels guilty for responding to him in this way. She has lost all interest in sex or going out socializing. Despite being offered a great deal of support by her boyfriend, she constantly worries that he will leave her. Over the past 6 weeks when she has been at home, she has spent most of her time in bed. She admits shamefacedly that there are days when she does not wash or even brush her teeth. She vacantly watches the television, not able to take in anything. She feels 'empty' most of the time and finds it upsetting that she cannot even react to her boyfriend's efforts at reaching out to her. She watches TV until late finding it difficult to sleep. In the morning, she feels exhausted and tends to lie in bed until late. She has had thoughts of dying, but resists acting on these as she does not want to punish her boyfriend or her mother, who lives by herself. She is an only child. She lives with her boyfriend in his flat. She is close to her mother and visits her weekly.

Her father died following a stroke last year. She is healthy and has no medical problems. She does not drink or use drugs. She remembers being admitted to a psychiatric unit on a section at the age of 19 as she had become 'very high'. She remembers taking lithium for a while, but now has been off it for years. The only other psychiatric episode she can recall was on a holiday to Greece when she became quite elated and was convinced that she was Venus, the goddess of love. She went to the local market, topless, was arrested and admitted to a local psychiatric hospital. She was treated as an inpatient for 2 weeks and was discharged with some medication. She has only hazy memories of the

episode, but remembers not taking the medication on her return to the United Kingdom.

(Questions)

- 1) What is the likely diagnosis?
- 2) How will you manage this patient in the short and longer term?

(Answer)

This woman is presenting with a moderate to severe depressive episode with a past history of two episodes of mood disorder, which appear to have been manic episodes (delusions of grandeur, elated mood and dis-inhibition requiring admission to an inpatient unit). The most likely diagnosis is bipolar disorder, with a current depressive episode. To manage the current depressive element she should be referred to the mental health team for an urgent assessment. Antidepressants (on their own) may lead to a switch to mania, and should therefore be avoided. This is particularly so in cases of rapid cycling illness (more than four mood episodes per year) or in case of a recent manic episode. Psychotherapies such as cognitive behavior therapy (CBT) or interpersonal therapy (IPT) may be helpful. Quetiapine on its own or fluoxetine combined with olanzapine are evidence-based treatments indicated to treat moderate to severe bipolar depression. Olanzapine or lamotrigine on their own are also useful and if the patient is already on lithium or sodium valproate, optimizing the dose within the therapeutic range may be helpful.

It is prudent to consider longer-term management. She has had more than two acute mood episodes, and therefore it is very likely that she will have further episodes of either depression or mania. Prophylactic treatment is strongly indicated in this case

as it reduces the frequency and intensity of mood episodes. Lithium is the first-line treatment but if it is poorly tolerated or not suitable, then sodium valproate or olanzapine are recommended for prophylaxis; she is of childbearing age and therefore sodium valproate in particular and lithium are best avoided and should be prescribed only by specialists. Prophylaxis should be continued for at least 2 years after an episode, but may need to be as long as 5 years if risk factors such as severe psychotic episodes, frequent relapses, comorbid substance misuse, ongoing stress or poor psychosocial support are present. A key ingredient for a positive prognosis is patient engagement and self-management with self-monitoring of mood, early recognition of signs of relapse and prompt treatment. She and her boyfriend need to be actively involved with the psychiatrist and multi-agency team (community psychiatric nurse/occupational therapist) in developing a needs-based care plan including a crisis plan as they will be in the best position to identify early signs of relapse. Helping her with potential triggers such as shift work, improving sleep hygiene and providing extra support at times of stress is important. Advance directives can be useful in treatment planning for future episodes, as insight is often impaired in manic episodes and in severe depression. A shared protocol of care between primary care and secondary care is needed, and she should be offered regular physical health checks to monitor the physical health effects of her prophylactic medication. Weight, blood glucose, lipids, blood pressure, smoking and alcohol status should be monitored regularly. Her boyfriend may benefit from a carer's assessment and referral to a support group.

Key Points
<ul style="list-style-type: none">- Identification of bipolar depression is crucial as management is different from that in unipolar depression.- Psycho-education with identification of a relapse signature is crucial in ameliorating future episodes.- Relapse prevention planning should be part of care for any major mental illness.- Monitoring physical health is vital especially when prophylactic medication is prescribed.

CASE 11

(History, I do not want to take pills)

A 36-year-old stockbroker attends the general practitioner (GP) surgery requesting help with her mood. She has been feeling very stressed and has been finding it difficult to cope with work. She is used to working in a high-pressure environment but now feels burnt out and is worried that she may lose her job. She broke up with her boyfriend of 6 years 9 months ago and has been single since then. She has little interest in dating but has been having casual sexual relationships, which only make her feel worse about herself. She feels guilty for having neglected her boyfriend on account of her work, but also feels angry with him for having abandoned her. She cries to sleep every day and tends to wake up early. She has little interest in anything, but forces herself to go to work though it leaves her feeling exhausted so she spends the weekend in bed. She hates herself physically, thinking she is too fat. She says she hates her personality as she believes she is too dependent and clingy. She feels desperate about the future fearing that her biological clock is ticking away.

She feels very guilty about a medical termination of pregnancy that she had with her boyfriend and feels that she can never forgive herself for having the abortion. There is no significant medical history. She has never formally sought help for any mental health problems, but feels that she has lacked confidence for years. She is close to her mother and visits her daily. She says that her father walked away from the family when she was 13 years old. She has refused to meet him though her two brothers have made peace with him. She feels that since then she has become a gloomy pessimistic person. She thinks that her friends and colleagues perceive her as a critical, humorless person. She had a brief course of cognitive behavior therapy (CBT) in the past and although she engaged, she found it unsatisfying because she felt it focused more on the present, when she was talking about her father and other past issues, which she felt were unresolved. She lives on her own in her apartment. She drinks two bottles of wine over the weekend, but does not see this as a problem. She does not smoke or abuse any illicit drugs.

(Mental state examination)

She is dressed smartly wearing subtle makeup. She establishes a good rapport and is very deferential. She speaks articulately but starts sobbing when talking of her abortion. She looks visibly upset when talking about her boyfriend. Her anger is evident when talking about her father. She clearly describes ideas of hopelessness, guilt and worthlessness. Her mood is low, but she does not have any ideas of self-harm. She has very good insight and she understands the need to deal with her symptoms and the personality issues underlying them. She is motivated to seek and to comply with any interventions. However, she would prefer not to take medication and requests a talking therapy.

(Questions)

- 1) What psychological therapy would you prescribe her?
- 2) How would you explain the role of psychodynamic therapy in her case?

(Answer)

This woman is presenting with a low mood, tiredness, idea of hopelessness, guilt and worthlessness with sleep disturbance of more than 2 years' duration. This is superimposed on long-standing traits of pessimism and low self-esteem. She may be suffering from a moderate depressive episode although underlying dysthymia characterized by at least 2 years of low-grade depressive mood also needs to be considered. Depressive episode superimposed on dysthymia is called *double depression*. National Institute for Health and Care Excellence (NICE) guidance recommends CBT for depression. However, the guidelines do state that 'psychodynamic psychotherapy may be considered for the treatment of the complex comorbidities that may be present along with depression'. This woman has experienced a series of losses in her life: her father, her unborn baby, her boy- friend and now possibly her job. She is motivated to change and is psychologically minded, i.e. is demonstrating an awareness of the psychological issues underlying her problems. This makes her a good candidate for psychodynamic therapy. The key feature of psychodynamic therapy is to understand current symptoms in the light of past experiences. The hypothesis is that unresolved conflicts arising from past relationships (e.g. in her relationship with her father in this case) create anxiety. In an effort to prevent this anxiety, the unconscious mind devises strategies that ward off anxiety-provoking thoughts and emotions that are too difficult to be dealt with in the conscious mind. These strategies are known as defense mechanisms. In moderation such

strategies can be effective (and can be very useful in the short term) but when used excessively, they can contribute to psychopathology. For example, the defense mechanism of denial can prevent a person moving on developmentally or can mask other compensatory problems such as alcohol misuse. Psychodynamic work involves making links between past traumatic experience, defense mechanisms and current symptoms. This process is helped by encouraging the patient to engage in free association, which involves the patient talking freely without any censorship. Identifying obstacles to free association helps identify defense mechanisms such as denial or suppression which have led to the exclusion of painful material from the conscious mind. Analysis is also helped by an understanding of transference, whereby the patient transfers, to the therapist, emotions and beliefs about significant people in her own life. The therapist remains passive and neutral, facilitating the patient to talk freely.

Psychodynamic therapy may be provided in an individual or group setting. Psychoanalysis is an intensive therapy focused on developing detailed insight into the unconscious processes underlying the symptoms leading to a modification of personality. Sessions are conducted daily or several times a week and can last in excess of 2 years. Brief psychodynamic therapy, on the other hand, is time limited, often no more than 20 sessions, and focuses on a specific problem, for example, on the theme of loss in this case.

Key Points	
-	Psychodynamic therapy is useful in the case of mood and anxiety disorders with comorbid complexities such as personality problems.

- It involves understanding current symptoms in the light of past experiences.
- Defense mechanisms are unconscious strategies evoked to prevent anxiety; however, in the long term they may worsen psychiatric symptoms.

CASE 12

(History, never felt better)

A 33-year-old phlebotomist presents to the emergency department with his girlfriend to get a repeat prescription of his antidepressant citalopram. He seems very restless, pacing up and down the waiting room. He is mumbling to himself and intermittently starts singing rather loudly. He is wearing bright clothes and lots of jewelry. The girlfriend states that he used up 4 weeks' worth of medication in 2 weeks. When the staff nurse approaches him to calm him, he starts shouting and swearing loudly and becomes quite intimidating and threatening. He was first diagnosed with depression 5 years ago and responded well to citalopram 20 mg once a day, which was discontinued after a year. Six months ago he became depressed once again and was again prescribed citalopram 20 mg a day. He has been seen every 4 weeks at the general practitioner (GP) surgery since then and has been quite well. On his last visit 2 weeks ago he complained of poor sleep and was prescribed temazepam 10 mg nocte (at night). He has been taking double the dose of his antidepressant of his own accord. For the past 2 weeks he has had broken sleep, but despite that he feels full of energy. He has been off work for the past week as he was working on a breakthrough invention 'that would revolutionize phlebotomy'. His girlfriend is

concerned about him as he has been very talkative and has been spending excessively and buying her vastly expensive gifts. There is no adverse medical history and no other psychiatric history apart from the depressive episodes. He lives with his girlfriend. His parents live locally, he is an only child and there is no family history of mental illness. He smokes 15–20 cigarettes a day and engages in social drinking using no more than 10 units a week. He uses cannabis ‘now and then’ and has used cocaine in the past.

(Examination)

His eye contact is not good when you are talking but is intense when he is addressing you. He is talking quite rapidly and claims to be the ‘Crown Prince of England’. He answers in rhyming ditties and breaks down in sobs holding his girlfriend’s hand. He gets angry that he is not addressed as ‘His Majesty’ and becomes quite agitated. There are no hallucinations. He has little insight, but is willing to take antidepressant medication. He does not have any ideas of self-harm. Physical examination is unremarkable.

(Questions)

- 1) What is the differential diagnosis?
- 2) How would you investigate and manage this patient in the emergency department?

(Answer)

This man is presenting with a manic episode. He displays irritable mood, grandiosity, reduced need for sleep, psychomotor agitation and excessive spending reflecting poor judgment for 2 weeks. His symptoms have caused him to miss work and he meets the criteria for a current manic episode. He has had two episodes of depression and therefore meets the criteria for bipolar

disorder currently in mania. He has been using extra doses of antidepressant medication and this may have precipitated the manic episode.

Differential diagnosis of manic episode
<ul style="list-style-type: none">- <i>Hypomania</i>- <i>Drug-induced manic episodes</i>, Apart from antidepressants, other medications such as steroids and stimulants may cause manic episodes. Illicit drugs such as cocaine, amphetamines and hallucinogen intoxication can cause manic episodes and alcohol withdrawal may also mimic a manic episode.- <i>Organic mood disorder</i>, Manic episodes can occur secondary to medical conditions such as stroke, hyperthyroidism or Cushing disorder and more rarely space- occupying lesions such as meningioma or gliomas.- <i>Schizophrenia</i>: This is characterized by mood-incongruent delusions, hallucinations and prominent psychotic symptoms as opposed to mood symptoms.- <i>Schizoaffective disorder</i>: Mood symptoms and schizophrenia symptoms are equally prominent.- <i>Acute confusional state</i>: The agitation and affective lability seen in acute confusional states may mimic a manic episode.

Investigations
<ul style="list-style-type: none">- Obtain collateral history from previous records and GP notes and detailed history from girlfriend.- Conduct a detailed mental state examination to rule out formal thought disorder, mood-incongruent delusions and hallucinations suggestive of schizophrenia. A

cognitive abnormality would be suggestive of delirium (acute confusional state).

- Conduct a urine drug screen to rule out intoxication with drugs such as amphetamines that may cause a manic episode.
- Perform blood tests such as whole blood count to rule out infection as a cause for delirium, urea and electrolytes to exclude an electrolyte imbalance causing delirium and thyroid function tests to rule out hyperthyroidism.

He is demanding more antidepressants which probably precipitated his manic episode. Discontinue his antidepressants and explain to him that they are likely to make him worse not better. He is acutely agitated and grandiose and is displaying impaired judgment. Agitation may be treated with a short-acting benzodiazepine such as lorazepam 1–2 mg orally or intramuscularly (IM) up to a maximum of 4 mg in 24 hours. If agitation is severe olanzapine 5–10 mg orally or for even faster onset of action olanzapine 10 mg IM up to a maximum of 20 mg/24 hours can be used. To avoid the risk of respiratory depression parenteral benzodiazepine should not be given until at least 1 hour after IM olanzapine administration. This man is exhibiting symptoms of a manic episode, and he should be referred for an assessment by the specialist psychiatric team. This would be either the mental health liaison team, crisis team or the on-call psychiatrist. An acute manic episode is typically treated with lithium or an atypical antipsychotic such as olanzapine, risperidone or quetiapine. Management should involve the least restrictive options appropriate to the situation, and thus the crisis resolution home treatment team should perform a risk assessment to consider whether home treatment is suitable. If not, informal admission needs to be offered. If this is refused, involuntary

admission under the appropriate section of the Mental Health Act (MHA) needs to be considered (Section 2 in England and Wales).

Key Points
<ul style="list-style-type: none">- Antidepressants may precipitate a manic episode and should be stopped.- A risk assessment would determine whether home treatment or informal admission to hospital is appropriate. Involuntary detention using appropriate legislation may be appropriate when risk to self or others is present.

CASE 13

(History, Aches and pains and loss of interest)

A 52-year-old medical secretary visits her general practitioner (GP) surgery with a 3-month history of back pain, generalized body ache and tiredness. She feels absolutely exhausted and has found it difficult to go to work. She feels so tired and uninterested that she has stopped her usual weekend visits to her daughter and grandchildren. The pain is located in the lower back and is described as a constricting non-radiating pain, which seems to be better when she is lying down. However, she has difficulty falling asleep and often wakes up early in the morning. At times she continues to lie in bed until early afternoon. The pain in her back and her body ache do seem to get better as the day goes along. Her husband has been concerned about her as she is usually a 'go-getter'. She feels preoccupied with her pain, does not enjoy the taste of food and has lost weight, which is one 'silver lining to the cloud'. At work, she has again

been slow and not as ‘efficient’ as she normally is. She has taken paracetamol and ibuprofen without much benefit.

(Physical examination)

There is no localized tenderness or inflammation and systemic examination is normal.

(Mental state examination)

Her eye contact is within normal limits but her face is expressionless. She appears slow, tired, takes a long time to answer questions and her voice is soft. She reports feeling ‘empty’ and lethargic with little interest in work or previously pleasurable activities. She reports feeling guilty at not wanting to see her grandchildren. She has difficulty concentrating but does not report a problem with libido. She does not have any thought disorder. She does not report any periods of elevated mood or any symptoms of anxiety.

Investigations
<ul style="list-style-type: none">- Haemoglobin level 13.2 g/Dl, [11.7–15.7 g/Dl]- Mean corpuscular volume (MCV) 87 fL [80–99 fL]- Erythrocyte sedimentation rate (ESR) 9 mm/h [<10 mm/h]- White blood cell count 7.2×10^9/L [$3.5\text{--}11.0 \times 10^9$/L]- Thyroid-stimulating hormone 3.5 mU/L [0.3–6.0 mU/L]- Free thyroxine 13.9 pmol/L [9.0–22.0 pmol/L]
<i>Note:</i> Rheumatoid factor: negative; anti-DNA antibodies: negative.

(Questions)

- 1) What is the likely diagnosis?
- 2) What factors will improve the likelihood of making the correct diagnosis?

(Answer)

This woman is presenting with multiple somatic symptoms of 3 months' duration. While ruling out an appropriate physical pathology is important (arthritis, for example, in this case), it is equally important to rule out depression, which is a treatable reversible disorder.

Diagnostic criteria for depression
<ul style="list-style-type: none">- Core symptoms: low mood, reduced energy and anhedonia (lack of interest and enjoyment)- Cognitive symptoms: reduced concentration, ideas of helplessness/hopelessness/ worthlessness, ideas of self-harm/suicide, reduced self-esteem- Somatic symptoms: reduced sleep (especially early morning awakening), reduced appetite or weight loss, reduced libido- At least two of the core symptoms along with three other symptoms for at least a 2-week period suggest a diagnosis of depression

Somatic syndrome is a specific subtype of depression characterized by at least four of the following: (1) loss of interest or pleasure, (2) lack of emotional reactivity to normally pleasurable surroundings and events, (3) waking in the morning 2 hours or more before the usual time, (4) depression worse in the morning (diurnal variation in mood), (5) psychomotor retardation or agitation, (6) loss of appetite and/or weight (often

defined as 5 percent or more of body weight in the past month), or (7) marked loss of libido.

Less than a third of cases of depression are diagnosed in primary care. Knowledge of depressive symptoms does not seem to be an issue. It may be that patients do not discuss symptoms (feelings of hopelessness), feel it is embarrassing or stigmatizing (fear of labels, medication or admission) or present with symptoms that redirect attention elsewhere (e.g. somatic presentation, alcohol or substance use, anxiety disorders or complicated grief). Somatic presentation seems to be a key factor with diagnosis rates three times less when there is no obvious psychological factor in the presentation, as in the case of this woman. A simple rule of thumb is to ask screening questions for depression when there are three or more somatic symptoms irrespective of their cause. Somatic presentations have been reported to be more common in certain ethnic minorities; however, somatic presentations are common both in primary care and in secondary care where in specialties such as neurology, rheumatology or cardiology up to 40 percent of patients may present with medically unexplained symptoms. Diagnosis improves with good communication skills in the doctor: better eye contact, open- ended questions, re-contextualizing physical symptoms to psychological causes using questions such as ‘are you experiencing any stress?’ or ‘do you think these symptoms may be due to stress?’ Allowing enough time is important, and this patient should be offered a longer appointment to explore her symptoms in depth.

Key Points
<ul style="list-style-type: none">- Depression may often present with somatic symptoms in primary care.- Screen for core symptoms of depression when there are three or more somatic symptoms present.

CASE 14

(History, constantly tearful)

A 26-year-old woman complains of being constantly tearful for no clear reason that she can identify. She feels that given she has just had her first baby she should be feeling on top of the world. She reports that her recent pregnancy and birth were straightforward and she had been looking forward to the arrival of the baby. She is married and has good family support. The baby is fine although feeding has been difficult to establish.

(Mental state examination)

The woman looks red-faced and tired. She makes good eye contact. She is tearful. She says that her thoughts tend to focus on worrying about the future and the baby, but that she can also laugh and enjoy herself when she sees people she is close to. She can smile at interview. She has no hallucinations or delusions and has no thoughts of harm to herself or the baby. She believes her symptoms are present because she is exhausted.

(Questions)

- 1) What further information do you need to make a diagnosis?
- 2) What is the likely diagnosis?

3) How would you manage this case?

(Answer)

The main considerations are whether this is ‘baby blues’ or whether something more serious is going on such as puerperal depression or puerperal psychosis. Establish how long ago the woman gave birth and consider the symptoms of baby blues (below). Given the symptoms and the absent history of depression it is most likely that this woman has the ‘baby blues’. These are often linked to hormonal changes 3 or 4 days after delivery as pregnancy hormones drop and milk production begins. Sleep deprivation and exhaustion inevitably play their part. There are large emotional, social, family and practical adjustments to be made when a very dependent baby arrives within a family, and this may be very daunting. It is always important to exclude the more serious postnatal depression especially if more time has elapsed since the birth of the baby (e.g. 3 or 4 weeks). You will find that a proportion of women with postnatal depression will have also been depressed at some point in the last year when a good history is taken. Baby blues affect 60 – 80 percent of women usually appearing after the third day postpartum and resolving within a week.

Symptoms of baby blues
Low mood, Emotional distress and liability, Tearfulness, Over-sensitivity, Anxiety, Irritability, Fatigue, Difficulty sleeping, Worry about minor problems, Poor concentration, Some mothers have pains for which there is no obvious medical cause, Being unwell generally with no apparent cause and symptoms

There may also be anxiety about being a mother and looking after the baby. These feelings are within the range of normal feelings for women who have recently given birth. They

last only a few days but can still be quite frightening especially if they take the woman by surprise. No treatment is necessary other than reassurance, support from family and friends, rest, and time. A mother who has the blues should get as much rest as possible. Affected mothers may be over-sensitive about what is said to them by relatives and medical staff, so reassurance and tact and empathy from the staff can be very beneficial at this time. The tearfulness and anxiety will usually settle without any intervention. It is important however that the situation is monitored as, if the symptoms do not settle or are accompanied by suicidal thoughts, then the diagnosis may need to be reviewed. It is also important to watch for any difficulties in looking after the baby's needs. If the symptoms are severe or persist beyond 2 or 3 weeks after the birth, more active treatment may be warranted and the patient should be reassessed.

Key Points
<ul style="list-style-type: none">- Baby blues is very common but is short lived- Reassurance and support are usually all that is required- Reassessment is useful to monitor progress- The baby's welfare should be monitored.

CASE 15

(History, Voices comment on everything I do)

A 24-year-old man presents to casualty having got into a fight as he thought he was being watched and felt threatened. He appears to have fractured his thumb but is reluctant to let you examine him or order an X-ray. He looks suspicious and wary.

When asked about his concerns he says that over the last few months he has been carefully monitored by government agencies. He has been hearing a voice out loud giving a running commentary on his thoughts and these are being broadcast to the government. Any machine enables the government to get inside his head and the voice is telling him it would be unwise to face the X-ray machine. The voice is not one that he recognizes, and it is sometimes derogatory, telling him he is stupid for giving his thoughts away for free. Initially the voice came and went but over the last few weeks it is present almost constantly and he cannot always sleep because even when he sleeps the voice comments on what he is thinking. He is exhausted. The man is absolutely convinced that the government is after him but he cannot explain why. There is no previous history and he denies any substance use. Until a few weeks ago he had been working as a kitchen assistant but was sacked for leaving jobs unfinished. There is no family history of any psychiatric illness.

(Mental state examination)

The man looks unkempt. He is wary and looks quite frightened and agitated. His eye contact is fleeting and he constantly looks around him in a perplexed manner. His speech is rambling and he does not express himself coherently. He occasionally uses words that you have not heard before and repeats them as though they have some significance. He does not come across as depressed. He has delusions of persecution. He has auditory hallucinations that provide a running commentary on every aspect of his behavior. He has thought broadcast and thought withdrawal. He is oriented in person, but unclear about the time. He seems aware that he is in hospital but not quite sure why.

(Questions)

- 1) What is the likely differential diagnosis in this case?
- 2) What is the significance of the running commentary?
- 3) What other symptoms may be commonly associated with this type of auditory hallucination?

(Answer)

The differential diagnoses are schizophrenia, schizoaffective disorder, drug-related psychosis and organic medical conditions. To make a diagnosis of schizophrenia, the symptoms and signs should be present for at least 1 month (as per *International Classification of Diseases, Tenth Revision [ICD-10]* criteria) and impact upon social and occupational or educational functioning. The following are usually present: delusions, hallucinations, formal thought disorder, 'negative' symptoms and abnormal behavior. A delusion is a firmly held idea that a person has despite clear and obvious evidence that it is untrue. Common delusions in schizophrenia include:

- Delusions of control: Belief that one's thoughts or actions are being controlled by outside, alien forces (passivity). Common delusions of control include thought broadcasting where private thoughts are being broadcast or transmitted to others, thought insertion (thoughts being planted in their heads) or thought withdrawal (thoughts being taken from their heads). Thought passivity is the terminology used to describe control of one's thoughts.
- Delusional perception: A real perception triggering a sudden delusional belief.
- Delusions of persecution: Belief that others want to do the individual harm.

These persecutory delusions often involve bizarre ideas and plots.

- Delusions of reference: A neutral environmental event is believed to have a special and personal meaning. For example, a person with schizophrenia might believe an innocuous phrase on TV is intended to send a message meant specifically for him or her.
- Delusions of grandeur: Belief that one is a famous or important figure or the belief that one has unusual powers.
- Somatic delusions are false beliefs about your body; for example, that a terrible physical illness exists or that something foreign is inside or passing through the body.

Hallucinations can be experienced in any of the sensory modalities and include:

- Auditory hallucinations (hearing voices in external space that other people cannot hear). Certain types of auditory hallucination are diagnostic of schizophrenia. These include hearing voices providing a running commentary on the person's behavior or thoughts, two or more voices conversing with each other in the third person about the person, or if the individual hears his or her thoughts being echoed back.
- Somatic hallucinations (these suggest schizophrenia or an organic cause).
- Visual hallucinations (seeing things that are not there or that other people cannot see).
- Tactile, olfactory or gustatory hallucinations.

Formal thought disorder is a persistent underlying disturbance of conscious thought that is usually seen through spoken and written communication. This involves fragmented thinking experienced by the listener as being 'un-understandable' or the train of thought or associations between statements as disconnected. They may respond to queries with an unrelated

answer, start sentences with one topic and end somewhere different, speak incoherently or say illogical things. There may be ongoing disjointed or rambling monologues in which a person seems to be talking to himself or herself or imagined people or voices. People with schizophrenia tend to have trouble concentrating. Some use neologisms, which are made-up words or phrases that only have meaning to the patient, or they exhibit perseveration, which involves the repetition of words and statements. Catatonic behavior is sometimes present. Negative symptoms reflect the reduction or absence of mental function and include reduced motivation, reduced use of speech and affective flattening.

Key Points
<ul style="list-style-type: none">- Schneider first rank symptoms described in 1939 remain the cornerstone of the diagnosis of schizophrenia. They include: Thought insertion; thought withdrawal and thought broadcasting- Running commentary third person auditory hallucinations and thought Techo-delusional perception, passivity phenomena, delusions of control and somatic hallucinations

CASE 16

(History, I only smoked a bit of cannabis and took a couple of es)

A 21-year-old man presents in an extremely frightened state. He is absolutely convinced that he has been followed and his life is at risk. When walking through town he was sure people were watching him, talking about him and planning how to kill

him. He can trust no one, including his friends. He has come to the hospital rather than go to the police because he believes the police are behind the conspiracy. He believes they have installed surveillance cameras in his flat and have been watching him. He feels others are jealous of his talents and success. He is convinced he has special powers and that is how he found out about the plots against him. He has had to start carrying a knife so he can protect himself from all his enemies. The man has had no previous contact with psychiatric services and he has no medical history of note. All was well until the last few days. His sister recalls that about 6 weeks ago her brother and a few friends went to a music festival. She is aware that his friends have smoked cannabis and taken Ecstasy (E), but she thinks it is unlikely that her brother joined them. He does not smoke and has no prescribed medications. The man is about to begin his final year at university. He has been studying physics and philosophy at university. He and his girlfriend finished their relationship just before the music festival. It was a reasonably amicable breakup, but had been a 3-year intense relationship. His interests include music and computer games. He has a good group of friends although over the last few days he has been avoiding them as he feels threatened by them.

(Mental state examination)

He is clearly frightened and suspicious, constantly looking around and trying to check what is going on. He makes intense eye contact when not looking elsewhere. He struggles to focus on the interview. His speech is rapid and his thoughts are not coherent. He jumps around from topic to topic. His mood is labile in that at times he seems to settle down but then quickly becomes alert and appears to be overactive. He has delusions of persecution and rather grandiose ideas about his own skills. He has auditory hallucinations, which tell him that he should kill if

he needs to. He thinks the cameras in his house are being used to monitor his thoughts but he does not quite have thought withdrawal. He does not have any self-harm ideation. He is oriented in person in that he knows who he is, but he is not orientated in time or place. His short-term memory is poor and his long-term recall is variable as he is easily distracted.

(Questions)

- 1) What is the differential diagnosis?
- 2) How would you manage this man?

(Answer)

The differential diagnosis includes organic psychosis (given his age and recent circumstances drug-induced psychosis would be a high possibility), schizophrenia and bipolar disorder. Brief reactive psychosis may also be worth considering. In a reactive psychosis, psychotic symptoms may arise suddenly in response to a major stress, such as a death in the family or other important change of circumstances. Symptoms can be severe, but the person makes a quick recovery in only a few days.

With the short time frame it is likely that he has drug-induced psychosis. The acute management involves managing his risk. There is a moderate to high risk of him hurting someone given his persecutory delusions. The fact that he thinks he is being watched and that his thoughts may be monitored means careful ongoing review is required to monitor his mental state. Given his delusions and the level of risk, hospitalization would be likely and medication may be necessary.

Using (or withdrawing from) drugs and alcohol can cause psychotic symptoms. Sometimes these symptoms will rapidly disappear when the drug is out of the system and the acute biochemical changes wear off. Psychotic symptoms usually

occur during or shortly after (within 4 weeks) use of the substance. For some individuals, a predisposition to psychotic illness is triggered by the use of substances, particularly those that make more dopamine available at receptor sites such as amphetamines. However a range of other drugs may cause psychosis including alcohol, cannabis, LSD, cocaine, MDMA (Ecstasy) and withdrawal from benzodiazepines. It is important to realize that the trends in illegal substances are ever changing. Recently the use of ‘legal highs’ has been increasing. Legal highs are substances that have similar effects to illegal drugs like cocaine or cannabis. They are sometimes called club drugs or new psychoactive substances (NPS). Although substance misuse is common, severe adverse reactions are much less common. Those at risk of developing problems should abstain altogether.

Key Points
<ul style="list-style-type: none">- Drug-induced psychosis is usually brief but those who develop problems are at risk of developing the same symptoms if use continues.- Some people with a vulnerability to schizophrenia may precipitate psychotic symptoms with substance use.

CASE 17

(History, unusual persecutory beliefs)

A 23-year-old electrical goods salesman attends his general practitioner (GP) surgery with his mother. He is very articulate but reluctant to talk, insisting that only the police can really help him. He explains that over the past 6 months his boss and his colleagues have conspired against him. Initially this was to

dismiss him from his job but over the past few weeks they have conspired to kill him. He feels that they have been monitoring his activities and have even gone to the extent of bugging his flat and tapping his mobile phone. He is absolutely convinced of this and shows you some marks on the phone as evidence of it having been tampered with.

He insists, politely, that he will not allow a physical examination as this may present an opportunity to implant a microchip. In fact he is very worried that an old dental filling may be a transmitting device. He is preoccupied with these thoughts and is unable to distract himself. At work he feels constantly bombarded by his colleagues' nasty comments about him. He can hear them clearly even across the showroom. On one occasion he clearly heard derogatory voices from his manager's office on the other side of the building. He also knows that colleagues talk about him because of the way the price labels are arranged. His work has been affected. His boss has given him a performance warning and he sees this as further evidence of his boss's antipathy towards him. He feels that 'direct action' is now needed but he refuses to discuss this. He has contacted the police who have spoken to his colleagues. His mother indicates that the police say his colleagues admitted talking about him because his behavior has been strange, but according to the police the charges of conspiracy are baseless and they have asked him to seek psychiatric help. His mother feels that his concerns are 'over the top' but does not feel that her son is 'psychotic'. She feels that he is under a lot of stress following a break-up with his girlfriend 6 months ago and pressure at work. His mother requests medication for him. He flatly refuses, but says that he will consider it if you 'endorse' his letter to the local Member of Parliament and the Prime Minister about the refusal of the local police to help him.

(Questions)

- 1) How do you establish the diagnosis?
- 2) How do you deal with his request?
- 3) What do you tell the mother?

(Answer)

This man has a fixed belief that his colleagues are trying to kill him. Establishing that this idea is delusional involves proving that the belief is *false* or even if true held on false grounds (e.g. believing that colleagues are talking about him based on the arrangement of price labels). The belief is fixed and firmly held despite provision of evidence to the contrary and this is out of cultural norms. Gently challenging these ideas by providing evidence that is contradictory is vital in establishing the delusional nature of the belief. Providing alternative explanations, such as ‘could the marks on the phone be accidental damage?’, is an important part of history. So is further elucidation – ‘I find it difficult to understand how a dental filling could act as a transmitter’. He has firm *conviction* in the delusional idea. Assessment of other dimensions such as *preoccupation*, *interference with work* and *acting out* reveal that he is preoccupied with these ideas and that this is affecting his work and that he is planning to act in response to his delusional ideas by ‘direct action’. He is also hearing the voice of his colleagues across the showroom. Hallucinations have the quality of a true perception and occur in the absence of a real stimulus. It will be important to discover whether these are true hallucinations by verifying information about the showroom, the nature and content of the voices, and other examples that may be more clear-cut, such as hearing voices from a distant room while in the toilet. He has been experiencing culturally inappropriate and implausible delusions and apparent persistent auditory

hallucinations for more than a month and therefore meets the diagnosis for schizophrenia.

His request involves colluding with his delusional ideas which may secure short-term gains, but in the long term it will betray his trust and damage therapeutic engagement. Empathizing with the true distress he is experiencing on account of his symptoms and offering to help him deal with his distress (even if there is disagreement about what is causing that distress) is likely to secure a better therapeutic rapport. However, he has mentioned 'direct action' and this will require a detailed risk assessment exploring both ideas of self-harm and of violence. If this direct action is proposed against his colleagues, the police should be informed even if it involves breach of confidentiality. In any case, an urgent referral to the local psychiatry team is indicated.

His mother is very worried for him and is probably concerned about the label of schizophrenia or psychotic illness. Providing education about the illness, providing leaflets, signposting to a patients'/carers' group or to a website such as www.rcpsych.ac.uk or www.rethink.org are likely to reduce expressed emotion (excessive hostility, criticism or over-involvement) in the mother. Expressed emotion is a known negative prognostic factor and risk factor for relapse.

Key Points
<ul style="list-style-type: none">- Assessing delusions involves gentle challenging to establish firm conviction in the belief and assessing other dimensions such as acting out.- Collusion with delusional ideas damages therapeutic engagement.- Psycho-education and engagement with carers is important to reduce expressed emotion.

CASE 18

(History, abdominal pain in general practice)

A 26-year-old woman presents to her general practitioner (GP) with a complaint of abdominal pain. She has recently registered with this practice and is not known to this GP. She says that she has been experiencing discomfort in the epigastric region for the past 2 months and also complains of being bloated and being ‘full of gases’. A year ago she had been referred to the specialist by her previous GP. She was investigated and an ultrasound examination of the abdomen revealed gallstones. She then underwent an uncomplicated laparoscopic cholecystectomy but has continued to experience the same pain. She says that the pain is present all the time and is not related to any particular foods. She complains of fatigue and breathlessness on minimal effort. She has been suffering from chronic back pain over the past 6 years. She had been seen by an orthopedic specialist and underwent a magnetic resonance imaging (MRI) scan of the spine but no abnormality was detected. She attends regular physiotherapy sessions and has been using codeine phosphate 60 mg (up to four times a day) over the last 5 years. She has also

presented on several occasions bilateral knee pains and again investigations and specialist advice argued that there was no serious illness with a recommendation of normal exercise and good nutrition.

She is a single mother of two children aged 6 and 3 years. She lives in a two-bedroomed council flat, is unemployed and receives benefits. She has previously worked in a supermarket, a factory and a pub but did not hold any of the jobs for more than 6 months. Her relationships with the previous two partners (the fathers of the children) were volatile. Both partners had alcohol problems and were abusive towards her. She does not have any contact with her family and did not want to speak about them.

Examination of previous notes reveals that she has been a frequent attendee at her general practice. She has been investigated for urinary tract infections on several occasions but no evidence of infection has been found. She was referred to a gynecologist at age of 18 with complaints of dysmenorrhea, menorrhagia and was investigated for an ovarian cyst, and was given reassurance. There is no previous psychiatric history. She smokes 20 cigarettes per day and drinks 10 units of alcohol per week. She has never used illicit drugs.

(Mental state examination)

She makes intense eye contact. She is dressed in bright clothes, talks about her symptoms animatedly and describes them in great detail. She is preoccupied with her various symptoms. She states that she feels low in her mood and admits that she finds it difficult to cope with her children. She has no thoughts of self-harm or suicide. She believes that the doctors have not been able to diagnose her problems and that she has been suffering due to their incompetence. She wants to be referred to a specialist for her abdominal pain.

(Physical examination)

There is no guarding or rigidity but she winces visibly on palpation of the abdomen. No other abnormality is detected.

(Questions)

- 1) What is the differential diagnosis?
- 2) How would you manage this patient?

(Answer)

This woman has symptoms suggestive of somatization disorder. She has multiple, recurrent and frequently changing physical symptoms that have been present for more than 2 years. She has undergone various investigations which have not been able to account for her numerous physical problems. She is preoccupied with her symptoms and has had multiple consultations with various health professionals. She has gastrointestinal symptoms (abdominal pain), cardiovascular symptoms (dyspnea), genitourinary symptoms (investigations for urinary tract infection) and symptoms of pain. In patients suffering from this disorder there is often a refusal to accept reassurance that there is no medical reason for symptoms. Differential diagnoses to be considered include the following:

- 1) Medical illnesses: Illnesses that may explain the patient's symptoms should always be ruled out before a diagnosis of somatization disorder is made.
- 2) Depressive disorders: Patients with depressive disorder may experience somatic symptoms. This may particularly be a problem in people who have an inability to express emotions (alexithymia).
- 3) Anxiety disorders: Symptoms of anxiety related to autonomic arousal can be mis- taken for somatization.

The autonomic nervous system itself can generate a range of real physical symptoms.

- 4) Hypochondriacal disorder: In hypochondriasis there is a preoccupation with the fear of having a serious physical disease and often the patient refers to a particular illness by name.
- 5) Intentional production of physical or psychological symptoms for assuming a sick role (factitious disorder/Munchausen syndrome) or for external purposes due to economic or legal reasons (malingering).

Detailed examination of previous medical notes to check the frequency of contact with health professionals and results of previous investigations help clarify the diagnosis. Relevant investigations may be needed to rule out physical illnesses that might explain the current symptoms. Patients should be dealt with in a sensitive manner without apportioning blame. It is important to reassure her that somatization does not imply that she is faking these symptoms. Some clinicians explain it as a close connection between mind and body, where stress in one domain can be experienced readily as real symptoms in another. A multidisciplinary approach would be required with emphasis on good communication between various professionals. Further follow-up should be with a single identified professional and it is important to discourage unscheduled appointments. The goal should be to build a rapport with the patient so that she is able to gain more insight into her symptoms and focus on any emotional triggers. The patient should always be informed before making a referral to a psychiatrist. Comorbid depressive disorder may be treated with antidepressant medication and cognitive behavior therapy may help with depression, anxiety or somatization.

Key Points
<ul style="list-style-type: none">- Multiple somatic symptoms may indicate depression, anxiety or rarely somatization disorder.- Rule out medical illness, malingering and factitious disorder (Munchausen syndrome).- Avoid over-investigation and ensure all specialist reports are conveyed to all involved in treatment.

CASE 19

(History, There is something wrong with him E)

A 10-year-old boy presents with anxiety and refusal to leave the house unless both of his parents are with him. He is reported to have ‘panic attacks’ during which he hyperventilates as he struggles to breathe, feeling dizzy and shaky. These can last up to 10 minutes or so and only seem to resolve when his parents reassure him that they will both stay with him until he is better. Although he is reluctant to go to school, he does attend as long as he is accompanied by both parents and is promised that they will be picking him up. When he is in school he is settled and there are no obvious features of anxiety. Staff notes that he fits in well with peers and does not cause them any concern although he is academically a little behind. His parents are keen for their son to be offered individual therapy to help with his anxiety. Both parents have long-standing anxiety problems of their own but feel that they deal with these away from their son and he is unaware of their anxieties. They both feel that their son’s anxiety is a significant factor in the stress that they are experiencing and they have begun wondering if they can continue with their marriage.

(Questions)

- 1) What do you think the main problem here might be?
- 2) How might you manage this situation?

(Answer)

Although the boy seems to be presenting with anxiety it should be evident that there are various family factors at play. Individual therapy of any sort is unlikely to be a helpful option in this case as even if the boy is anxious, the factors that maintain his anxiety will remain unaddressed. In a case such as this it is especially useful to apply the framework for considering predisposing, precipitating and perpetuating factors and then decide where treatment can be most effectively targeted.

Factor	Possible intervention	Comment
The genetic predisposition to developing anxiety.	Treatment targeted to specific genetic markers not available currently.	Awareness is helpful as this may allow an individual or family to plan to put coping strategies in place.
The features of anxiety that appear to be present.	These symptoms may cause alarm and evoke parental responses that perpetuate the presentation.	Can be unhelpful to get into debate about whether these symptoms are real or not as that rarely helps move the situation forward. It may be helpful to think of these as an

		expression of his distress.
Parental responses to initial anxiety may lead to specific behaviors.	Parent psycho-education about anxiety and parental maintenance of clear expectations and boundaries through parenting programs: helping the parents change their ways of providing support – avoid giving reassurances or making blanket promises that perpetuate the problems.	It is important not to be critical of the initial strategies the parents may have used but to understand that they might have been the only strategies that were available at the time. The strategies the parents have used may have been initially helpful but their continued use has made them unhelpful as they have unintentionally maintained the problems.
Parental anxiety – may be predisposing in terms of genetic factors, but may also be precipitating	Ensure that parental anxiety is being effectively managed through cognitive behavior therapy, self-help programs and psycho-education.	Although the parents are insistent that their anxiety is kept from their son, most children are fairly aware when all is not well with the family. They

and perpetuating.		will often imagine the situation is worse than it may be because they can only guess at what they are not being told.
Parental relationship difficulties may be precipitating and perpetuating.	Ensure the parents are aware of the impact of their relationship on their child.	Children pick up on parental tensions and in this case it may be that the boy is unconsciously becoming the glue in their relationship, e.g. by requiring both of his parents' presence to ensure that they do not separate.
Lack of clear communication in the family may serve as a precipitating and perpetuating factor.	Family work or family therapy.	Different members of the family may feel that in not raising issues they are helping the family but what may be happening is that there is much miscommunication

		and misunderstanding.
Being behind academically – this may be predisposing, precipitating and perpetuating.	This may mean that the boy has some learning difficulties or disability. Identify it and ensure the appropriate supports are in place.	The reason this factor may be predisposing is that if he is unable to understand information he may become anxious. Not understanding or misunderstanding familial issues may precipitate or perpetuate any features of anxiety.
Lack of any anxiety in school.	This is important as it indicates that individual therapy may be of limited benefit, but also that he can cope with his worries.	This highlights the need to look at the wider picture. The lack of anxiety in the school context supports the rationale for addressing the family issues as a priority.

Key Points

- A child's presentation to mental health services may reflect wider systemic issues that need addressing to help resolve or improve the situation.

- In assessing child mental health presentations and their management, particular attention may need to be paid to the parental understanding and management of the child.
- It may be more challenging to gain parental agreement that the management of this case needs for work to be undertaken with them rather than with their son alone.

CASE 20

(History, A drink a day to keep my problems at bay)

A 54-year-old man presents with abdominal pain for several days. The pain is a constant dull ache which is central and radiates to the right. He has had some associated vomiting but the vomit is usually bile as he has not been eating well. He has on a few occasions vomited some blood (haematemesis) but says that this was after particularly heavy consumption of alcohol. He is not aware how many units he drinks in a week but reluctantly admits he drinks every day. His breakfast often consists of a drink as he feels very shaky otherwise. Once he has had a drink he feels better able to manage the day ahead. He lives alone in a bedsit and eats poorly.

He says he was sacked for taking time off work for physical complaints. He has been separated from his wife for 6 months and no longer has regular contact with his children who he says have turned against him. The marriage had been difficult for some years because he was unable to hold down a regular job. He held a middle manager's post until he turned 50. Since then he has had a series of short-term junior posts. He believes that this is a result of changes in local government and not related to his drinking.

(Physical examination)

He has a ruddy complexion, several spider naevi on his face and red palms. He has a body mass index of 32. He is slightly tender in the right hypochondrium and lumbar regions and in the epigastric region of his abdomen.

(Mental state examination)

He smells of alcohol. He is reasonably well dressed. He looks unwell and is clearly uncomfortable. He has good eye contact. His speech is normal. He admits he has felt low as his life has deteriorated over the last few months but says he is not 'depressed'. He can still enjoy himself and is reactive at interviews. He does not have any self-harm ideation. He has little hope for the future. There is no evidence of psychosis. He is oriented in time, place and person. His short-term memory is poor but there are no long-term memory problems.

Investigations
<ul style="list-style-type: none">- Haemoglobin level 12.4 g/dL, reference range [13.3–17.7 g/dL] Mean corpuscular volume (MCV) 109 fL [80–99 fL]- White cell count $8.8 \times 10^9/\text{L}$ [$3.9\text{--}11.0 \times 10^9/\text{L}$]- Platelets $280 \times 10^9/\text{L}$ [$150\text{--}440 \times 10^9/\text{L}$]- Sodium 139 mmol/L [135–145 mmol/L]- Potassium 3.5 mmol/L [3.5–5.0 mmol/L]- Urea 2.3 mmol/L [2.5–6.7 mmol/L]- Creatinine 75 $\mu\text{mol/L}$ [70–120 $\mu\text{mol/L}$]

(Questions)

- 1) What might his liver function tests (LFTs) show?

- 2) What are questions associated with the CAGE questionnaire?
- 3) What are the features of alcohol dependence?
- 4) What are the physical complications of alcohol problems?

(Answer)

His LFTs are likely to show the following:

- Elevation of alanine aminotransferase (ALT) also known as alanine transaminase.
- Elevation of aspartate aminotransferase (AST) also known as aspartate transaminase (two- to fourfold).
- ALT is usually greater than AST (ratio of greater than 2 suggests alcoholic liver disease).
- A switch to AST greater than ALT may indicate cirrhosis.
- Likely to be elevations of gamma-glutamyl transpeptidase (GGT), alkaline phosphatase and ferritin.

LFTs in this man's case were as follows:

Investigations
Alkaline phosphatase ALT GGT Bilirubin <i>Levels</i> 351 IU/L 276 IU/L 865 IU/L 24 $\mu\text{mol/L}$ <i>Reference range</i> 30–300 IU/L 5–35 IU/L 11–51 IU/L 3–17 $\mu\text{mol/L}$

The CAGE questionnaire
This asks the following key questions: <ol style="list-style-type: none"> 1. Have you ever felt you should <i>cut</i> down on your drinking? 2. Have people <i>annoyed</i> you by criticizing your drinking?

- | |
|---|
| <ol style="list-style-type: none">3. Have you ever felt bad or <i>guilty</i> about your drinking?4. Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover (<i>eye-opener</i>)? |
|---|

The threshold for the CAGE suggesting potential problems is two out of four. It is clear in this case that this man has a significant problem. The following signs and symptoms strongly suggest *alcohol dependence syndrome*:

1. Strong desire to take alcohol with a narrowed repertoire of drinking.
2. Dominance of drinking over other responsibilities.
3. Tolerance to alcohol – that is, we need more and more alcohol to produce the same effects.
4. Physiological withdrawal state if alcohol is reduced or ceased.
5. Use of alcohol to prevent withdrawal.
6. Preoccupation with alcohol use and compulsion to drink.
7. Return to drinking even after periods of abstinence.
8. Persistence of alcohol use despite the harmful effects (may be physical, social or emotional).

It is often comorbid with other mental illnesses such as depression, social anxiety, anxiety, obsessive-compulsive disorder, other substance misuses and personality disorders. The physical complications of alcohol misuse include liver disease such as fatty liver, alcoholic hepatitis or alcoholic cirrhosis. High blood pressure and other cardiac problems can occur especially if drinking is compounded by poor diet, low exercise and obesity. There is an increased likelihood of cancer of the liver, stomach, colon, rectum, lung, pancreas, larynx and oesophagus. Pancreatitis, epileptic seizures and sexual dysfunction are also common. Abrupt abstinence in someone with alcohol dependence syndrome can lead to delirium tremens, which

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includes shaking, sweating, diarrhea and seizures as well as hallucinations and an acute confusional state. This requires urgent medical attention as it can be life threatening.

Other physical signs in acute intoxication are slurred speech, dizziness, clumsiness, unsteadiness, blackouts, collapse and somnolence. Weight loss can occur with poor nutrition, or in end-stage disease. Peptic ulceration and pancreatitis can lead to abdominal pain. The skin can often give tell-tale signs including redness in the face or cheeks, rhinophyma, palmar erythema, hand ‘liver flap’ and numbness or tingling of the fingers. Malnutrition and pseudo- Cushing can also create distinctive changes. It is common for social problems and family dysfunction to go hand in hand with alcohol dependence. This is clearly the case with this man. Given the complexity of this case and the seriousness of the presentation the safest way to manage him is likely to be through admission to enable both physical and mental health problems to be addressed.

Key Points
<ul style="list-style-type: none">- Alcohol misuse has a range of physical, social and psychiatric complications.- Listen carefully to how the CAGE questions are answered as many may be less than forthcoming.- A significant number of acute medical admissions are directly or indirectly related to alcohol (including in the elderly).

CASE 21

(History, Paracetamol overdose)

A 24-year-old woman has taken an impulsive overdose of 30 paracetamol tablets. Earlier in the evening she had been drinking and ended up in an argument with her boy- friend. She returned home and thought about the evening. She felt very angry and unhappy and impulsively took the overdose. She is sure she did not take anything else. There is no suicide note and about half an hour after taking the overdose she called a friend who called an ambulance. She regrets the overdose and up until the argument with her boyfriend had not had any problems or issues that worried her. As a teenager she had a spell when she used to cut herself but this has not happened for at least 8 years. She has not taken any previous overdoses. She is rather embarrassed and upset.

(Mental state examination)

Her eye contact is normal. She looks well. Her speech is normal. She has no thought disorder. Her mood is stable and there is no current deliberate self-harm ideation. She does not express any feelings of hopelessness. She can enjoy herself and she has plans for the future. She has no evidence of any delusions or hallucinations. She has good insight into what has happened.

(Questions)

- 1) What investigations, if any, would you do?
- 2) How would you manage her?

(Answer)

The key questions are as follows:

- 1) Is the patient presenting after a single or staggered overdose?

- 2) What is the time of the ingestion?
- 3) What are the blood tests showing?

An overdose of paracetamol (especially if greater than 7.5 g which is usually 15 tablets) that presents within 1 hour is treated using charcoal, which reduces gastrointestinal absorption. Early presentation of a paracetamol overdose is easier to manage than late presentation. If presentation is between 1 and 4 hours a blood test is required after 4 hours of ingestion to assess the levels of paracetamol. If there is any doubt about the drugs taken, it is always safest to err on the side of caution. Emergency departments have charts showing the relationships between blood levels and lengths of time since ingestion, and thresholds for further treatment. Access to TOXBASE, the primary clinical toxicology database of the National Poisons Information Service, is available online in all NHS hospitals and can be consulted for all up- to-date protocols in managing cases of overdose and poisoning. Patients at increased risk of liver damage from lower blood levels of paracetamol include the following:

- Regular alcohol intake above recommended levels (14 units for women and 21 for men)
- Regular use of enzyme-inducing drugs (e.g. carbamazepine, phenytoin)
- Conditions including glutathione depletion (such as HIV, cystic fibrosis, eating disorders)

Hepatocyte damage can occur from metabolites of paracetamol breakdown including *N*-acetyl-p-benzoquinone imine, leading to liver failure. If the blood test after 4 hours indicates the need for treatment or there is uncertainty about the time of ingestion or the amount taken, the treatment is intravenous *N*-acetylcysteine. This replenishes glutathione, important in conjugating the

damaging metabolites. Oral methionine can also be used for the same purpose.

In this case, she will require a blood test and may need treatment with *N*-acetylcysteine. A psychiatric assessment the day after overdose is common practice to plan any supportive interventions that might be necessary. This may include simple medical follow-up, individual therapy, group or family work or pharmacotherapy. One clear issue for this woman relates to her coping ability under adversity. The opportunity to provide supportive psycho-education should not be missed.

Key Points	
-	Paracetamol overdoses are the most common overdoses with many patients not knowing the potential liver complications, including liver failure and death.
-	It is always important to conduct a detailed mental state examination and consider referral for psychiatric assessment.
-	Early presentation of paracetamol overdose is less complicated than late presentations.

CASE 22

(Fear history, Fear of Spiders)

A 20-year-old woman comes to see her general practitioner (GP) saying that a fear of spiders is causing her significant problems. When she sees a spider she becomes fearful. She sweats, shakes and her heart rate increases. She needs to get out of the room very quickly and requires family members to come and remove the spider. She cannot re-enter the room until she is certain the spider is gone. She cannot sleep in a room if she has

seen a spider there and could not go on two school trips because of worries about encountering a spider.

She has been offered a job in a hotel as an apprentice domestic supervisor. She is keen to take it, but does not think she can do the job with her fears. She is also thinking of committing to a new relationship and up until now her family has helped her solve her problems. She has not revealed the extent of her difficulties to her boyfriend. She requests diazepam tablets, because her aunt uses these for her fear of aeroplanes, and believes them to be effective for phobias.

(Mental state examination)

When she comes in it is noticeable that she is on edge. She scans the room quickly and explains later that this was to check for spiders and that she does this routinely. Once she has done this she is relaxed and discusses her fears. She explains that they are ‘irrational’ and she knows that most spiders are harmless, but nevertheless experiences very intense anxiety. She has no evidence of other mental illness and no symptoms or signs of psychosis or depression.

(Questions)

- 1) What do you say in reply to her request for diazepam?
- 2) What is the treatment of choice?

(Answer)

1. A phobia is a persistent fear of a situation or object, with avoidance of the feared situation or object and powerful anticipatory anxiety. There is usually insight that the fear is irrational or out of kilter with the true risk of the situation.
2. Medication would not be used with spider phobia. Dependency is common with benzodiazepines.

The treatment of choice for spider phobia is cognitive behavior therapy (CBT). This involves desensitization where exposure leads to habituation. A hierarchy of feared situations is built up, and client and therapist work their way through this hierarchy. This may, for example, begin with pictures, plastic spiders, cartoons and videos, and move on to dead and then live spiders. Different-sized spiders can be used. At first these may be in jars or Perspex boxes then they may be put onto the table or into the therapist's hands. Many therapists will finish by putting a live spider on the table, teaching the client to cover it with a jar, sealing the jar with a card and then depositing the spider outside. The therapy can also lead to people touching live spiders, letting them run on their hands or using a 'spider hoover' to catch and deposit them outside. The end goal is usually mutually agreed and reviewed as it may change when therapy progresses.

Cognitively, the therapist may use psycho-education explaining how humans are genetically programmed to fear certain shapes (as part of natural selection). Discussion about the purpose of fear and a systematic assessment of the dangerousness

of spiders compared to other creatures (bees, wasps, rats, etc.) can help in the appraisal of threat. Personification of the spider as vulnerable (as opposed to threatening) and an understanding of how the human mind automatically interprets the body language of a spider as threatening can all help. A rational understanding of changes in fear after habituation goes hand in hand with the behavioral strategies and desensitization. Finally, the woman's memories of not coping in the presence of spiders need to be replaced through therapy and supplemented with many new experiences of coping. Much can be done in sessions, but homework also allows the client to see that he or she can cope on his or her own without help. The therapy should provide plenty of healthy experiences of coping with spiders that establish confidence.

Key Points
<ul style="list-style-type: none">- Spider phobia is common.- Benzodiazepines can lead to dependence and are not usually used in most phobias.- Cognitive behavior therapy is the treatment of choice.

CASE 23

(History, Déjà vu and amnesia)

A 32-year-old man presents with a several-month history of strange experiences. He occasionally has a strange metallic taste sensation, which may last for a few seconds up to about a minute. He then has experiences that are difficult to describe. He imagines it is a bit like an out-of-body experience. There are times he has a feeling that everything around him is a repeat but

at other times even familiar people and features completely baffle him. After some minutes he is himself again but is often slightly disoriented and is often told that he has behaved rather oddly, for example, repeating automatic actions such as lip smacking. He himself has no memory of this. There is a sense of something having been lost but he is not quite sure what. These episodes are increasing in frequency and his behavior is becoming stranger during them, which is the reason for seeking help now. Another feature that has worried him is that recently he has experienced auditory hallucinations. The hallucination does not last long, but is frightening. He has now become aware that the metallic taste and auditory hallucination precede the episodes and behaviors he cannot remember. He has not been witnessed collapsing or having any tonic- or clonic-type body movements. Over the last few months he has also had quite severe headaches, but these do not coincide with the episodes described earlier. There is no previous medical history of note, and he has not recently experienced any trauma. He has no family history of psychotic experiences or seizures. He is not on any medication of any sort.

(Mental state examination and physical examination)

He is well presented and neither physical nor mental state examination reveals any abnormalities.

(Questions)

- 1) What is the most likely explanation in this case?
- 2) What is the differential diagnosis?
- 3) What investigation is likely to be the most useful?

(Answer)

The most likely explanation is complex partial seizures of temporal lobe epilepsy (TLE). The features of seizures beginning in the temporal lobe vary from patient to patient in length and intensity but certain patterns are common. These auras are called

simple partial seizures and occur in about three-quarters of people with TLE. They occur while consciousness is maintained. There may be a mixture of different feelings, emotions, thoughts and experiences, which may be familiar (sense of *deja`vu*) or completely foreign (*jamaiz vu*). Hallucinations of voices, music, people, smells or tastes may occur. A simple seizure or aura can evolve to more complex or generalized seizures, where consciousness is impaired. Auras may last for just a few seconds, or may continue as long as a minute or two. If they spread to local areas in the temporal lobes they become complex partial seizures. About 40 percent to 80 percent of people with TLE perform repetitive, automatic movements (called automatisms), such as lip smacking and rubbing the hands together. Some people have only simple partial seizures and never have a change in consciousness. In about 60 percent of people with TLE, the seizures spread leading to a grand mal seizure. After the complex partial seizure or secondarily generalized seizure, patients are often confused for several minutes and then gradually recover.

Differential diagnosis
<ul style="list-style-type: none">- There are several other possible things to consider in differential diagnosis. Consider absence seizures. These have classic three per second spike and wave patterns on EEG. They are shorter, have no aura, no postictal confusion and are not associated with complex automatisms.- Frontal lobe complex partial seizures appear in clusters of brief seizures with abrupt onset and ending. There is a minimal postictal state. They may cause behavioral changes with vocalizations and complex motor and

sometimes sexual automatisms. In differentiating from TLE, there may need to be EEG localization.

- Panic attacks can present in strange ways and need to be considered.
- Occipital lobe epilepsy may spread to the temporal lobe and be clinically indistinguishable from a temporal lobe seizure.

The temporal lobes are the most common locations for the origin of partial seizures, which start in one localized area. TLE can start at almost any age. Some follow a head injury or an infection that affects the brain, such as meningitis, but for the vast majority the cause is unknown. There may also be other underlying causes such as a tumor or vascular malformation. EEG can confirm the diagnosis but false negatives are common. Magnetic resonance imaging can help in localizing seizure focus. Information and individual and family support to adjust are helpful. Medication is usually required to treat epilepsy and the majorities do well on the following drugs: carbamazepine, sodium valproate, topiramate, lamotrigine and oxcarbazepine. Surgery is an option for intractable epilepsy.

Key Points
<ul style="list-style-type: none">- TLE may masquerade as psychosis or severe anxiety.- Episodic illness should arouse strong suspicion of TLE.

CASE 24

(History, Self-harming, substance misuse and volatile relationships)

A 19-year-old woman with a 6-year history of self-harm attends the emergency department. Her self-harm is usually in the form of cutting, but every few weeks when she feels things are getting on top of her, she takes an overdose. The overdoses are usually impulsive and precipitated by a row with her boyfriend or mother. The relationship with the boyfriend is volatile and the police have been called out on more than one occasion when things have become heated and violent. The woman has alleged domestic violence but then retracts her allegations and the police have not taken any action against her boyfriend. There is also a long history of substance misuse, usually alcohol but she has also dabbled in all sorts of illegal substances. When under the influence she has had unprotected sex with men other than her boyfriend and has become pregnant on two occasions. Both times she chose to end the pregnancy feeling that if she did not her boyfriend would leave her. After each termination she had a period when she described herself as 'constantly suicidal'.

(Mental state examination)

Her eye contact is fleeting. She is distraught and shouting that she just wants to be left alone so that she can kill herself. She is verbally abusive and threatening violence if she is not given what she wants. She is irritable and agitated. She is unkempt and looks like she has recently been in a fight. Her speech is rapid but coherent. Objectively her mood is labile and subjectively she

says that she is depressed and life is not worth living. She says she is suicidal and wants to kill herself. She is angry as she feels she is being thwarted in this. She says there is no point in living, especially as her boyfriend has broken up with her. There is no evidence of any psychotic features and she is orientated in time, place and person.

(Questions)

- Given the definition of a personality disorder above, does this person have a personality disorder?
- What is the differential diagnosis?

Personality disorder
People with personality disorders have experiences and behavior that are markedly outside their societal norms. This demonstrates itself in enduring ways, impacting upon relationships, interpersonal functioning, emotion regulation, affective responses, impulse control and attributions about self and others.

(Answer)

The differential diagnosis is acute intoxication (alcohol/drugs), depression or emotionally unstable personality disorder (EUPD). The most likely primary diagnosis is EUPD. An alternative way of conceptualizing this involves the use of a multi-axial formulation that considers not only diagnosis but psychosocial factors and development. It includes an understanding of early life experiences and maladaptive coping and care seeking, as well as any organic or intellectual factors. The rich explanatory power of multi-axial classification systems makes them helpful for designing interventions. Very stressful or chaotic childhoods are commonly reported (e.g. physical and sexual abuse, neglect, hostile conflict and early parental loss or

separation). This often means that the features leading to the presentation are long-standing so long-term therapeutic interventions may be helpful. Multi-axial systems used in adulthood and childhood are slightly different.

Multi-axial classification (<i>Diagnostic and Statistical Manual of Mental Disorders</i>)
<ul style="list-style-type: none">- Axis 1: Clinical disorder- Axis 2: Personality and intellectual- Axis 3: Medical or physical condition- Axis 4: Psychosocial and environmental- Axis 5: Global functioning <p>This is slightly different from the multi-axial classification used in childhood</p>

The first step in management involves calming her down so a proper assessment of such factors can take place. A risk assessment is crucial because her safety is a concern. The social support available will need exploration. Even if she is not actively suicidal, admission may be unavoidable as there is a risk that she could harm herself in this volatile state.

EUPD is a condition characterized by impulsive actions, rapidly shifting moods, and chaotic relationships. There are two types (impulsive and borderline). With both of these there are:

- *Impulsivity* without thought of the consequences (e.g. unprotected sex or dangerous substance abuse)
- *Lack of self-control* with outbursts of intense anger or violence

The impulsive type is characterized by emotional instability and an inability to control impulses, with episodes of threatening behavior and violence occurring particularly in response to criticism by others. The borderline type is also characterized by

emotional instability. People with this type of personality disorder may experience severe doubts about their self-image, aims and sexual preferences that cause upset and distress. It is common to experience a strong and debilitating sense of emptiness and this can lead to self-harm and suicide threats. They are liable to become involved in intense but unstable relationships with regular emotional crises. Completed suicide occurs in around 8–10 percent of individuals with this disorder, and self- mutilation acts (e.g. cutting or burning) and suicide threats and attempts are very common. Recurrent job losses and broken marriages are common. Comorbidity with mood disorders, substance misuse, eating disorders (usually bulimia) or posttraumatic stress disorder (PTSD) is common. This disorder is more frequent in females than males. Emotional instability and impulsivity are very common in adolescents, but most adolescents grow out of this behavior. Personality disorder diagnoses are not made in adolescence because of the ongoing development of personality and the stigmatizing nature of the diagnosis. It should therefore only be carefully and cautiously applied. This disorder, like all personality disorders, is usually worse in the young adult years and gradually decreases with age. Into the 30s and beyond, the majority of individuals have attained greater stability in their relationships and working lives.

Key Points
<ul style="list-style-type: none">- The diagnosis of personality disorder requires detailed longitudinal history and should not be made on the basis of one interview.- This disorder often presents through self-harm and suicidal threats, but impulsive behavior is common across various spheres of life.

- Individuals with this disorder have often had chaotic childhoods and have inappropriate social supports and coping mechanisms. Interventions are best directed towards remedying these limitations rather than with pharmacotherapy.

CASE 25

(History, my husband won't let me go out)

A 23-year-old woman comes to see the general practitioner with her mother. She has been married for 4 years. Her mother has brought her because she was in two minds about whether to come. She is worried that it may make the problem worse. The general practitioner (GP) realizes quickly that he is going to need more than 10 minutes and has one other patient left. He sees this other patient first in another consultation suite and returns in order to give more time for the discussion. The woman is in tears when he returns and describes that she loves her husband but that he is very possessive of her, and has never been happy for her to go anywhere without him. He works on a computer during the day at a large insurance firm. Despite having trained at college in Child Care she is not currently working, mainly because her husband made it clear when they married that he wanted to be the main breadwinner and did not wish for her to work. He likes to stay in and watch television, and will usually drink a few cans of lager three or four nights a week. He does not usually drink to excess. She stopped her hobbies such as salsa lessons and going out with friends when they started seeing each other, about 3 months before they got married. He used to accuse her of flirting if he ever saw her laughing or smiling with any other man and

she began to restrict who she spoke to as a means of avoiding this. She explains that about 6 months ago her best friend, whom he never really liked, began encouraging her to go out with a group of four old school friends who meet at a line dancing group and go for a drink and meal afterwards. Her husband was not keen, but let her go. When she returned he was very suspicious and asked her numerous questions about what she had been doing and whether she spoke to any other men. She considered not going any more, but with the support of her best friend and mother, decided that she was doing no harm and that he may get used to the idea. She went on four more occasions. On each occasion when she returned he insisted on examining her underwear and was aggressive and abusive, calling her offensive names. After the most recent occasion he threw the contents of all her drawers around the bedroom and forced her onto the bed, shouting in her face. She says she has never thought of involving the police.

She does not know what to do, because she feels that if she never goes out she will feel trapped, but she cannot cope with his levels of suspicion and hostility. She thinks he needs help but does not know what to do next. The woman's mother says that she has always been a quiet girl and endorses her daughter's assertion that she has never been nor would she ever be unfaithful. The mother says that her son-in-law can be sociable and charming but has always been controlling of her daughter. He has superficial friends but no one visits the house and he does not visit anyone else so far as they are aware. He will sometimes have a drink with a work colleague on the way home, but never invites his wife and has not brought this friend home.

(Questions)

- 1) What are the possible causes and diagnoses?
- 2) What might the GP suggest happens next?

3) What treatments are available?

(Answer)

There are a few possibilities that should go through the GP's mind. The first is that this man has an alcohol problem and that over and above the drinking his wife sees he may be secretly drinking a lot more. This would amount to alcohol dependence syndrome. Alcohol-induced symptoms may also include psychotic symptoms such as hallucinosis or alcoholic jealousy. It is more likely that he has a dissocial or paranoid personality disorder.

Paranoid personality
<ul style="list-style-type: none">- Excessive sensitivity to setbacks- Tendency to bear grudges- Automatic tendency to see neutral events as negative- Tendency to center on the self/narcissism- Recurrent unfounded suspicions of infidelity or betrayal- Tendency to see conspiracy where there is none

If of delusional intensity, pathological jealousy could be a delusional disorder. This is characterized by a strongly held and persistent delusion. It is not the same as schizophrenia since it is not accompanied by all the other first-rank symptoms of schizophrenia such as thought passivity, auditory hallucinations, thought disorder and 'negative' symptoms of schizophrenia. It would be important to exclude other disorders such as psychosis, depression or an anxiety disorder, but these do not stand out from the history. It is possible he has undiagnosed Asperger syndrome, meaning he makes serious misjudgments about the motivations of others and that this leads to misinterpretations and paranoia.

Finally, it would be important to ask about past history and physical symptoms to see if there is any change in behavior or symptoms and signs that might lead to consideration of a physical illness such as space-occupying lesion. Again this is not a high possibility but should be considered. What happens next is not straightforward since the man in question is unaware that his wife has visited the surgery. There are no grounds for breaking confidentiality at this point although that may change in the future. The woman should be advised that were he to become physically abusive it would be appropriate to call the police. She should be given information about any local women's refuges and any domestic violence services. A confidential anonymous discussion with social services and other partners may be helpful to explore any safeguarding issues in the context of a vulnerable adult. Enquiries as to whether any trusted male members of the family may be able to approach her husband and suggest he seeks help also helpful.

The woman herself may have mental health needs and these should be considered. Does she need to see a counselor who could support her to work out a way of tackling the problem? Relate (local marriage guidance counseling) will often see individuals within a marriage in the first instance as a first step in finding solutions to such difficulties. It is possible she could find an appropriate time to suggest that they go together. While the problem is essentially his own, this shared approach may help him develop insight. Finally, the pertinent question: 'What keeps you together as a couple?' may be helpful by promoting thoughts about whether she wishes to stay in a relationship that is currently abusive.

Key Points
<ul style="list-style-type: none">- If it is possible to find a way of positively engaging people with pathological jealousy it can prevent long-term unhappiness for their victims.- Facilitating a mechanism of support (e.g. counseling) can be crucial as it prevents isolation and allows a rational perspective to be taken outside the context of the relationship.- Families can and should use the police if individuals are at risk.

CASE 26

(History, Intensely fearful hallucinations)

A 44-year-old man is admitted to an orthopedics ward with a fracture of the femur following a car accident. He is treated surgically and there are no postoperative complications over the next 2 days. On the third day of the admission there is rapid change in his behavior and he becomes verbally aggressive towards the nursing staff. He has been advised bed rest but tries to get up from his bed and is agitated. He is sweating, has tremors in both hands and is shouting at the nursing staff. The nurses try to restrain him but he resists actively. He is screaming that he can see snakes in the room and is terrified. He is disorientated and believes that he is in his office rather than in hospital. He is not able to recognize any of the doctors or nurses and becomes startled when the doctor's bleeding goes off. He has a history of heavy alcohol use over the past 15 years. He does not have any other medical or psychiatric history.

(Mental state examination)

His eye contact is not good. He appears distracted and looks across your shoulder and around the room. He is jittery and sweating, and is confused and disorientated. He is experiencing visual hallucinations which appear to be vivid and well formed. He is terrified apparently in response to these hallucinations. He is labile in his behavior which changes rapidly with periods of increased agitation and restlessness when he attempts to get off the bed. He has little understanding of what is happening to him and is unable to discuss this in any meaningful way.

(Physical examination)

He has a blood pressure of 160/100 mm Hg and a pulse of 130 beats per minute. His oxygen saturation in the air is 98 percent. He is febrile with a temperature of 38.4°C. He has coarse bilateral hand tremors and the extremities are cold and clammy and he is clinically dehydrated. He has palmar erythema.

Investigations
<ul style="list-style-type: none">- Haemoglobin level 14.2 g/dL, reference range [11.7–15.7 g/dL]- White blood cell count 9.5×10^9/L [3.5–11.0 $\times 10^9$/L]- Mean corpuscular volume (MCV) 111 fL [80–99 fL]- Sodium 128 mmol/L [135–145 mmol/L]- Potassium 4.3 mmol/L [3.5–5.0 mmol/L]- Urea 7.4 mmol/L [2.5–6.7 mmol/L]- Creatinine 84 µmol/L [70–120 µmol/L]- Alkaline phosphatase 406 IU/L [30–300 IU/L]- Alkaline aminotransferase 130 IU/L [5–35 IU/L]- Albumin 24 µmol/L [2–17 µmol/L]- Gamma-glutamyl transaminase 23 g/L [35–50 g/L]- Random blood glucose 181 IU/L [11–51 IU/L]

(Questions)

- 1) What is the differential diagnosis?
- 2) How would you manage this patient?

(Answer)

The patient is suffering from an acute confusional state, most likely delirium tremens (DT). Around 5 percent of patients admitted to hospital with alcohol-related problems have DT. There is a significant associated mortality at around 5 percent, and this is usually due to comorbid medical illnesses like infections, electrolyte imbalance and impaired liver and kidney functions. It occurs when a patient dependent on alcohol suddenly stops or greatly reduces the alcohol intake. The typical symptoms of alcohol withdrawal are tremulousness, perceptual abnormalities like visual hallucinations that can be vivid and intense, withdrawal seizures and impairment of consciousness. Tremors develop within 6–8 hours, hallucinations within 12 hours and seizures within 24 hours of cessation of drinking alcohol. DT typically develops by 72 hours post-cessation of alcohol use but can develop anytime within the first week. The full-blown symptoms of DT include tremors of the body, clouding of consciousness and restlessness with vivid and intense visual hallucinations. Patients can also experience auditory hallucinations and paranoid delusions. Other symptoms include fever, excessive sweating, palpitations, nausea and vomiting. It may present in a sudden and dramatic way in patients admitted to hospital with a problem unrelated to alcohol abuse. The symptoms typically get worse at night. Patients can represent a difficult management problem in acute medical wards due to their unpredictable behavior and the risk of acting out on perceptual abnormalities.

Differential diagnosis
<ul style="list-style-type: none">- Acute confusional states may be caused by infections (pneumonia, urinary tract infections, and encephalitis), endocrine abnormalities (hypoglycaemia), metabolic abnormalities (electrolyte imbalance) or head injuries.- Wernicke encephalopathy presents with a triad of ataxia, ophthalmoplegia and mental confusion.- Alcoholic hallucinosis is a rare condition in which auditory hallucinations can occur in clear consciousness. The hallucinations can begin as simple sounds like a buzzing sound but can progress to well-formed voices. Most cases resolve within a few days and respond well to antipsychotics.

Taking an alcohol history is an important part of any admission to enable planning and prevention. Patients withdrawing from alcohol need to be monitored closely to prevent progression to DT. They should be nursed in a well-lit and safe environment. Dehydration, electrolyte and nutritional imbalance should be corrected by giving parenteral vitamins and fluids. A long-acting benzodiazepine like chlordiazepoxide 20–30 mg (up to four times a day) should be started. Chlordiazepoxide should be prescribed on a reducing regimen, reducing the dose every 2 days with a view to stopping over 7 days. Antipsychotic medication should be avoided as it is likely to reduce the seizure threshold and can precipitate withdrawal seizures. Advice about lifestyle changes can be given once the acute situation has settled. Motivational interviewing may be a helpful way to engage the patient in a non-judgemental way that can lay the foundations for future change.

Key Points
<ul style="list-style-type: none">- Delirium tremens is characterized by tremulousness, withdrawal seizures and intense and vivid visual hallucinations with fluctuating consciousness.- Immediate management involves medical care including rehydration, detoxification and sedation using benzodiazepines and parenteral vitamins.

CASE 27

(History, Flashbacks and nightmares)

A 28-year-old single woman presents to her general practitioner and explains that she has been experiencing recurrent nightmares over the past 2 months. She was involved in a road traffic accident 4 months ago. The car that she had been driving crashed on the motorway killing a colleague who had been her passenger. She also sustained injuries which required a 2-week stay in hospital. She works as a manager in a building company and her job requires her to travel to different sites in her car. Since the accident she has been off work. She says that the nightmares are related to the accident. She is unable to get the memories of the accident out of her mind and can experience very vivid images of the events even during the day. She struggles with persistent anxiety and has poor sleep and concentration. She now stays at home most of the time and finds it difficult to travel by car, even as a passenger. Her mood and behavior can fluctuate rapidly during the day, and she has recently started self-harming by making cuts to her forearms. She lives alone but has support from friends and family who live locally. There is no history of mental illness in the family. She has no previous psychiatric or

medical history apart from a history of overdose with paracetamol 8 years ago. At that time she had split up with her boyfriend and took the overdose while intoxicated with alcohol. She is a non-smoker and has used cannabis in the past when she was at university. She does not use any drugs now. She used to drink alcohol socially but recently has started drinking every day. She says that she drinks one bottle of wine a day.

(Mental state examination)

She makes good eye contact. She appears to be anxious and has tremors in both hands. She is reluctant to speak about the road traffic accident and starts shouting, becoming verbally aggressive when questioned about the accident. There is no pressure of speech. She describes experiencing the accident as recurrent intrusive imagery. She feels guilty about surviving the accident and states that it would have been better if she had died instead of her colleague. She has thoughts that life is not worth living, but states that she would not commit suicide because of her family. Her mood is labile. There is no evidence of delusions or hallucinations. She has good insight into her difficulties.

(Physical examination)

Physical examination is unremarkable.

(Questions)

- 1) What is the differential diagnosis?
- 2) How would you investigate and manage this patient in general practice?

(Answer)

This woman is presenting with posttraumatic stress disorder (PTSD). There is an intense and prolonged reaction to severe trauma. Such trauma could be due to natural disasters

(earth- quake, floods and tsunami), accidents (road traffic accidents, fires) or serious physical harm/ threat of harm (rape, torture, assault). This woman had an accident 4 months ago and has been experiencing symptoms of hyper-arousal (anxiety, insomnia) as well as recurrent and intrusive flashbacks. She has nightmares and has been avoiding situations that remind her of the accident (unable to travel in a car). These symptoms have presented within 6 months of the trauma and have been present for more than 1 month. She has a maladaptive style of coping and has been using excessive alcohol.

Stress-related disorders – differential diagnosis
<ul style="list-style-type: none">- Acute stress reaction is a transient disorder that occurs in response to a severely stressful event. It starts within a few hours of exposure and usually resolves within 2–3 days of the termination of the stress. Symptoms include those of anxiety, feeling of numbness, depersonalization, poor concentration and disorientation.- Adjustment disorders occur when stressors are not life-threatening or out of normal human experience. Symptoms are depressive and/or those of anxiety, and they can affect behavior. Symptoms do not usually persist for more than 6 months and resolve spontaneously with conservative management.- Dissociative disorders, which are disruptions to awareness, perception or memory, can occur after stress. Dissociative amnesia and depersonalization are examples.- Substance abuse: LSD users can experience flashbacks. Alcohol or drug intoxication or withdrawal can present with similar symptoms.- Organic causes such as head injury can mimic or exacerbate symptoms of PTSD.

- Conversion disorders occur when stress is thought to be internalized and symptoms such as loss of power or sensation occur. Pseudo seizures may also occur.

Detailed history of previous traumatic experiences including the nature and duration of the current symptoms, along with a detailed mental state examination, is needed to rule out the above diagnoses. Urine drug screen helps rule out intoxication with illicit drugs. The immediate management would be to support and encourage her to talk about the traumatic event and to facilitate healthy emotional processing and coping. On account of the severity of her symptoms and the development of secondary complications like self-harm and alcohol misuse, she should be referred to specialist psychiatric services. She would benefit with input from a community psychiatric nurse (CPN) who could monitor her mental state and also offer help with practical issues. Trauma-focused psychological help in the form of cognitive behavior therapy (CBT) or eye movement and desensitization reprocessing (EMDR) are first-line treatments. Pharmacological treatments are second-line treatments and include paroxetine or mirtazapine, which can be used in primary care, or amitriptyline or phenelzine, which can only be prescribed by mental health specialists.

Key Points

- PTSD follows an out of 'normal human experience' trauma. Characteristic symptoms include recollection, nightmares, and flashbacks, avoidance of places or events reminiscent of trauma and anxiety symptoms.

- | |
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| <ul style="list-style-type: none">- Trauma-focused psychological therapies are the treatments of choice. |
|--|

CASE 28

(History, Unsteady gait)

A 50-year-old electrician presents to the emergency department with a 3-day history of an unsteady gait and double vision when looking to the right. He appears confused and gives a history of severe vomiting over the past 10 days with significant weight loss over the past few months. He has been abusing alcohol for 30 years and has been diagnosed with alcohol dependence. He underwent a partial gastrectomy for carcinoma of the stomach 12 years ago. He has no other previous medical or psychiatric history.

(Mental state examination)

His eye contact is variable. He is disorientated. He has poor orientation in time and does not know where he is, but he is able to recognize his wife who accompanies him. He is drowsy, has poor concentration but is readily reusable. He scored 14/30 on the Mini Mental State Examination. A thorough mental state examination is difficult due to his condition, but he does not appear to be responding to any unseen stimuli. He has little insight into why he is here.

(Physical examination)

A general examination reveals bilateral pedal edema and icterus. His blood pressure is 90/60 mm Hg and pulse is 120 beats per minute. Oxygen saturation in the air is 96 percent. He has palmar erythema and hepatomegaly. He has nystagmus.

Neurological examination reveals reduced power in both lower limbs. He has reduced sensation on pinprick and two-point discrimination in both lower limbs. Deep tendon reflex at the ankle is reduced bilaterally. He has an unsteady gait and is unable to stand without support.

Investigations

<ul style="list-style-type: none">- Haemoglobin level 14.2 g/dL, reference range [11.7–15.7 g/dL]- White blood cell count $9.5 \times 10^9/L$ [$3.5\text{--}11.0 \times 10^9/L$]- Mean corpuscular volume (MCV) Sodium 110 fL [80–99 fL]- Potassium 129 mmol/L [135–145 mmol/L]- Urea 4.3 mmol/L [3.5–5.0 mmol/L]- Creatinine 7.4 mmol/L [2.5–6.7 mmol/L]- Alkaline phosphatase 84 $\mu\text{mol/L}$ [70–120 $\mu\text{mol/L}$]- Alkaline aminotransferase 356 IU/L [30–300 IU/L]- Bilirubin 92 IU/L [5–35 IU/L]- Albumin 22 $\mu\text{mol/L}$ [2–17 $\mu\text{mol/L}$]- Gamma-glutamyl transaminase 29 g/L [35–50 g/L]- Random blood glucose 141 IU/L [11–51 IU/L]
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Magnetic resonance imaging (MRI) brain scan reveals bilateral symmetrical high-intensity areas in the thalamus and generalized cortical atrophy.

(Questions)

- 1) What is the diagnosis?
- 2) What complications can arise in the immediate management of this condition?
- 3) How would you manage this patient?

(Answer)

This man is presenting with a triad of ataxia, nystagmus and confusion indicating a diagnosis of Wernicke encephalopathy (WE). This can present abruptly and is a medical emergency. It is important to recognize and treat the condition early as it is potentially reversible. This condition is related to thiamine deficiency. Thiamine is phosphorylated to TPP (thiamine pyrophosphate). TPP acts as cofactor for enzymes like transketolase and pyruvate dehydrogenase, which are essential for synthesis of myelin and also play a key role in brain glucose metabolism. Chronic alcohol use is an important cause of the condition as it impairs the absorption of thiamine from the gut. Other causes of WE include prolonged diarrhea, vomiting, hyperemesis gravidarum, severe malnutrition in anorexia nervosa, prolonged intravenous feeding and carcinoma of the stomach. Pathological lesions in WE involve mammillary bodies, thalamus, hypothalamus, medulla, pons and cerebellum. With prompt treatment the condition is reversible and greatly reduces the risk of subsequent cognitive impairment. WE is pathophysiologically related to Korsakoff syndrome (KS). Many of the cases of WE can progress to KS, which is characterized by poverty in the content of conversation and confabulation. There is enduring cognitive impairment with loss of recent memory, anterograde amnesia and the sufferer has little insight into his or her problem. In cases of established KS, the prognosis is poor with very few patients improving even with continued thiamine treatment.

Complications of WE
<ul style="list-style-type: none">- Strict bed rest is required in the acute stages of presentation. There is a risk of cardiovascular collapse. Sudden death can occur due to cardiac decompensating.

In patients with signs of cardiac failure, digitalization might be needed.

- Thiamine should always be administered before carbohydrate or glucose infusion as thiamine is required for glucose metabolism, and glucose infusion can rapidly deplete the thiamine stores and further aggravate the condition.

This patient needs to be given 50 mg of thiamine intravenously, given slowly over 10 minutes due to risk of anaphylactic reaction. This should be accompanied by intramuscular (IM) injection of 50 mg of thiamine. The IM thiamine should be continued for 5 days during which the normal diet is resumed. Absorption of thiamine from the gastrointestinal tract can be inconsistent and therefore oral administration is not reliable. Injection of Pabrinex, which contains nicotinamide, riboflavin, pyridoxine and ascorbic acid along with thiamine, is often preferable to thiamine alone as this will cover the possibility of other vitamin deficiencies. The patient needs complete bed rest. Management would involve also giving consideration to the possibility of infection, dehydration and electrolyte imbalance. Oral thiamine 100 mg twice daily should be continued for 6–12 months after acute illness has resolved. Lifestyle advice and family support will be helpful.

Key Points

- WE is characterized by a triad of ataxia, nystagmus and confusion. When suspecting WE, always ensure thiamine is administered before giving glucose.
- WE may lead to korsakoff psychosis, which is not a psychotic disorder but is a cognitive disorder with poorer cognitive prognosis.

CASE 29

(History, this pain just will not go away)

A 43-year-old woman has been coming to her general practitioner (GP) for 3 years with pelvic pain. She has seen two different gynecologists in that time and has had numerous investigations, but a cause has not been identified. She comes to the surgery again with the same symptom saying that she is unable to have sex with her husband and feels a sharp pain like a bone pushing inside her almost constantly. Prior to this she had right-sided hypochondria pain for a 2-year period and received a computed tomography (CT) scan and two ultrasounds that showed no abnormalities, before the symptoms spontaneously remitted. In her notes it shows that in her early thirties she was investigated for central chest pain and difficulty swallowing. An endoscopy and CT scan of her chest and chest X-rays were all normal. She has had irritable bowel syndrome since she was 16. She has intermittently been off work but has never been off long term and enjoys her role as a receptionist at the local hospital's patient advice and liaison service.

When you ask her today about other symptoms she indicates that she has no heavy periods although she sometimes bleeds for up to 9 days. For the last 6 months she has had intermittent palpitations, dizziness and nausea. She is asking for a sick note and a referral to the hospital, but she does not want to see either of the gynecologists she has seen before. A brief scan of previous investigations shows that they have been numerous and normal.

(Questions)

- 1) What diagnoses go through your mind?

2) What do you decide to do?

(Answer)

It is important not to fall into the trap of automatically dismissing this woman's symptoms. However, the history is fairly typical of somatization disorder. Malingering is another possibility although the fact that she enjoys her work makes this unlikely.

Somatization disorder
<ul style="list-style-type: none">- Chronic single or multiple symptoms- Symptoms occurring across different body systems- Symptoms with no explanatory objective signs or investigations- Psychiatric disorder, such as depression, often present- Numerous past investigations- Rejection of previous physicians

In essence the task of the GP is to rule out physical causes and then to seek some kind of help that will prevent long-term social, marital or occupational handicap. The key to these situations is to know when to raise alternative courses other than persistent investigation. Investigation is costly for several reasons. It engenders anxiety in the individual about possible pathology. Studies examining case notes of somatizing patients reveal very high lifetime costs to the health service often with little or no benefit.

The best timing to discuss the possibility of somatization is when a tranche of investigations have come back that are normal. It could be that the GP in this situation discusses previous results or seeks a further referral and discusses with the consultant concerned the importance of steering the woman towards

alternative attributions about the nature of her symptoms. Somatization disorder is not malingering in the sense that symptoms are not feigned. Symptoms are experienced as real. If a patient is being told that there is no physical explanation for his or her symptoms it is important not to imply that the patient is in some way ‘making up’ the symptoms but instead, offer some explanation of where they originate from. Clinicians may explain that the body’s nervous system is very complicated and that sometimes pain or other symptoms can occur when there is no physical treatable pathology. Some people experience pains or symptoms spontaneously for no known reason and some experience them where stress or factors such as poor sleep or poor diet affect nervous system function. Opening up this discourse allows the clinician to make appropriate referrals to professionals such as a clinical psychologist or liaison psychiatrist who can give support to these aspects of functioning. The focus may not be on cure, but on coping. If the woman is not receptive to such a referral an alternative pragmatic approach would be to discuss lifestyle changes, coping strategies or holistic activities such as yoga or aromatherapy that focus on general well-being, not the main symptom. Finally screen for depression which is commonly present. If it is present appropriate treatment may help.

Key Points
<ul style="list-style-type: none">- Somatization disorder should be considered if symptoms occurring across physical systems are chronic and have resulted in repeated negative investigations.- Treat depression if present.- Successful treatment reduces unnecessary investigations and facilitates a better quality of life.

CASE 30

(History, cannot concentrate after his daughter died)

A 32-year-old man attends the general practitioner (GP) surgery because after his 18-month-old daughter died 6 months ago he has been unable to concentrate. He went back to work in an insurance firm after 2 weeks but finds it hard, and feels a strong emotional jolt every time he signs his signature. He explains that his daughter had been born with a heart defect, and that he had been the one who signed the consent form for her to have the heart operation. He cannot get it out of his mind that it was like him signing her death warrant. He feels angry with medical staff, although he says that they did nothing wrong that he knows of. She died a day after surgery when she suffered disseminated intravascular coagulation.

He has lost his appetite, his sleep is poor and he is drinking more alcohol than usual. He can concentrate at home on television programs. He feels a general lack of energy and says that he has difficulty enjoying things any more (anhedonia). If he laughs he feels guilty. Prior to his daughter's operation he was happy, although understandably concerned about his daughter's health. He also regularly went out with friends, including five-a-side football on a Friday night followed by drinks and a meal. He could laugh and enjoy himself at this time. He has no history of depression or psychiatric or psychological problems. His wife is low in mood but has returned to work in a human resources department of a large manufacturing firm. She values the support of her friends there and has accessed ad hoc counseling through her occupational health department. They have one other child, a boy aged 7 who is missing his baby sister. He is cheerful much

of the time but cries sometimes at night saying he misses their cuddles. He is well cared for.

(Mental state examination)

He is well dressed in chinos and an ironed open-necked shirt. His eye contact is good. He has no agitation or psychomotor retardation. His mood is low and he describes being tearful about once per week. His thoughts are normal in flow, speed and content. He has no thought passivity or hallucinations or delusions. He is not suicidal although he admits that life seems a bit pointless. He says he would never kill himself because he loves his son too much. He cannot see the point of going to work when his baby girl is dead, but goes to 'bring the money in'. He has insight into the fact that he is feeling this way because of 'grief'.

(Questions)

- 1) What is the problem?
- 2) How can you help?

(Answer)

It is important to consider the diagnosis of depression. However, this man's mental health was good prior to the death of his daughter. His current problems clearly occur in the context of bereavement, and many aspects represent appropriate responses. A diagnosis of depression may unnecessarily cause pathologies at a time when he needs support. The best thing to do at this point is to record the symptoms of depression and monitor them once you have provided bereavement support. A risk assessment would need to be carried out to make sure that he poses no risk to himself. There are no early indications of suicidal ideation in his case. Normal bereavement can include low mood,

sleep disturbance and tearfulness. Often such symptoms abate with time. This varies but about four-fifths will experience improvements in these symptoms 4 months post bereavement. Theorists regard that certain emotions are seen commonly in bereavement, which include numbness of emotion or even denial that the event has occurred. Yearning and distress, sadness, preoccupation with the dead person, reminiscing, acceptance and readjustment can all be part of the spectrum of the bereavement response evolving over time. Experiences of 'what if' or 'if only' are common. It should be remembered that 'loss' never disappears, memories can elicit both positive feelings and regret for years. Visions of the person who has died can occur, and these are usually recognized as not 'real' and as such are pseudo hallucinations (true hallucinations are perceived as indistinguishable from actual perceptions). They usually disappear with time. Pathological grief is not a clearly defined concept. It has a lengthy and varied literature which reflects the difficulty of attributing a 'norm' to a process determined by different individuals' personalities and coping resources. It refers to situations where a person's grieving process is significantly hampered in some way and affects his or her functioning beyond an expected range. The most common example would be where it is prolonged and severe. This man's grief has lasted 6 months thus far and could not be described as pathological. This label should only be applied if the clinician is clear that using such a label may help. The best thing to do in this situation is to make sure that this man has good support. Ask about friends and family and what his sources of support are. Bereavement support can come from many different places determined by the individual's preferences. It may come from religious advisors, family, friends, third-sector counselors (e.g. Cruse Bereavement Care), and funeral director service or through general practice counselors. Some areas run bereavement groups which, although

often focused on the needs of children, also provide support to parents and carers. The needs and well-being of this man’s wife and children should also be considered. Follow-up is necessary to monitor whether the situation improves. If it does not, a referral to a psychologist or local bereavement service would be appropriate.

Key Points
<ul style="list-style-type: none">- Bereavement is not an abnormal experience.- Family members can benefit from support after bereavement. This varies enormously depending on personal preferences.

CASE 31

(History, something's not quite right)

A 24-year-old man’s parents bring him to see you. Up until a few months ago he seemed to be doing well and there were no concerns. He was in the second year of his PhD, but then apparently quite suddenly lost interest in his academic work and also stopped socializing with his friends. He returned to live at home and has been increasingly more withdrawn at home. He is speaking less and less and is becoming apathetic and rarely shows any emotion or engagement with anyone including his family members with whom he had been reasonably close. When asked how he is, the man insists he is fine and he cannot understand his parents’ concern. When asked about what they think is wrong, his parents cannot say what concerns them, but they are sure something is not right.

(Mental state examination)

His eye contact is variable and when he does make eye contact it is fixed but there is no sense of rapport with you. He is a polite and reasonably cooperative man. He does not appear anxious or agitated but appears rather flat in affect. He seems slightly detached from his parents and does not look at them. His speech appears normal, but he does at times struggle to answer even quite basic questions and his responses are short. He describes his mood as 'fine' and denies any self-harm ideation. He does not look depressed but seems detached and in a world of his own. He denies any hallucinations or delusions. There is no evidence of any thought disorder, although he says very little so this is difficult to elicit. He is oriented in time, place and person. His serial sevens testing is poor, but his parents say he has never been good at mathematics. You then call (with his consent) his university tutor who reports that a few months prior to him leaving university and returning home, it was brought to the tutor's attention by his peers that there had been episodes of strange and erratic behavior. By the time the university health service saw him, the episodes seemed to have settled, but it was suggested he would benefit from a break.

(Questions)

- 1) What is the differential diagnosis?
- 2) How would you manage this case?

(Answer)

The man needs to be assessed and he will need to be seen alone. If he has capacity, his consent is required to share information about his care with his parents. You will need to ask about any changes in mood, any experience of perceptual abnormality, any evidence of delusions and any changes in behavior. A risk assessment is also needed. The differential

diagnoses will include depression, substance misuse, schizophrenia presenting with negative symptoms, autism spectrum disorder (extremely unlikely as onset appears to be recent and autism spectrum disorder would have displayed features from before age 3) and possible organic causes. The most likely diagnoses are depression or schizophrenia. This man appears to be presenting with the negative symptoms of schizophrenia, but it is important not to jump too quickly to conclusions as making this diagnosis has a number of weighty implications for this man and his family. Make sure that other possibilities are excluded.

Negative symptoms and signs of schizophrenia
<ul style="list-style-type: none">- Avoidance and low energy – the person tends to sit around and sleep much more than normal, lacks interest in life and has poor motivation.- Affective flattening – a blank, blunted facial expression or less lively facial movements, flat voice (lack of normal intonations and variance) or physical movements and poverty of emotional expression compared to before.- Alogia describes poverty of speech.- Interest in others is reduced.- Inability to make friends or keep friends.- Social isolation.- Poor self-care.- Catatonia can present in a number of ways with profound effects on movement and activity. There may be an apparent unawareness of the environment, near total absence of motion and speech, aimless body movements and bizarre postures.

Although there are no tests that can diagnose schizophrenia, simple blood and urine tests can rule out other medical causes of symptoms. Brain imaging studies, such as magnetic resonance imaging or a computed tomography scan, can exclude other rare problems such as space-occupying lesions. A thorough history and blood screen could exclude any missed systemic illness such as anemia or hypothyroidism. The management of this man would depend on the final diagnosis. Initial treatment may focus on psychosocial interventions including psycho-education, activity scheduling, family therapy and cognitive behavior therapy. Other aspects of treatment include the development of coping strategies and helping him function the best he can whatever the symptoms are. Depression would warrant antidepressants, and a diagnosis of schizophrenia would involve treatment with antipsychotic medication, although compliance may be an issue as the man does not believe he is unwell. Psychosocial interventions would allow a period of monitoring before deciding on medication. Antipsychotics appear less effective in reducing negative symptoms than positive ones. Educating and supporting the family are also important components of care. It is very important that patients stay in treatment even after recovery. Four out of five patients who stop taking their medication after a first episode of schizophrenia will have a relapse. Relapse prevention work is therefore a key part of any treatment program.

Key Points	
-	Antipsychotic medication is less effective for the negative symptoms of schizophrenia; only with clozapine is there good evidence of significant effects on negative symptoms.

- | |
|---|
| <ul style="list-style-type: none">- Educating and supporting the family are key components of care. |
|---|

CASE 32

(History, Tricyclic antidepressant overdose)

A 20-year-old law student attends the emergency department with her parents after having taken an overdose of her mother's antidepressant medication. She had a row earlier in the day with her parents about her mobile phone bill. She says that, in a fit of anger, she locked herself in the bathroom and swallowed a fistful of pills. She is carrying the bottle labeled 'dothiepin 75 mg', which may have contained as many as 28 tablets. She is very remorseful about the attempt and says it was impulsive. She has apologized to her parents and has come to the emergency department at their insistence. She says she feels fine and reports no symptoms apart from a slight pain in her abdomen. She reports feeling drowsy and would like to go home to 'sleep it off'. There is no past history of any mental illness though her father says that she has always been a 'moody girl' and has periods where she is very low, tired and feeling worthless about herself. At other times, she can be vivacious, spending a lot of money, full of confidence and brimming with ideas.

(Mental state examination)

She appears drowsy and her speech is slurred. She is constantly licking her lips and sipping water from a bottle. Her mood is euthymic. She expresses remorse and denies any ideas of self-harm. There are no psychotic symptoms. She appears a little disorientated, getting the time and date wrong, but there is

no evidence of gross cognitive abnormality. There is no evidence of any other psychopathology. She is willing to be examined but refuses to be admitted.

(Physical examination)

She appears flushed and warm to touch. Her temperature is 38°C. Her pulse is 110 beats per minute and irregular and blood pressure is 98/64 mm Hg. Her pupils are dilated. There are no focal signs on central nervous system (CNS) examination. Abdominal examination reveals a distended bladder.

(Question)

How will you manage this patient?

(Answer)

This woman is claiming to be fine, but she is presenting with an overdose of tricyclic antidepressants (TCAs), which can potentially be fatal and is therefore a medical emergency. She needs to be observed and investigated in a medical assessment unit for at least 6–8 hours as symptoms may commence only 2 hours after the overdose with major complications occurring typically within the first 6 hours. These can be very serious and require treatment in an intensive care unit (ICU). If she lacks the capacity to refuse treatment, she may need to be assessed and treated against her will using the appropriate legislation – Mental Capacity Act in England and Wales. This assessment will need to be carried out by the emergency department consultant. She is presenting with an anticholinergic syndrome – ‘Blind as a bat, Red as a beet, Hot as a hare, Dry as a bone, Mad as a hatter’. However, toxic effects are also due to alpha-adrenergic blockade (vasodilation, hypotension and cardiogenic shock), reuptake inhibition of noradrenaline and serotonin (tachycardia and seizures) and sodium channel blockade (slow depolarization of

the action potential and prolonged PR, QRS and QT intervals). Impaired cardiac conduction may lead to heart block, unstable ventricular arrhythmias or a systole. Direct depression of myocardial contractility may also be seen.

Investigations
<ul style="list-style-type: none">- Toxicology screen – to rule out co-ingestion of other substances. The regional toxicology laboratory or TOXBASE may offer specific advice.- Blood tests – including complete blood count (CBC), urea and electrolytes (hypokalemia often seen), renal function tests (impaired renal function prolongs toxicity as TCAs are excreted by the kidneys).- Arterial blood gases are vital as TCA toxicity leads to mixed acidosis due to respiratory depression and hypotension secondary to myocardial depression and peripheral vasodilation. The acidosis in turn decreases protein binding and increases plasma levels of free drugs.- Electrocardiogram (ECG) has diagnostic and prognostic significance – limb lead QRS >160 milliseconds and R wave >3 mm in lead AVR are associated with increased risk of seizures and ventricular arrhythmias and are better predictors than plasma TCA levels.

Securing ABC (airway, breathing and circulation) is necessary. Early gastric decontamination using activated charcoal should be considered if the patient presents within the first hour or two of ingestion. Reversing acidosis with sodium bicarbonate when pH <7.1 is vital. Antiarrhythmics should be avoided. Hypoxia, hypotension and hypokalemia should be corrected while symptomatic treatment should be instituted for

seizures (benzodiazepines) and urinary retention (catheter). Prolonged resuscitation is known to be successful in patients with cardiac arrest. She should be monitored for at least 24 hours after ECG returns to normal. Psychiatric assessment is essential prior to discharge to assess further risk of self-harm. She has periodic fluctuations of mood, which should arouse suspicion of bipolar disorder or cyclothymic disorder (periods of depressive symptoms alternating with hypomanic symptoms for >2 years not meeting criteria for depression or bipolar disorder). Selective serotonin reuptake inhibitors (SSRIs) are safer than TCAs should she ever need an antidepressant.

Key Points
<ul style="list-style-type: none">- TCA overdose is a serious medical emergency needing cardiac monitoring.- Appropriate legal frameworks should be used to treat patients lacking the capacity to refuse treatment.- SSRIs are safer than TCAs in overdose.

CASE 33

(History, Suicidal risk assessment)

A 29-year-old man presents with his sixth deliberate self-harm episode in 4 months. He has made four attempts to hang himself (including this one), jumped out of a building and thrown himself in front of traffic. There is no evidence of any injury. He was brought to the emergency department as he tried to hang himself outside his girlfriend's house. Each hanging attempt has been triggered by an argument with his estranged girlfriend. He wants to ensure that she is aware of what he is doing and the

extent to which he is suffering because of her behavior. There is some evidence that the relationship was previously volatile. He has been charged with domestic violence in the past, but the charges were subsequently dropped as she withdrew her complaint. There is no suicide note and he has made no efforts to settle any of his affairs. He does not have any strong ties to anyone in particular and most of his relationships tend to be fairly transitory as he ends up falling out with people. He is quite charming to the female nurses and slightly hostile with the male charge nurse. However, on finding out that he has to wait to be assessed, he becomes very angry and starts threatening violence.

(Questions)

- 1) What are the factors associated with completed suicide?
- 2) What are the key questions that should be asked in an assessment of risk?

(Answer)

Most self-harm episodes do not result in suicide, but the risks are increased if there is co-morbidity with a mental illness. Psychiatric diagnoses classically associated with completed suicide include major mood disorders, schizophrenia and addiction disorders. Two or more psychiatric disorders may interact to greatly increase the risk of suicide compared to a level that either diagnosis alone might carry, especially alcohol problems and depression. Suicide notes and planned suicides without any intention of being discovered (e.g. not disclosing the attempt to anyone) are particularly worrying. Males are more likely to use violent methods which may mean that impulsive attempts are more likely to be fatal. Firearm availability is an independent suicide risk factor. Well-identified demographic and bio psychosocial risk factors consistently associated with

completed suicide in the general population include male gender, older age, white race, widowed status, poor health (especially if painful serious illness is present) and lack of social support. Patients with previous serious attempts, a family history of completed suicide, history of drug/alcohol dependence, history of psychiatric illness, history of chronic or painful physical conditions and emotional feelings of hopelessness are also at significantly higher risk of killing themselves. In addition the severity of previous attempts in a patient's life history is predictive of future suicide risk. The two personality disorders most frequently associated with completed suicide are emotionally unstable personality disorder (EUPD) and dissocial personality disorder (DPD). This man may have DPD given the history and may be at risk until the issues relating to the current girlfriend are resolved. The woman concerned is also at risk from him. A risk assessment involves assessing risk to others as well as self as a result of the patient's mental state. The following are fairly standard screening questions. Useful questions in assessment of risk of harm to self:

- 1) Have you ever felt that life is not worth living?
- 2) How long do those feelings last?
- 3) Do they come and go or are they there all the time?
- 4) Can you manage the feelings?
- 5) Have you thought about acting on the feelings?
- 6) Have you made any plans?
- 7) How close have you come to acting on the thoughts?
- 8) What stopped you doing anything?
- 9) Have you tried anything before?
- 10) How can I trust that you will be able to keep yourself safe?
- 11) Do you feel unsafe?

If the feelings of self-harm are pervasive and there is an urge to act on them and plans have been made, the risk is high. Make sure that there is an assessment of risk of potential harm to others and risk of self-neglect. If there is any potential risk of him harming his girlfriend it is likely that confidentiality will need to be breached? She and/or the police may need to be informed to ensure her safety. Discuss and document these risks and decisions.

Key Points
<ul style="list-style-type: none">- Most people who present with self-harm do not go on to commit suicide; however, one presentation of self-harm increases the likelihood of further attempts.- Risk assessment is a key skill that all doctors need to be able to undertake.- A complete risk assessment would also include risk to others (including adults and children, and risk of self-neglect or vulnerability to exploitation).- Even patients who frustrate you or make you angry need a proper risk assessment.

CASE 34

(History, Suspicious and jerky movements)

A 53-year-old supply teacher attends the psychiatric outpatient clinic with his wife. His wife says that his personality has ‘changed completely’ over the past 2 years. He has become increasingly suspicious and cantankerous. He often misplaces objects and then accuses her of stealing from him and has made similar accusations against close friends. Previously a placid

person, he has now become irritable and aggressive. She feels that his 'mood swings' are now becoming intolerable. However, he says that his wife is making an 'unnecessary fuss'. He acknowledges being a 'bit low' after taking premature retirement 2 years ago, but does not feel that there is anything really wrong with him. He appears twitchy, displaying sudden 'jerky' movements of his arms and neck. He dismisses them as 'nervous tics'. His wife, however, feels that he is getting clumsy, dropping things and occasionally even stumbling. There is no previous psychiatric history although he says he took premature retirement due to stress. There is no past medical history of note. His father died at the age of 60 following a 'nervous breakdown' in his final years but he cannot provide you with any more details. There is no other significant family history. The couple has a son, 30, and a daughter, 25, who live close by. They live in their own home.

(Mental state examination)

He is a tall, thin gentleman, who establishes a good rapport. His speech appears a little slurred at times but is coherent and relevant. He displays sudden jerky movements of his arms, shoulder and neck. There is no evidence of thought disorder. He is convinced that his wife and his friends have stolen money and a few of his personal objects. He acknowledges that there is no obvious motive but yet remains convinced about this. He appears low in mood but does not have any ideas of self-harm or suicide. He has little insight into his symptoms and blames it all on 'stress'. On cognitive examination, he appears a little confused about the date and time and is rather clumsy on motor tasks such as writing. Mini Mental State Examination reveals a score of 23/30 with losses on tasks of orientation (three points), tasks of concentration (two points), three-object recall (one point) and construction (one point).

(Questions)

- 1) What is the differential diagnosis?
- 2) What investigations are indicated?
- 3) How will you manage this patient?

(Answer)

Pre-senile onset of cognitive, emotional and behavioral changes associated with movement disorder, in the presence of a family history, should arouse strong suspicion of the progressive degenerative disorder, Huntington disease (HD). The disease usually presents in the fourth or fifth decade, often presenting with psychiatric symptoms, most commonly personality changes, emotional disturbance and paranoia. Paranoid ideas of reference with frank delusions of persecution may be the earliest symptoms often associated with depression and anxiety. Behavioral agitation, often associated with aggression and violence, may be seen independently of choreiform movement disorder. Choreiform movements are regular, uncontrollable, random, brief muscle jerks and movements. These are different from athetoid movements, which involve writhing and twisting movements. Choreiform movements may initially be very mild and may go unnoticed for years but become florid and disabling as the disease progresses. Insidious cognitive impairment ultimately leads to severe dementia. Initially, the clinical picture resembles paranoid schizophrenia. Other psychiatric differential diagnoses include psychotic depression, bipolar disorder or schizoaffective disorder. Other causes of dementia such as Alzheimer's disease, vascular dementia, Wilson's disease, Parkinson's disease and neuroacanthocytosis also need to be considered as do other conditions such as multiple sclerosis,

systemic lupus erythematosus (SLE), neurosyphilis and drug-induced cerebellar disorder.

A high index of clinical suspicion is needed to make the correct diagnosis as up to a third of cases are wrongly labeled as schizophrenia. Computed tomography (CT) and magnetic resonance imaging (MRI) brain scans reveal dilated ventricles with atrophy of the caudate nuclei and are therefore indicated in all first-time presentations of psychosis. Genetic testing is diagnostic with the identification of multiple cytosine/adenine/guanine (CAG) repeats on the short arm of chromosome 4. The normal gene shows 11–34 repeats while in HD 37–120 repeats are seen. Pre-test genetic counseling is vital as the diagnosis of the disease has implications for the patient’s children with a strong likelihood (50 percent) of one of them being affected. It is autosomal dominant.

Prevalence of comorbid psychiatric symptoms
<ul style="list-style-type: none">- Comorbid psychiatric symptoms (Van Duijn et al., 2007)- Depression, anxiety, irritability or apathy Obsessions and compulsion- Psychosis
Prevalence
Between 33 percent and 76 percent Between 10 percent and 50 percent Up to 10 percent
<i>Note:</i> Van Duijn E, Kingma EM, Van der Mast RC. 2007. Psychopathology verified Huntington’s dis- ease gene carriers. <i>Journal of Neuropsychiatry and Clinical Neurosciences</i> 19, 441–448.

The disease is progressive and incurable with treatment directed towards palliation of symptoms. Mean survival time is 15–18 years. Psychotic symptoms such as agitation, delusions and hallucinations and movement disorders can be treated with atypical (clozapine) or typical (haloperidol) antipsychotic medication and tranquilizers such as clonazepam. Depressive episodes usually respond to selective serotonin reuptake inhibiting antidepressants such as fluoxetine or sertraline. Manic features may need a mood stabilizer (e.g. lithium) in addition to antipsychotic medication. Obsessive rituals may need treatment with anti-obsessional agents (e.g. fluoxetine). Speech therapy for dysarthria, physiotherapy for muscle rigidity and occupational therapy to maintain and enhance activities of daily living are indicated. Support for carers and signposting to support organizations such as the Huntington’s disease Association is helpful. Referral to social services is necessary to organize community care packages, home adaptation or nursing home care.

Key Points
<ul style="list-style-type: none">- HD can often be misdiagnosed as schizophrenia or mood disorder and therefore CT/MRI scans are indicated in first presentations of psychosis.- Management involves genetic counseling and symptomatic treatment.

CASE 35

(History, my nose is too ugly and too big)

A 26-year-old woman presents saying she needs a referral to a plastic surgeon as her nose is too large. She feels that people

constantly comment on her nose, behind her back. She feels her facial disfigurement has prevented her from developing positive relationships as she lacks confidence and never believes friends when they try to reassure her that her nose is fine. She rarely goes out as she is convinced that everyone stares at her and talks about her. She recently gave up her job as she was constantly late because it took her so long to apply her makeup to hide the disfigurement. She was also reluctant to move from the office to a receptionist role as she did not want to have to see people.

(Mental state examination)

Her appearance is healthy and there is no discernible abnormality with her nose in shape or size. The woman presents as affable and communicative. She is however inclined to hide her face and especially her nose by using a leaflet even though she is wearing a floppy hat which covers most of her face. Her eye contact is variable. She appears somewhat nervous and her speech is rapid but only when she is talking about her nose. She does not describe herself as low in mood and does not appear depressed. She does not have active self-harm ideation, and there is no evidence of psychosis.

(Questions)

- 1) What is the diagnosis?
- 2) What are the treatment options?

(Answer)

This woman has body dysmorphic disorder (BDD). She is preoccupied with a defect in her appearance that is imagined. For it to be a disorder it must lead to impairment in social or occupational functioning, and cause significant distress. The individual's symptoms must not be better accounted for by another disorder, for example, thinking he or she is fat in the context of an eating disorder, or a depressive delusion. The defect is not recognized by other people. This dislike of the defect is more than the usual negative feelings that most people have about the way they look from time to time, as it significantly impacts on functioning, especially socially. The beliefs usually represent overvalued ideas, although occasionally when insight is absent the beliefs may be delusional in quality. In this case it is important to explore co-morbidities. Comorbidity with other psychiatric disorders is common with three-quarters of people with BDD, in that they may have major depressive disorder, social phobia or obsessive-compulsive disorder (OCD) at some point. It has been suggested that individuals with BDD are more likely to have avoidant personality disorder or dependent personality disorder which conforms to the introverted, shy and neurotic traits usually found in individuals with the disorder. BDD is sometimes called *dysmorphophobia* and is one of the hypochondriacal disorders.

(Common symptoms of BDD)

There are preoccupations and ruminations about a perceived defect in appearance, which sometimes lead to obsessive or compulsive behaviors. Such behaviors might include regular checking of the relevant body part or checking in the mirror, intense avoidance of mirrors or images of themselves, attempts to hide the area of concern with makeup and clothing

and prolonged grooming. All of these would be to an intense degree. Some will withdraw from family or social life, becoming intensely self-conscious, and they often develop low self-esteem. In some instances mental health symptoms become more severe. Self-consciousness may become paranoia. Low mood and low self-esteem may develop into clinical depression and/or thoughts of self-harm. These persons may seek regular reassurance from those close to them, regularly comparing themselves to others. Relationships and work can suffer, and it may lead to major depression, generalized anxiety or alcohol or drug abuse.

Many individuals with BDD repeatedly seek treatment from doctors as they attempt to correct the perceived ‘disfigurement’. Surgery is unlikely to help as the patient is rarely satisfied given that his or her concerns do not relate to genuine abnormal features. The overvalued ideas about disfigurement often remain or subtly alter, leading to ongoing or additional concerns. They usually accept psychiatric or psychological help reluctantly. It is a difficult disorder to treat. Psychodynamic approaches to therapy have not proven to be effective, but there has been some success with cognitive behavior therapy (CBT). Selective serotonin reuptake inhibitors may help if there is a strong depressive component or features of OCD, but it would ideally be used alongside CBT.

Key Points
<ul style="list-style-type: none">- BDD is a difficult disorder to treat and psychological treatments are usually reluctantly accepted.- CBT is the treatment of choice.

CASE 36

(History, Can I Treat Her Against Her Will?) ASE

A 38-year-old woman presents to the emergency department (ED) having taken an overdose some 6 hours ago. She is refusing to give consent for her blood to be taken for tests. She is also shouting ‘you’re not going to pump my stomach’. You are told that the psychiatrist should be called so that she can be detained against her will to enable you to take blood and enforce treatment. (In this case the patient is in England where the Mental Health Act (MHA) applies). She took the overdose after finding out that her husband of 15 years is leaving her. The over- dose was impulsive. She wrote no note. She has three children who were in the house at the time of the overdose. She is adamant that there is no point in living, given she has been betrayed by her husband. She is sure her family will look after her children. You look up a handbook describing the Mental Health Act – (applicable in England and Wales), which out- lines the main sections as presented.

Main sections of the Mental Health Act (England and Wales)
<ul style="list-style-type: none">- Section 2: An assessment order, which allows compulsory detention for 28 days.- Section 3: A treatment order, which allows detention for 6 months.- Section 4: An order that can be applied by a single clinician to admit a patient while arrangements are made for further assessment. Detention For Up to 72 hours.

- | |
|---|
| <ul style="list-style-type: none">- Section 5(2): An order that allows detention of existing inpatients for 72 hours. |
|---|

(Questions)

- 1) What is the role of the psychiatrist in this case?
- 2) What are the key issues that need clarification?

(Answer)

Good practice involves treating patients obtaining appropriate informed consent. In this case it would be important to assess her capacity to consent to investigation and treatment but failing the capacity test does not require or necessarily imply a psychiatric diagnosis. Although this woman is unlikely to have a mental illness, her acute distress might make her temporarily incompetent from the point of view of capacity. Her capacity to refuse treatment should initially be assessed by the ED doctor and if capacity is felt to be lacking she can be treated against her will using appropriate legislation for e.g. Mental Capacity Act in England and Wales.

If the patient is deemed to have capacity but continues to refuse tests and/or treatment, she cannot be forced to accept treatment. However it is important to keep a dialogue going with her and to enlist the help of someone she trusts to try and persuade her to change her mind. In severe emergencies where treatment for life-threatening conditions is necessary without consent (e.g. an unconscious patient), the treating team should ensure that treatments are in the best interests of the patient, and where possible treatments would be discussed with next of kin. If there is no time to do more to assess capacity, and severe distress impairs the ability to make a rational decision, treatment should be initiated to save her life even without consent. A court of law is likely to be more critical of fatal inactivity than well-

intentioned care. However in most situations assessment of capacity is possible and all doctors should be conversant with the local Mental Capacity legislation. In some countries even capacious patients may be treated against their will using appropriate *mental health legislation* if they have a mental disorder and that disorder is posing a risk to their health, their own safety or the safety of others. For e.g. the MHA in England and Wales would enable this patient to be detained (not investigated or treated) on the medical ward using Section 5(2) for up to 72 hours but the application needs to be made by the doctor in charge of the patient's care and not by the psychiatrist. To enable investigations and/ or treatment against her will an application for admission under Section 2 or 3 of MHA will be needed. Section 2 or 3 will need an application by an approved mental health professional (usually a social worker) based on recommendations made by two doctors (one is usually a psychiatrist and the other usually the patient's general practitioner though in this case may be the treating physician). Section 2 is mainly an assessment section though treatment may also be provided under the act. Section 3 is a treatment section and may not be appropriate in this case, as any psychiatric diagnosis – if she has one at all is still provisional. Treatment under Sections 2 or 3 of the MHA can be given for mental disorders, but not physical conditions unless they are causing the mental disorder. Appropriate local legislation should be used to assess and treat her without her consent if she has the capacity to refuse treatment but is suspected of suffering from a mental disorder impairing her safety.

Key Points
<ul style="list-style-type: none">- Appropriate capacity legislation should be used to investigate or treat patients against their will. If a patient

has capacity it is unlawful to give the patient treatment against his or her wishes even if the decision seems unwise.

- Appropriate mental health legislation may be used to treat medical conditions directly causing a mental disorder, or if the medical symptoms are a manifestation of a mental disorder even when the patient has full capacity to refuse treatment.

CASE 37

(History, Disinhibited and behaving oddly)

A 50-year-old part-time gardener attends the general practitioner (GP) surgery with his girl- friend. He announces that he has no complaints but is attending at the behest of his girl- friend. She tearfully says that over the past year, he has been behaving ‘very oddly’ and in a socially embarrassing and tactless manner. He has openly flirts with other women in her presence, at times making lewd remarks about their breasts or legs. He has been sacked from two weekend jobs for behaving ‘inappropriately’ but he says that he likes women and sees no harm in ‘trying his luck’. He seems oblivious to the pain his actions are causing his girlfriend. When she continues to sob, he turns to her and shouts at her angrily, accusing her of being ‘silly’. He then breaks down in tears himself. He is facing disciplinary action at work and has been off work for the past 3 weeks. He has little motivation to return to work. His energy levels are good. He is sleeping well though his appetite has decreased over the past 6 months and he has lost half a stone in weight. He has had intermittent headaches but otherwise there is no significant medical history. There is no history of any

psychiatric illness. He smokes 20 cigarettes a day but does not abuse alcohol or any illicit drugs. He lives with his girlfriend in a council marionette. He has debts worth £3000, but is not 'bothered' about it. Physical examination is unremarkable.

(Mental state examination)

He seems irritable and it is difficult to establish a rapport. His speech is coherent, relevant but slow. He displays psychomotor retardation. He does not have formal thought disorder or any other psychotic symptoms. His mood appears labile varying from low to mildly euphoric and irritable. He is oriented in time, place and person. His attention span and concentration are impaired as evidenced by the serial sevens test. When asked to name words beginning with the letter 'F', he names six words in 1 minute (normal range 10–20 seconds) indicating impaired verbal fluency. He is unable to perform reciprocal tasks (tapping once when the examiner taps twice and tapping twice when the examiner taps once) or alternating tasks (alternately drawing triangles and rectangles).

(Questions)

- 1) What is the likely diagnosis?
- 2) What are the differential diagnoses?
- 3) How would you manage this patient?

(Answer)

This man is presenting with a sub-acute onset of socially disinhibited behavior, lack of empathy, insensitivity, impaired judgment, poor motivation and lability of mood representing a significant change in his personality. Organic disorders should always be suspected in late-onset personality changes. Orbitofrontal lesions are characterized by disinhibition, mood

lability and impulsivity while frontal convexity lesions show apathy, indifference and psychomotor slowing. In practice, a significant overlap is seen in frontal lobe dysfunction, as is the case in this man. Cognitive examination showing impaired concentration, impaired verbal fluency and impaired frontal system tasks such as reciprocal or alternate programs further suggests frontal lobe pathology. A diagnosis of organic personality disorder is most likely. A range of causes of frontal lobe pathology must be considered including stroke, head trauma, cerebral tumors, epilepsy, Huntington disease, multiple sclerosis, endocrine disorders, neurosyphilis and acquired immune deficiency syndrome (AIDS). In this case, intermittent headaches and weight loss point in the direction of a cerebral tumor. Other psychiatric differentials of frontal lobe pathology or disinhibited behavior need to be ruled out, such as:

- 1) Alzheimer's dementia involves global deterioration in cognition and behavior rather than change mainly in personality.
- 2) Pick disease, which is frontotemporal dementia.
- 3) Manic episodes including elated/irritable mood, psychomotor agitation, flights of ideas, grandiosity and reduced sleep. There may be a previous history of mood episodes.
- 4) Mixed affective disorder is an intermixing of manic and depressive symptoms in the same episode. Again, a previous history of mood episodes and an episodic course point to this diagnosis.

In management the first step is to identify the underlying cause for which a further history, blood screen and brain scan (computed tomography [CT]/magnetic resonance imaging [MRI]) is essential. Comprehensive mental state examination may occasionally need to be supplemented by expert neuropsychological testing to differentiate medical from non-

medical psychiatric pathology. If a neurological/medical cause is identified, referral to the relevant department is indicated. If psychiatric symptoms are predominant, as in this case, referral to and joint working with the liaison psychiatry team are useful. Treating the underlying cause (if treatable) is the key management strategy. Additionally symptomatic treatment may be indicated where symptoms are distressing or disabling. In this case, he is displaying lability of mood and agitation for which he can be prescribed an antipsychotic medication such as quetiapine. Antidepressants may be needed if depression seems to predominate in the clinical picture. His girlfriend is very worried and will benefit from a carer's assessment and subsequent support.

Key Points
<ul style="list-style-type: none">- Late-onset personality change is often associated with frontal lobe dysfunction; careful cognitive testing is needed to establish this.- Treating the underlying cause and symptomatic treatment are the key management strategies.

CASE 38

(History, what is going on in this consultation?)

A 50-year-old married woman presents with poorly controlled diabetes. The woman insists that she is putting all the advice given to her in place but that it is not helping her diabetes. She wonders whether it would be better managed if she saw you weekly. She also insists that she is not helped by seeing different members of the clinical team and that it would be better if she

just saw you. You find yourself struggling to understand how the fairly straight forward dietary advice cannot be implemented by the woman as she clearly understands what is required. She seems very competent but insists that without your help she cannot manage. She is married but has recently had problems with her husband who has had considerable health problems of his own. She says that he does not understand her health problems and is preoccupied with his own difficulties. You get the impression she feels somewhat let down by him as she was by her father who left the family when she was only 8 years old and failed to maintain any regular contact. On one occasion she leaves a message with the reception that says: 'I need to see you urgently. You are the only one that understands.' Her need to be seen and approved by you makes you uncomfortable, and you are struggling with how to manage this and move forward.

(Mental state examination)

She is well-dressed and although her hair is not tidy, she has used a lot of makeup. She makes good and sometimes intense eye contact. She presents as over-familiar, calling you by your first name. She begins the appointment by presenting you with a cake she has baked especially for you. When you hesitate to accept it, she urges you to take it as not doing so will be too much for her to cope with. There is no evidence of speech or mood disorder and she is not psychotic.

(Questions)

- 1) What might be happening here?
- 2) Why is it important to reflect on how you are feeling?

(Answer)

It may be helpful to reflect on this woman's needs in terms of relationships. Understanding the situation in terms of

transference may be helpful. Transference is a phenomenon described in psychoanalysis, which is characterized by the unconscious redirection of feelings for one person to another. This transference projects feelings, emotions or motivations onto another person without realizing that much of it emanates from within the self (and past relationships). Typically, the pattern projected onto the other person comes from a childhood relationship. This may be from an actual person, such as a parent, or an idealized figure or prototype. This transfers both power and expectation with both positive and negative outcomes. Exploring the situations and whom we place our transference on can identify our real motives and thoughts. What we read into other people reveals our secret prejudices and our unfulfilled wishes. Transference occurs on a regular basis but is particularly useful as a therapeutic tool to promote self-understanding.

Countertransference is the response that is elicited in the recipient (therapist) by the other's (patient) unconscious transference communications. Transference also provides a good idea of what the patient might be expecting from you. In this case scenario, the fact that the patient wants to see you weekly may mean she depends on you in a way that she wishes she could depend on her partner. That may in the longer term be a problem because while she is investing in you, it may make it difficult for her to address the real issues of her relationship with her partner. However, it can be useful because it may help her understand that she is visiting you with relatively trivial complaints because she has unmet emotional needs.

Feelings are easier to identify if they are not congruent with the doctor's personality and expectation of his or her role. Doctors may struggle with transference since they may have a need themselves to feel needed. They may unwittingly encourage this and only realize the impact once a degree of dependency has

been created. This may only emerge when several similar doctor–patient relationships have arisen. If they lack awareness they may react emotionally with irritation, rather than consider the role they might also have played in establishing this dynamic. Awareness of the transference counter transference relationship allows a more considered response. Being aware of the subconscious patient agenda may help the doctor recognize some of the patient’s wishes and fears and address these openly and sensitively. It may also help explain certain behaviors from both the patient and doctor. Understanding this also means that the doctor is able to step back and avoid feeling overwhelmed by excessive patient demand as he or she has greater awareness of what might be happening.

Key Points
<ul style="list-style-type: none">- Transference happens in most relationships.- Not recognizing transference and countertransference can have a negative impact on the doctor–patient relationship.

CASE 39

(History)

A 24-year-old engineering student attends the psychiatric follow-up clinic complaining of sudden jerky movement of his limbs over the past 3 weeks. He was diagnosed with depression 8 months ago and has been treated with fluoxetine 40 mg a day, without much benefit. Three months ago he started becoming more withdrawn and suspicious. He was referred to the Early Intervention in Psychosis Team who did not find any evidence of

psychosis but suggested schizoid personality with depression. Risperidone 3 mg a day was added. He started developing mild dystonia; procyclidine 5 mg twice daily was commenced but the jerks progressively became worse. Stopping the risperidone and procyclidine made no difference. Presently, he also complains of funny sensations in his face and neck. His girlfriend feels that he is progressively becoming clumsy and losing balance, and is also quite forgetful. He lives with his girlfriend, does not abuse drugs or alcohol and has no previous psychiatric or medical history. His Mini Mental State Examination (MMSE) score is 20 out of 30, losing points on orientation, attention and memory.

Investigations
<ul style="list-style-type: none"> - Haemoglobin level 12.8 g/dL, reference range [11.7–15.7 g/dL] - Mean corpuscular volume (MCV) 95 fL [80–99 fL] - White cell count 7.8×10^9/L [$3.5\text{--}11.0 \times 10^9$/L] - Platelets 220×10^9/L [$150\text{--}440 \times 10^9$/L] - Erythrocyte sedimentation rate (ESR) Sodium 8 mm/h [<10 mm/h] - Potassium 140 mmol/L [135–145 mmol/L] - Urea 4.2 mmol/L [3.5–5 mmol/L] - Creatinine 5 mmol/L [2.5–6.7 mmol/L] - Glucose 98 μmol/L [70–120 μmol/L] - Lumbar puncture Leucocytes 4.8 mmol/L [4.0–6.0 mmol/L] - Cerebrospinal fluid (CSF) proteins 4/mL [<5 mL] - CSF glucose 0.3 g/L [<0.4 g/L] - plasma glucose value 4.4 mmol/L [$>70\%$]

Note: Computed tomography (CT) of the brain: normal. Electroencephalogram (EEG): diffuse slowing with spikes and sharp waves.

(Questions)

- What is the likely diagnosis?
- How will you manage this patient?

(Answer)

This young man has presented with depression but has gone on to develop myoclonic jerks, unsteady gait and cognitive deterioration. Family history should be taken for Huntington disease. An absent trauma history and no CT scan findings make Wilson's disease, multiple sclerosis, trauma or vascular causes unlikely. Normal blood chemistry and normal CSF should raise suspicion of a rare cause of dementia. Drug side effects may cause some symptoms but not to this extent. This makes variant Creutzfeldt–Jakob disease (vCJD) a possibility. vCJD is one of four human spongiform encephalopathy (so called on account of the spongy appearance of brain tissue on autopsy). These are prion diseases, so called as the infective agent prion and a form of its protein called PrP (prion protein) have been implicated in causation. The other types include sporadic CJD (most common), genetic CJD and iatrogenic CJD (caused by treatment with cadaveric-derived human growth hormone or the use of human dura mater graft in surgery or blood transfusion from infected patients or the use of infected instruments in surgery). vCJD differs from sporadic CJD in that there is younger age of onset, longer course and psychiatric presentation as is the case in this patient.

Brain biopsy is diagnostic but rarely feasible. Diagnosis is suspected in cases of negative findings for other causes of young-onset dementia. Sporadic CJD shows characteristic periodic

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complexes on EEG. These are generalized bi- or diphasic periodic sharp wave complexes occurring at a frequency of 1–2 per second. However, this finding is not seen in vCJD. Diagnosis depends on identification of bilateral symmetrical hyperintensity in the pulvinar (posterior) nuclei of the thalamus. The ‘pulvinar sign’ on magnetic resonance imaging (MRI) brain scan is seen in 90 percent of cases. Another supportive diagnostic test is tonsil biopsy, which reveals the offending prion protein. Also suggestive is the presence of a particular protein called 14-3-3 in CSF. The National CJD Surveillance Unit (in the United Kingdom) or a similar public health body should be notified once the disease is suspected as the patient is ‘at risk’ for public health purposes. He should be advised that he would not be able to carry out blood or organ donation. There is no specific treatment for CJD although drugs such as quinacrine and pentosan polysulphate have been used on an individual basis. Psychiatric syndromes or symptoms may need appropriate treatment. This includes antipsychotic medication for agitation or psychotic symptoms, antidepressants for low mood and benzodiazepines for movement disorder and anxiety. Physiotherapists and speech therapists can help with dysphagia, dysarthria and dyspraxia. Referral to a support network facilitates provision of support to patients and carers. This is a neurodegenerative disorder and as the disease progresses, functional ability reduces progressively and patients ultimately need full-time nursing care. Social services should therefore be involved at an early stage.



Figure

The pulvinar sign – symmetrical hyperintensity in the posterior nuclei of the thalamus.

Key Points

- CJD, especially vCJD, often presents with psychiatric symptoms.
- CT scan is normal; however, MRI reveals the characteristic pulvinar sign.

CASE 40

(History, diarrhea and vomiting after irregular eating)

A 21-year-old woman presents in the emergency department with acute abdominal pain and vomiting and diarrhea. The pain is cramping in nature. The diarrhea and vomiting have been present for 2 days without any abatement. Prior to this her eating has been very variable. Sometimes she goes for the whole day without eating as she does not like eating in public. Occasionally she gets ravenous and eats large

quantities of junk food (e.g. whole packets of biscuits and cakes). She then tends to feel guilty and says that the guilt makes her feel sick. She does not like how she looks as she feels she is much bigger than her peers and she cannot wear current fashions as well as they can. She has not been on holiday and has not been unwell, although is gradually feeling weaker. She denies being on any prescribed medication but says she had been taking a herbal remedy to clear her bowels as part of a detoxification program. Recently she says she is not depressed, can enjoy herself and has no thoughts of self-harm. She has not used any illicit drugs, does not smoke and only occasionally consumes alcohol. There is no other previous history of note.

(Physical examination)

The woman looks dehydrated. She has no fever. Her pulse is 84 beats per minute and her blood pressure is 130/70 mm Hg. Her body mass index (BMI) is 24.9 (height 152 cm, weight 58 kg). She has calluses on her knuckles (which she states she got from having hit her hand on a wall). Her teeth are discolored and in poor condition. Her abdomen is not tender, and rectal examination shows that she is constipated.

Investigations	
-	Haemoglobin level 12.8 g/dL, reference range [11.7–15.7 g/dL]
-	White cell count 8.8×10^9 /L [3.5–11.0 $\times 10^9$ /L]
-	Platelets 280×10^9 /L [150–440 $\times 10^9$ /L]
-	Sodium 139 mmol/L [135–145 mmol/L]
-	Potassium 3.1 mmol/L [3.5–5.0 mmol/L]
-	Urea 4.4 mmol/L [2.5–6.7 mmol/L]
-	Glucose 5.3 mmol/L [4.0–6.0 mmol/L]
-	Creatinine 75 μ mol/L [70–120 μ mol/L]
-	Alkaline phosphatase 88 IU/L [30–300 IU/L]
-	Alanine aminotransferase 12 IU/L [5–35 IU/L]
-	Gamma-glutamyl transpeptidase 32 IU/L [11–51 IU/L]

(Questions)

- 1) What is the differential diagnosis?
- 2) What are the treatment options?

(Answer)

When considering the gastrointestinal presentation, many things are ruled out by history, examination and investigations. These include gastrointestinal problems (especially upper gastrointestinal tract) such as infection or repeated vomiting as a result of physical disorders (e.g. right ventricular failure). Prolonged starvation does not fit with the BMI. Anxiety or depression should be monitored but given her history bulimia is the most likely diagnosis. The hypokalemia and signs on the knuckles and teeth are likely caused by repeated self-induced vomiting. The purging type is the most likely as she has been making herself sick and she may also have been using diuretics to control her weight. Hypokalemia can be caused by the sudden

uptake of potassium ions from the bloodstream by muscle or other organs or by an overall depletion of the body's potassium. The most common cause of hypokalemia is diuretics. Other common causes of hypokalemia are excessive diarrhea, enema abuse or vomiting. It can also occur in medical conditions such as diabetes (ketoacidosis), adrenal tumors, hyperaldosteronism and renal artery stenosis, although these can be ruled out by history and investigation. Up to 20 percent of people complaining of chronic diarrhea practice laxative abuse. Laxative abuse is often part of eating disorders, such as anorexia nervosa or bulimia nervosa. Hypokalemia in eating disorders may be life-threatening with symptoms ranging from lethargy and cloudy thinking to cardiac arrhythmias and death.

The acute management will be to medically stabilize this woman. She will need to be carefully monitored while she is assessed and treated. Treatment of the hypokalemia involves addressing the cause, in this case psycho-education about the risk this woman is putting herself in. High-potassium food such as oranges and bananas can be used for mild hypokalemia (<3 mmol/L) with oral potassium supplementation if necessary. If her potassium levels were <2.5 mmol/L, intravenous potassium should be given. The speed of administration should be slow to avoid rapid changes in potassium levels, which can trigger adverse events such as arrhythmias. Regardless she will need referral for the support and management of her bulimia nervosa. In bulimia there is often a lack of control over eating, sometimes to the point of physical discomfort. Eating patterns are often not healthy and may be covert. There may be signs of purging such as going to the bathroom after meals to vomit and overt or covert use of laxatives or diuretics. These all need to be addressed.

Medical complications and adverse effects of bulimia

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|---|
| <ul style="list-style-type: none">- Weight gain- Abdominal pain, bloating- Chronic sore throat, hoarseness- Tooth decay and mouth sores- Broken blood vessels in the eyes- Swollen cheeks and salivary glands- Acid reflux or ulcers- Weakness and dizziness- Amenorrhoea |
|---|

The most usual treatment is cognitive behavior therapy with counseling and support, but there are several other bulimia treatments that are effective. Interpersonal psychotherapy helps people with bulimia solve relationship issues and interpersonal problems that are contributing to their eating disorder. Interpersonal psychotherapy may also help depression and low self-esteem which are common with bulimia. Group therapy is helpful in bulimia treatment involving education about the eating disorder and strategies for overcoming it. Self- help and support groups are also of benefit. If there is comorbid depression, consider using selective serotonin reuptake inhibitors (SSRIs).

Key Points

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| <ul style="list-style-type: none">- Bulimia is often well hidden and may present through medical complications.- There is often co-morbidity especially with depression, substance misuse and emotionally unstable personality disorder. |
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CASE 41

(History)

A 24-year-old postgraduate student has been admitted to the inpatient psychiatric unit for the past 4 days following a relapse of schizophrenia. Over the last 2 days he has been getting increasingly agitated and paranoid, accusing the nursing staff and other patients of poisoning him. He has refused food and drink and has attacked a member of staff. His first episode, 3 years ago, had resolved successfully with olanzapine (atypical antipsychotic medication). However, he had stopped taking this medication 3 weeks prior to admission. On admission, he was prescribed oral quetiapine 300 mg at night with haloperidol orally 5 mg three times daily in case of agitation along with lorazepam orally or intramuscularly (IM) 1–2 mg up to four times daily as required. He refused to take oral olanzapine and was administered haloperidol 5 mg three times daily IM with lorazepam 1 mg twice daily and 2 mg at night time IM over the last 2 days. Despite this, his agitation has been increasing and his speech has become more incoherent and bizarre. He was also prescribed procyclidine 5 mg twice daily after the duty doctor assessed him 2 days ago.

(Mental state examination)

He was assessed by the duty trainee doctor and was found to have irrelevant and incoherent speech with formal thought disorder. His eye contact was fleeting. He was disorientated and had no insight. He has a number of clear paranoid delusions and is responding to auditory hallucinations but is unable to describe them. He has little insight into his illness.

(Physical examination)

He was found to have tachycardia (120 beats per minute) and raised blood pressure (160/104 mm Hg). Core body temperature was 39°C. Central nervous system (CNS) examination revealed extrapyramidal muscle rigidity assumed to be secondary to antipsychotic medication, with a generalized tremor that was attributed to agitation and anxiety. Further systemic examination did not reveal any other abnormality.

Investigations

Haemoglobin level 12.2 g/dL, reference range [11.7–15.7 g/dL]

White blood cell count $17.2 \times 10^9/\text{L}$ [$3.5\text{--}11.0 \times 10^9/\text{L}$]

Sodium 12.2 g/dL [13.5–14.5 mmol/L]

Potassium $17.2 \times 10^9/\text{L}$ [3.5–5.0 mmol/L]

Thyroid-stimulating hormone 137 mmol/L [135–145 mmol/L]

Urea 4.6 mmol/L [3.5–5.0 mmol/L]

Creatinine 3.5 mU/L [0.3–6.0 mU/L]

Alkaline phosphatase 6.0 mmol/L [2.5–6.7 mmol/L]

Alkaline aminotransferase 84 $\mu\text{mol/L}$ [70–120 $\mu\text{mol/L}$]

Creatine phosphokinase 84 IU/L [30–300 IU/L]

(Questions)

- 1) What is the differential diagnosis?
- 2) How will you manage this patient?
- 3) How will you manage his schizophrenia in the future?

(Answer)

This man has hyperpyrexia, autonomic dysfunction (tachycardia, sweating, raised blood pressure, and tremors), muscle rigidity and mental confusion. This tetrad of symptoms is

highly suggestive of an idiosyncratic reaction to antipsychotic medication known as neuroleptic malignant syndrome (NMS). The central pathology is severe dopaminergic blockade leading to extreme muscle rigidity, which may cause rhabdomyolysis (muscle tissue breakdown) and acute renal failure. Early recognition of this medical emergency is vital as it can be fatal in up to 20 percent of cases.

Higher risk of NMS
<ul style="list-style-type: none">- The use of typical antipsychotics (though atypicals are not completely safe).- Rapid upward titrations in dose.- Withdrawal of anticholinergic medication.- Depot preparations.- Dehydration.- High ambient temperature.- Past episode of NMS.- Males have twice the risk of females.

Differential diagnoses include infections such as meningitis, encephalitis, and septicaemia with or without concurrent extrapyramidal rigidity. Neuroendocrine possibilities include thy- rotoxicosis and phaeochromocytoma. It could be drug induced with toxicity from illicit drugs (e.g. cocaine and amphetamines) or prescription drugs (e.g. salicylates and anticholinergic medication). Heat stroke or malignant hyperthermia should be considered. Also exclude neuropsychiatric presentations such as status epilepticus and catatonia (secondary to mood disorder or schizophrenia). Diagnosis is facilitated by a high index of clinical suspicion. Monitoring all patients on antipsychotic medication for extrapyramidal side effects is vital. The presence of any other

feature such as fever, confusion or autonomic dysfunction should lead to a detailed physical examination and investigations to rule out the above differentials. Useful investigations include the following (findings in NMS in parentheses): full blood count (leukocytosis), urea and electrolytes (raised in renal failure), liver function tests (raised serum transaminases), creatinine kinase (raised in renal failure) and urine drug screen to rule out drug intoxication.

(Management)

This is a medical emergency and will require urgent transfer to a medical unit. Maintaining ABC (airway, breathing and circulation) is vital. The antipsychotic medication should be discontinued immediately. Maintain hydration with intravenous fluids and maintain temperature with antipyretics and cooling devices. Dialysis is necessary in renal failure. There is some evidence to show the utility of generalized muscle relaxants such as dantrolene as well as for the use of dopaminergic medications such as amantadine. Future psychiatric treatment will involve treating schizophrenia with antipsychotic medications, which carry a high risk of NMS. Treatment should therefore be commenced in an inpatient setting only 2 weeks after successful resolution of current NMS. Long-acting or depot preparations should be avoided. Use low-dose atypical antipsychotic medication and titrate the dose upwards slowly.

Key Points
<ul style="list-style-type: none">- Hyperpyrexia, autonomic dysfunction, muscle rigidity and mental confusion with antipsychotic exposure suggest a diagnosis of NMS.- Maintaining ABC and symptomatic treatment in the medical setting are helpful.

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| <ul style="list-style-type: none">- Restart antipsychotic medication under close supervision of a psychiatrist inpatient. |
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CASE 42

(History, ‘Alien impulses’ and risk to others)

A 30-year-old shop assistant presents to the emergency department requesting that they remove the microchip from her brain. She says that this chip was implanted into her brain some weeks ago in order that aliens could control her mind. She has previously been diagnosed with paranoid schizophrenia and has had a number of previous admissions to psychiatric hospitals, the majority of which have been involuntary admissions. She has previously been treated with a number of different types of antipsychotic medications, and this is currently olanzapine 20 mg once daily. Her last admission to hospital was 6 months ago and since this time she has often missed her medication. She has no past medical history of note. There is no family history of mental illness. She is currently living with her parents who are supportive of her. From the ages of 18 to 28 she smoked high-potency cannabis (‘skunk’) on an almost daily basis, but following advice and support from her community mental health team she has successfully cut down her use of cannabis to approximately once every month. She has no other history of alcohol or illicit substance abuse. Although she has no previous convictions she has previously assaulted her parents and ward nursing staff when psychotic.

(Mental state examination)

She presents as unkempt and is surprised that she is being asked about her previous psychiatric history rather than being referred to a neurosurgeon for removal of the microchip. Despite this it is possible to establish a good rapport. At several points during the interview she stops speaking in mid-sentence and stares intently into one of the corners of the room and begins whispering to herself. She believes that a microchip has been implanted into her brain and that aliens are using this to ‘put things into my mind’. She describes how the aliens put impulses into her mind which she feels compelled to act upon. For 2 days the ‘alien impulses’ have concentrated on killing her mother and she is concerned that she may act upon these. She denies any hallucinations but during the interview appears to be responding to unseen auditory stimuli. She has little insight and does not accept that a relapse of her mental illness could be responsible for her current difficulties. There is no abnormality upon physical examination.

(Questions)

- What psychopathological term could be used to describe her belief that aliens are putting impulses into her brain which she must act on?
- How would you assess the risk that this patient may pose to others?

Examples of relevant risk-increasing factors
<ul style="list-style-type: none">- History of previous violence- Substance abuse- Psychotic illness- Personality disorder- Anger

- Lack of social support
- Relationship or employment problems
- Evidence of early maladjustment
- Non-compliance with treatment
- Use of/access to weapons
- Negative attitudes and violent fantasies
- Impulsivity
- Lack of insight

(Answer)

Her belief that impulses are being put into her brain and are no longer under her control is an example of passivity. The term *passivity* is used when the patient has the delusion that some aspect that is normally under his or her own control is instead controlled by an external agency. Examples of passivity phenomena are made impulses, made feelings and somatic passivity (a delusion that part of the body is under external control). Thought passivity refers to the belief that thoughts are inserted, removed or blocked. There are indications from this patient's presentation and history that she may pose a risk to others and in particular her mother. She is experiencing passivity phenomena that include the mad impulse to kill her mother. In addition to this she has a history of assaults upon others (including her parents) when unwell. Her risk to others is also increased by her lack of insight, poor compliance and history of cannabis abuse. A comprehensive risk assessment is essential in this case. In order to do this it is important to obtain relevant information from as many sources as possible. This could include a more detailed history and mental state examination from the patient, discussion with an informant (her parents would be especially helpful in this case) and previous psychiatric and medical records and information from any professionals recently

involved in her care (such as community psychiatric nurse, social worker or general practitioner). This information should then be used to evaluate the presence/absence of relevant risk factors. Other areas of risk that should be explored include risk of harm to self or suicide, risk of exploitation and risk of neglect. A summary judgment of risk should then be made. This should include what the risk is, who is at risk and the likelihood of this harm occurring. From this should follow an appropriate risk management plan. In this case it would be appropriate to consider admitting the patient to hospital. Given the risk here, if this offer is declined consider involuntary admission using appropriate legislation, e.g. the Mental Health Act (1983) in England.

Hallucinations and illusions
<ul style="list-style-type: none">- Hallucination: a sensory perception in the absence of an external stimulus that is experienced as a real perception- Illusion: a mistaken or false interpretation of a real sensory experience that usually comes about when a person's imagined or expected perceptions merge with real perception

Key Points
<ul style="list-style-type: none">- Passivity phenomena involve the patient believing that some aspect of his or her body or mind is under the control of an external agency.- Comprehensive risk assessment should involve information from several sources and will lead on to appropriate risk management and the provision of appropriate clinical care.

CASE 43

(History, *Feels like the room is changing shape*)

A 19-year-old woman comes to the clinic and describes that she is worried by experiences where the usual sounds in the room begin to fluctuate in intensity, almost like they are coming from a radio with the sound being altered. There is no radio present. This lasts for about 10 minutes and then she gets a severe throbbing headache. More commonly, on other occasions she has had the strange experience that her body is changing shape and becoming smaller and that she is farther away from the walls, even though she knows that the room has not actually changed shape. Sometimes this comes with a sensation that time is rushing past. Again she subsequently has a powerful headache that throbs and is usually unilateral. She reports no recent stressful life events and has worked at a supermarket checkout for 15 months. She has a healthy group of friends. There is no history of epilepsy or drug abuse, although she drinks up to 20 units of alcohol a week, usually over two nights at the weekend. The episodes do not occur in this context. There is no family history of epilepsy but a strong family history of migraine. Her mother has classical migraine with throbbing headaches, photophobia and vomiting. Her father reports having visual shimmering for 20–30 minutes about five times a year, but has no headaches associated with this.

(Mental state examination)

The 19-year-old woman is well dressed, clean and wears some light makeup. She makes normal eye contact and has healthy behavior with no agitation or psychomotor retardation. Her mood is euthymic both subjectively and objectively. She

would like to know what the symptoms mean. She is worried that she might be going mad. Other than the symptoms that she has described there is no evidence of any unusual or strange psychopathology. A full neurological examination is normal.

Investigations
<ul style="list-style-type: none">- Haemoglobin 13.9 g/dL [11.7–15.7 g/dL]- Mean corpuscular volume (MCV) 85 fL [80–99 fL]- White cell count $4.6 \times 10^9/\text{L}$ [$3.5\text{--}11.0 \times 10^9/\text{L}$]- Platelets $302 \times 10^9/\text{L}$ [$3.5\text{--}11.0 \times 10^9/\text{L}$]- Glucose 5.3 mmol/L [150–440 $\times 10^9/\text{L}$]- Urine drug screen Negative [4.0–6.0 mmol/L]
<i>Note:</i> Electroencephalogram: normal; computed tomography scan of the head: normal.

Examples of relevant risk-increasing factors:

- History of previous violence
- Substance abuse
- Psychotic illness
- Personality disorder
- Anger
- Lack of social support
- Relationship or employment problems
- Evidence of early maladjustment
- Non-compliance with treatment
- Use of/access to weapons
- Negative attitudes and violent fantasies
- Impulsivity and Lack of insight

(Questions)

- 1) Are her experiences illusions or hallucinations?

- 2) What is the differential diagnosis?
- 3) What is the most likely diagnosis?

(Answer)

The distortions of the ambient sounds are illusions. They are distortions of real perceptions. They would only be hallucinations if they occurred in the absence of external stimuli and were perceived as a true perception in external space (i.e. not a thought or an imagined sound). Similarly macropsia describes the sensation that objects are larger (and the person smaller in relation) than normal. Micropsia is the reverse.

The differential diagnoses would include complex partial epilepsy, psychoactive drug use (e.g. cannabis or magic mushrooms), migraine, early psychosis, severe sleep deprivation, severe stress, space-occupying lesion or feigned illness. In this example, there is no history of drug misuse, and the urine screen is negative. There is no additional psychopathology indicative of psychosis, although this should be monitored at future visits. Further tests were discussed but mutually agreed not to be necessary. The general practitioner referred the patient to a neurologist who diagnosed migraine using the term ‘Alice in Wonderland syndrome’. This was coined by Todd in 1955, because of the various instances of metamorphopsia, micropsia and macropsia described in the tale where Alice perceived herself to be smaller, changing shape and objects around her to be changing in size. In Chapter 5 of Lewis Carroll’s book, Alice encounters a caterpillar sitting on a mushroom, smoking ‘Hookah’. This is of note given that the toadstool *Amanita muscaria* has hallucinogenic properties. Carroll wrote of his own migrainous headaches in later life. In fact while migrainous auras are commonly known to include scotomata, or transient speech or power loss, it should be remembered that the spreading

depression that is associated with aura can happen anywhere in the brain, and therefore can create a range of other symptoms (that are either less common or less commonly reported).

The treatment for migraine involves analgesics such as paracetamol and non-steroidal anti-inflammatory drugs. Antiemetics are useful if nausea is a key part. Serotonin agonists that cause cerebral vasoconstriction can be helpful for some people. Prophylaxis such as beta-blockers, tricyclics and the anticonvulsant topiramate can be effective, although there is a high rate of placebo response found in comparative studies. In Alice in Wonderland syndrome, knowing the diagnosis is a great help to patients as it reassures them that they do not have a severe mental illness and that they do not have epilepsy. Prevention may be helped by recognizing particular triggers such as tiredness or diet, and making lifestyle changes accordingly. Rarely, other triggers have been reported such as physical exercise or bright lights.

Hallucinations and illusions
<ul style="list-style-type: none">- <i>Hallucination</i>: a sensory perception in the absence of an external stimulus that is experienced as a real perception- <i>Illusion</i>: a mistaken or false interpretation of a real sensory experience that usually comes about when a person's imagined or expected perceptions merge with real perception

Key Point
<ul style="list-style-type: none">- Migraine aura can affect different parts of the brain other than visual centers. This can produce a range of rare but migraine-related symptoms.

CASE 44

(History, Unable to open my fists)

A 19-year-old woman presents to her general practitioner (GP) saying that she is unable to open her fists. She says that 3 days ago she woke up and found it to be like this. She says she also started to see in black and white for a few hours and could see no colors. She explains that she has been otherwise healthy recently. Her records indicate that she has presented regularly to the GP in the past. The last five presentations have been for an ear infection, pains on the soles of both feet, shoulder pain, restless legs at night and neck pain. She has a cousin with cerebral palsy and her grandfather had a stroke 1 year ago and is now in a wheelchair. Further questioning reveals no other neurological symptoms. She did not do well in General Certificate of Secondary Education examinations and required extra help at school in the past for learning. She started work at a supermarket and was recently promoted to the check-out. She says that she does not like this, and prefers being on shelf-stacking duties. Her father is known to the practice as someone who has significant problems with alcohol dependence syndrome. Systematic enquiry for depression is unremarkable. She does describe some anxiety about work but has great difficulty articulating it.

(Physical and mental state examination)

The fists are tightly closed and on gentle examination it is not possible to open the fingers. There is clear resistance to movement. The woman does not appear to be unduly concerned. A neurological examination reveals no other abnormalities. Tone

in all other limbs and muscle groups appear normal. Her reflexes are all normal. There are no visual field defects. There is no evidence of status epilepticus. She chats and answers questions asked of her. On mental state examination she makes good eye contact and smiles readily. She sits with her fists clenched as if holding ski poles with the thumbs slightly rotated into the midline. There is no agitation, restlessness or retardation of movements. She does not fidget and there is no evidence of tics or other movement problems. She describes no low mood and appears euthymic. There is no evidence of thought passivity, hallucinations or delusions. When asked what she thinks is wrong she says: 'I am paralyzed in my hands'.

(Questions)

- 1) How would her symptoms be explained neurologically?
- 2) What is the most likely diagnosis?
- 3) What are the elements of good management?

(Answer)

There are no good explanations for her symptoms neurologically. A motor lesion in the brain would cause a unilateral loss of control and this would usually be a flaccid loss of power, with contractures only developing over time with lack of movement. The bilateral loss of color vision (acquired achromatopsia) is neurologically explainable by bilateral lesions in the visual cortex, and is exceptionally rare. It is usually accompanied by visual field defects and other signs. The most likely diagnosis is a conversion disorder resulting in loss of power. It is possible that this occurs against a backdrop of somatization disorder, where a range of symptoms occur across time. This is thought to represent physical expression of psychological distress. It is also possible that this is feigned and

that the symptom provides significant gain for the person (either allowing her to avoid a predicament or a stressful circumstance, or giving financial reward or sick leave). Please also check other cases involving aspects of somatization (e.g. 18, 44, 60 and 81). Conversion disorder often occurs with co-morbid anxiety and/or depression, and even though you have not been able to identify this thus far, it is worth keeping an open mind and exploring this further. Some people will have 'belle indifference', meaning that they would be expected to be much more distressed about their symptoms than they appear to be, which may be the case here.

Joint management between a neurologist and a liaison psychiatrist or clinical psychologist would be the most common strategy. The neurologist can get a range of necessary examinations out of the way early. These allow the clinical team to move on and be confident in their diagnosis, which promotes the most effective management. In situations like this it is possible that relatively little investigation is necessary, with hefty reassurance and explanation to the woman concerned. Most importantly, take the symptom seriously. Positive attributions about recovery are fostered by strategies that are perceived as recovery inducing. For example, physiotherapy should be used and allied with strong 'seeding' of ideas about recovery. There should be careful exploration of any factors that may be contributing to the maintenance of the symptoms. Possible areas to explore would include relationships at home and working practices. Confrontation strategies do not seem to work very well and may lead to disengagement from services or additional symptomatology. Positive reinforcement of healthy functioning needs to be built into the program. Therapy that allows the young woman to begin to understand links between stress/emotions and physical symptoms is helpful. This would include examples about stress headaches, high blood pressure, nail-biting,

palpitations and peptic ulcers. This allows a discussion about very real physical symptoms being related to stress and psychological factors. This can then move on to discussions about stressors in her life. These might be as simple as moving onto the checkouts and not being able to say no, although they may be more complex. Family mechanisms may be important if dysfunction (e.g. in the context of an alcohol-dependent father) has altered relationships, communication or developmental learning of adaptive coping strategies. Medication is not helpful unless you have identified a clear need (e.g. clinical depression). Making sure that the team members work together with a common plan is important.

Key Points	
-	Conversion disorder can produce a range of symptoms and is different from feigned symptomatology in that psychological distress elicits physical symptoms without conscious intent.
-	Management is multi-faceted.
-	Medication is not usually useful unless there is a clear co-morbid condition such as depression.

CASE 45

(History, Intense fatigue)

A 23-year-old woman comes to see you with intense fatigue. She says it has been going on for 9 months, and started after a viral infection that she caught while on a visit to relatives. At the time she had a fever, sore throat, aching muscles and felt drained. While she initially seemed to recover and went back to

work in an advertising agency, she has only been able to return to work part time for 2 weeks, and has been off continuously now for 7 months. She describes un-refreshing and disturbed sleep. She also describes feeling tired most of the time, generalized aches and feeling exhausted after even slight exercise. Her appetite is good and systemic enquiry reveals no other symptomatology.

(Mental state examination)

She makes good eye-to-eye contact. Her hair is tied up and does not look as though it has been washed for some time. She appears slightly on edge but answers all your questions openly. Her speech is normal in flow and content and she has no pressure of speech. She describes feeling fed up with being ill and low in mood. There is no suicidal ideation or intent. There is no thought passivity or any hallucinations either to observe or in the history. She also has no delusions. She does have a belief in poltergeists and wonders if there might be one in the house at the moment, because she has found things left out in the kitchen when she thought she had put them away.

Investigations
Haemoglobin level 11.9 g/dL, reference range [11.7–15.7 g/dL]
Mean corpuscular volume (MCV) 94 fL [80–99 fL]
White cell count $5.2 \times 10^9/\text{L}$ [$3.5\text{--}11.0 \times 10^9/\text{L}$]
Platelets $292 \times 10^9/\text{L}$ [$150\text{--}440 \times 10^9/\text{L}$]
Thyroid-stimulating hormone 3.2 mU/L [0.3–6.0 mU/L]
Free thyroxine 14.1 pmol/L [9.0–22.0 pmol/L]
Glucose 4.7 mmol/L [4.0–6.0 mmol/L]
Sodium 140 mmol/L [135–145 mmol/L]
Potassium 3.9 mmol/L [3.5–5.0 mmol/L]
Bicarbonate 26 mmol/L [24–30 mmol/L]
Urea 4.9 mmol/L [2.5–6.7 mmol/L]
Creatinine 76 $\mu\text{mol/L}$ [70–120 $\mu\text{mol/L}$]

(Questions)

- 1) What possible diagnoses go through your mind?
- 2) What further information would you need?

(Answer)

It is important to think broadly and remember that fatigue can be a component of a range of illnesses and social factors. Although the temptation is to think of a divide between physical and mental illnesses, very often physical illnesses have significant psychological consequences and if neurological, an effect on both physical and mental functioning. Similarly, mental health problems can lead to physical symptoms. Illnesses that should go through your mind include anemia, diabetes, hypothyroidism and renal failure, but these have been excluded by investigations. Cardiac problems (including bradycardia and heart failure) need to be excluded by further history and an electrocardiogram. Cancer and infectious diseases may also need to be carefully excluded by systemic enquiry with any follow-up

investigations as necessary. Other medical causes such as endocrine disorders, autoimmune disorders (such as myasthenia gravis) and cirrhosis or liver failure can be excluded by history, examination and investigation. Coeliac disease is unlikely since there is no anemia. Other causes of mal- absorption or malnutrition (e.g. an eating disorder) should also be excluded. Clues to the most likely diagnosis lie in the history and include depression, infectious dis- eases or chronic fatigue syndrome. Chronic fatigue syndrome is sometimes called CFS/ME and refers to the same process (myalgic encephalopathy being a more popular but pathologically inaccurate term). Some believe it may be a heterogeneous group and this is still being researched.

Oxford criteria for CFS

- | |
|---|
| <ul style="list-style-type: none"> - Severe disabling fatigue of at least 6 months' duration. - Affects both physical and mental functioning. - Present for more than 50 percent of the time. - Myalgia, sleep and mood disturbances are sometimes present. - Exclusion criteria include physical illnesses that cause fatigue, serious mental illness such as depression (low mood is not an exclusion criteria), dementia, psychosis or eating disorder. |
|---|

Treatments on offer include pacing of energy usage, cognitive behavior therapy, graded exercise and symptomatic medication. Different treatments are appropriate for different people. Various places have CFS teams that include a range of disciplines including physiotherapists, community nurses, occupational therapists, psychologists and psychiatrists who work together around agreed treatment protocols. Randomized controlled trials of medication (e.g. with antidepressants or

immunoglobulin) either show no statistical differences or give equivocal results and have been difficult to replicate. Research shows that attributions about the illness appear in research to have an impact on outcomes. The most important factor appears to be a positive and empowering approach to treatment, with a good relationship between sufferer and clinician. It is important to avoid therapeutic nihilism and collaboratively solve around therapeutic challenges.

Key Points
<ul style="list-style-type: none">- There are no diagnostic tests for CFS.- It is important to exclude other causes of fatigue.- For diagnosis in children the Oxford criteria are used, but with 3 months as the minimum duration to ensure early diagnosis and treatment.

CASE 46

(History, Hallucinations in someone with epilepsy)

You see a 27-year-old man who has epilepsy. He has a history of complex partial seizures. He has simple auditory hallucinations during the aura, but also psychotic symptoms between seizures. Prior to being on antipsychotic medication, after the seizures he would typically have a day when he felt well, and then would become unwell with auditory hallucinations, persecutory delusions, low mood and irritability. This would last for a few days. In the past he has also reported seeing fleeting images of people laughing at him. Three years ago haloperidol was added to the antiepileptic medication phenytoin. His medication has kept him reasonably well. He is troubled with extrapyramidal side effects and has come to see you about this.

(Questions)

- 1) What do you want to know to make a decision about his medication?
- 2) What options do you have?

(Answer)

Psychosis and epilepsy
Epilepsy can be associated with psychosis particularly if the temporal lobes are affected. The psychosis can be <ul style="list-style-type: none">- Ictal (occurring during the seizure)- Postictal (occurring after the seizure)- Inter-ictal (persistent and not temporally related to seizures)

It is important to work with the patient and key carers to accurately record the number, type, frequency and duration of seizures. This information should be recorded in a seizure diary. The precise nature of the psychotic symptoms and their temporal relationship with seizures should be recorded. It would be worth involving a community nurse in this work. It is also important to consider the patient's capacity and ability to consent to assessment and proposed treatment. You also need to know what extrapyramidal side-effects he is having. It would be useful to ask for an electroencephalogram (EEG) and seek a neurology opinion on improving seizure control. Change of anticonvulsant medication may improve psychotic symptoms and it may be possible to withdraw or reduce haloperidol as a result. If an alternative antipsychotic is considered, the practitioner should be aware of its effect on seizure threshold.

Unusual experiences in temporal lobe epilepsy

During the aura (seconds to minutes) the following may occur:

- Illusions or visual distortions.
- Hallucinations can be auditory, gustatory, olfactory or musical.
- Depersonalization or derealization or autoscopy (sensation of seeing one's own body).
- Strong emergence of memories.
- Déjà vu or amnesia.
- Strong emotions (e.g. anxiety, joy etc.) – some report powerful 'spiritual' experiences.

Complex partial seizures may include

- Impaired consciousness
- Repetitive movements and/or automatisms
- Lip smacking, mouth movements such as chewing and motionless staring
- Continuing with activities but without full awareness (fugue states)

There is sometimes generalization to tonic clonic seizures.
There is usually post-ictal confusion and sleepiness.

Extrapyramidal and other side effects can be unpleasant or distressing and may put patients off treatment that in other ways is working well for them. They may rarely be life threatening, especially if the dystonia affects muscles related to breathing (e.g. the larynx). Rarely, withdrawal dyskinesia may occur when medication is stopped. Options for dealing with extrapyramidal side effects include reducing the dose using more recently developed antipsychotic medication. In some instances a trial without neuroleptics is appropriate, especially if there has been good seizure control in the absence of psychotic experiences.

Key Points
<ul style="list-style-type: none">- Psychotic symptoms may occur in relation to epilepsy.- Accurately record seizures and improve seizure control.- It is important to watch for extrapyramidal side effects in those taking antipsychotic medication.

Case 47

(History, I'm impotent)

A 30-year-old man comes to see you in the general practitioner's surgery. He is embarrassed and explains that he was married last year and is having problems with his sex life. In particular he mentions that since he was married he has had problems maintaining an erection when he is with his wife. He says that when he has been able to get an erection he often has a premature ejaculation. His wife has not been able to achieve orgasm. She has been very understanding and says that she doesn't mind, but he is concerned that there is something very wrong with him. He says that their relationship is good and he is very much in love with his wife. He has not told her that he is seeking advice. On further questioning he indicates that before he married he was a virgin, but that he did masturbate regularly and had sustained erections. He still occasionally masturbates in private and can sustain an erection for at least 5 minutes. His erections are normal and not painful. Brief systemic enquiry is normal. He has no polydipsia, polyuria, frequency, other urological symptoms or cardiovascular symptoms. He is an amateur football player who plays regularly and has not had any difficulties recently with fitness. He drinks socially at weekends only and is a non-smoker. He can still enjoy himself with his

friends and his wife and denies any low mood. His work as owner of a small plumbing firm is going well.

(Physical examination)

He is clearly anxious and embarrassed. When you put him at his ease by explaining that the consultation is confidential and that this is a common problem with one in ten men experiencing it at some time, he becomes more relaxed. There is no evidence of any serious mental illness. He has a pulse of 88 beats per minute and a blood pressure of 125/75 mm Hg. His heart sounds are normal. He is fit and appears healthy. His body mass index is 22. There are no penile, testicular or scrotal abnormalities, and he has normal muscle and hair distribution. The pulses in his legs and feet are normal. Neurological examination is also normal including reflexes, fundi, visual fields and motor power. Urine stick test is normal with no sugar.

(Questions)

- 1) What possible differential diagnoses go through your mind?
- 2) Should you refer him on to a specialist urologist?
- 3) What advice can you give him?

(Answer)

Erectile dysfunction can be caused by cardiovascular problems (e.g. vascular disease in diabetes) reducing blood flow to the area, but the fact that this man can sustain an erection at other times, and the normal cardiovascular examination, make this unlikely. There is no evidence that he has low testosterone. Visual field defects are absent and there is no evidence of raised intracranial pressure or brain pathology. Smoking and alcohol consumption can affect sexual function. This is not obviously present but it will be worth asking more questions about potential

illicit drug use or use of any other medications (neuroleptics and antihypertensives would be the usual culprits). Nervous system disorders that affect sexual function tend to be those affecting older people such as Parkinson's disease, cerebrovascular accident or multiple sclerosis, although trauma to the spine may also affect function. All of these are ruled out here by history and examination. Some local cancers or local diseases (e.g. Peyronie disease) can be ruled out by normal appearance and the absence of pain or other symptoms. Aggressive cancer treatment or treatments for some systemic diseases can also affect erectile function. There is no evidence of any physical illness. A referral to a urologist is likely to make him more anxious and is unnecessary at this point. The most likely diagnosis is that this man's problems are psychological. He is able to sustain a normal erection when he is not with his wife and he clearly has a high level of performance anxiety. This has been reinforced by experiences of premature ejaculation. Research shows that problems such as this can be greatly reduced by reduction in anxiety about performance.

In the first instance a lot of reassurance will help, as well as some literature to help him understand how the body works sexually and about different sexual needs within relationships. It will also help to explain the importance of the mind, expectations and circumstances in sexual relationships, and various self-help books may help him here. If these strategies do not work then he should return to you for other alternatives. It could be helpful to talk with him and his spouse together since it is difficult to fully understand the problems of one person in the relationship when sexuality is often expressed in a dynamic between two people. Discuss this option with him but respect his wishes. The attitudes and expectations of his wife may be relevant, and the solution may need to involve them both. It may be that a local couple's

therapy or psychosexual clinic would help them. In this case, for example, it may be helpful to take the performance of sexuality out of the equation and ask them to explore each other's bodies through massage and caressing with an instruction not to have intercourse. It may be that mutual masturbation (if acceptable to them culturally) will allow him to see that he can maintain erection and reduce subsequent performance anxiety. Exploring sexuality together will also allow them as a couple to better understand each other's needs and preferences. Many people's problems disappear with time and reassurance. A request to visit you again should the problem persist would allow you to review the situation and make a referral to a psychosexual clinic for support, if the problem does not resolve with reassurance and information.

Key Points
<ul style="list-style-type: none">- Many people are anxious about sexual performance, especially in a new relationship.- Simple advice and reassurance may be effective with follow-up should the situation not improve with time.- A psychosexual clinic can sometimes be helpful if problems persist.

CASE 48

(History, I love him but I don't want sex)

A 23-year-old woman presents with her new husband. He states that they had been dating for 2 years and his girlfriend had expressed a preference to wait to consummate their relation- ship until after marriage. They did this but since marriage she has

clearly been reluctant for sex and is fearful of it. He explains that he is happy to be patient but has become increasingly concerned that she views any physical affection by him as pressure by him to engage in sexual activity. They have both felt that this issue is affecting other aspects of their relationship. The husband has had previous sexual relationships and denies any problems. The woman appears anxious about these discussions. When you see the woman alone, she confesses that she has had two sexual relationships in the past. Both were 'horrible' experiences and in both relationships she did not feel her needs were met. She found the sex uncomfortable and on occasions painful. The second boyfriend had described her as 'frigid'. She was relieved when her current partner accepted that they would refrain from sex until after marriage. She has not discussed her previous experiences with her husband. She recalls feeling very uncomfortable with a friend of her father who had made suggestive remarks when she was about 18 and had just had her first sexual relationship. Her parents are very religious and she was brought up to believe that sex before marriage was not acceptable. They rarely talked about it, and always switched the television over if there were any sexual or intimate scenes of any kind.

The woman feels that sexual issue aside, the relationship with her husband is good. She finds her own responses to his displays of affection upsetting as she can understand why he finds it hurtful. She says that she would like to have a sex life, but she finds herself becoming very fearful and sometimes when her husband is being physically affectionate in bed, it makes her feel almost like 'she is being raped', even though he has never forced himself on her, and he always leaves her alone when she makes it clear she does not want sexual contact. She cannot explain this thought and wishes it was not there so that she could relax

and enjoy their relationship. She wonders if having such a strong moral upbringing has made her regard sex as 'bad'. She works as a retail assistant and is happy in her job. There is no medical history of note. She drinks socially and does not smoke. She has not taken any illicit drugs.

(Mental state examination)

She presents as anxious but is open and communicative especially when seen alone. She describes herself as reasonably happy although she finds the current issue stressful. There is no deliberate self-harm ideation or any evidence of psychosis.

(Physical examination)

She tenses up when a vaginal examination is suggested but once reassured settles. There is nothing abnormal to find on examination.

(Questions)

- What are the types of sexual dysfunction that women may experience?
- What is the problem that this patient most likely has?
- What are the causes of sexual dysfunction in women?
- What are the appropriate treatment options?

(Answer)

In a relationship, discrepancies between the parties in sexual desire are common and usually worked through until an equilibrium is reached. It could be cyclical and related to periods, or related to changes in life events (e.g. having a baby), and these are usually dealt with supportively as part of the normal ebb and flow in the course of every relationship. Some couples present with greater problems than this. Lack of arousal or desire may be temporary or ongoing. This may lead to difficulty becoming

aroused or having an orgasm. In other cases, the woman feels sexual desire but cannot become aroused. Orgasm may not occur or may take a long time. In the latter case this usually simply requires the couple to understand this. This may be related to mood, atmosphere, timing, privacy or foreplay and all of these things can be adjusted if couples communicate with each other. If orgasm does not occur, many women get pleasure from love-making in other ways (caressing, intimacy, etc.). Some may get distressed and frustrated, especially if desire heightens without release. It can create a vicious cycle in which the woman loses interest in sex because the experience is not pleasurable. Anorgasmia may be caused by the factors described above, hormonal problems, depression, bereavement or systemic illnesses, and these can all be addressed. Sometimes there can be no discernible cause.

Lack of desire or fear of sex can also be related to myriad different problems. There may be pain during intercourse (dyspareunia). This may be because of vaginal inflammation or dryness, vaginismus, endometriosis or pelvic inflammatory disease. A cause for this should be sought and treated. Side-effects from medication such as neuroleptics, chemotherapeutic agents and cardiovascular medication can affect arousal. Psychological morbidity can affect sexual functioning including depression, obsessive-compulsive disorder, anxiety and drug or alcohol abuse. Guilt, stress and resentment can all affect a woman's sexual function. Difficulties in an aspect of the relationship such as financial pressures, stresses of combining work and home life and child rearing issues may also be at play. Many people, either because of the way they were brought up or because of earlier bad experiences, do not view sex as a healthy part of a couple's relationship. Either partner may have unrealistic expectations about sex or make unreasonable

requests. If the relationship is not good (e.g. if it involves fear or lack of mutual support) intimacy may be unwanted. Domestic violence would be an extreme example. History of abuse may lead to strong emotional negative responses to sexual intimacy or a lack of sufficient trust in her partner to relax and become aroused.

This woman should not be regarded as being ill, but may have a problem with fear of sexuality. It is important to make sure that the woman herself wants help and that she remains in control of her own body. If she does, this should be forthcoming without stigma. Counseling is the first line of treatment. This will help the woman consider her previous experiences (both of sex and her upbringing) that are factors in the current presentation. The goal is to deal with attitudes that hinder her ability to view sex as enjoyable, establishing new attitudes that increase healthy sexual experiences. A sex therapist may take couples therapy one step further by focusing on the couple's physical relationship. After identifying the couple's attitudes about sex and the sexual problem, the sex therapist recommends specific exercises to refocus the couple's attention and expectations. Group therapy or specialized support groups may allow a woman to discuss her problems with others who share them. Women often gain insight and practical solutions from these groups, as well as a greater confidence from knowing they are not alone.

Key Points
<ul style="list-style-type: none">- Sexual problems of an acute or chronic nature are common.- Physical causes need to be excluded.- Sensitive and careful history taking is important.

CASE 49C

(History, Heroin addiction)

A 19-year-old young man is brought to the general practitioner surgery by his sister with complaints of nausea, vomiting, body ache, fever, shivering and poor sleep over the past 2 days. He complains of having the ‘flu’ but his sister is worried that his symptoms may be related to drug use. He normally lives with his parents but is visiting her for the weekend. She says that he began smoking at the age of 14 and was using cannabis at age 16. He used to sniff glue at age 17 and was dabbling with opiates. Initially, he started smoking but then graduated to intravenous injections. He has been arrested twice for possession of Class A drugs and given cautions. His sister is extremely concerned about him. He denies using drugs in the presence of his sister. He says that he has experienced withdrawal having been without opiates for 48 hours when he could not find a dealer locally. Over the past few years the cost of his habit with heroin has increased from £20 a week to £300 per week. He admits that the drug clinic was not successful and that he now injects heroin twice a day. He enjoys the rush that he gets, but equally knows that he has needed to use more of the drug to achieve the same effect. He had enrolled in a youth training scheme but dropped out. He now has a rather fixed routine whereby he spends the day at home watching DVDs then going out later in the day with his friends for ‘a fix’. He acknowledges that he ought to be ‘getting out there’ trying to get a job but said he did not have the confidence to do so as he had made several unsuccessful attempts at quitting. He does not abuse alcohol

though he smokes 20 cigarettes a day. He gets unemployment benefits and says that he borrows money to fund his drug habit.

(Mental state examination)

He appears as a sullen, lanky young man, reluctant to talk. He speaks slowly but coherently, and there is no evidence of any psychotic symptoms. He appears tired and is yawning repeatedly. His mood appears anxious, and there is distinct psychomotor agitation. He has some insight into his substance misuse but presently begs to be prescribed some codeine or morphine for instant relief.

(Physical examination)

He has injection track marks in his cubital veins. His blood pressure is 148/98 mm Hg and pulse is 94 beats per minute, regular. His pupils appear dilated. He complains of muscle tenderness, but there is no significant finding on systemic examination.

(Questions)

- 1) What is the differential diagnosis?
- 2) What is the management plan?
- 3) His sister is anxious to know what causes 'drug addiction' and wants to know what she can do to help. What will you tell her?

(Answer)

This young man meets the *International Classification of Diseases, Tenth Revision (ICD-10)* criteria for dependence syndrome (in this case opiates) based on the following criteria: (1) strong desire or compulsion to take the substance, (2) difficulty in controlling substance-use behavior, (3) physiological withdrawal on discontinuation of or reduction of

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substance intake, (4) evidence of tolerance (need for increasing doses of medication to achieve the initial effect of the drug), (5) progressive neglect of other interests and (6) persistence with substance use despite evidence of harmful consequences. Narrowing of the personal repertoire of patterns of substance misuse (e.g. always injecting with friends as opposed to at home) is also present. Currently, however, he seems to be in opiate withdrawal.

Symptoms and signs of opiate withdrawal
<ul style="list-style-type: none">- Autonomic symptoms such as sweating, nausea, vomiting, diarrhea, rhinorrhea, lacrimation, shivering and piloerection ('cold turkey' refers to piloerection, or 'gooseflesh')- Body aches or abdominal cramps- Significant craving for opiates- Central nervous system arousal such as sleeplessness, psychomotor agitation and tremors- Repeated yawning

Heroin withdrawal typically peaks within 36–48 hours after discontinuation but symptoms persist for 7–14 days. Viral or bacterial gastroenteritis, acute pancreatitis, peptic ulcer or intestinal obstruction may mimic moderate to severe opioid withdrawal and need to be excluded as do psychiatric diagnoses such as mania, agitated depression and panic disorder. Comorbid substance misuse is common, and withdrawal from benzodiazepines and alcohol (tremulousness, delirium and seizures) or intoxication with substances such as amphetamines (sympathetic over activity) must also be considered. Detailed history, mental state examination, physical examination for needle marks and appropriate investigations (urine toxicology

screen, complete blood count and electrolyte levels) help clarify the diagnosis. He needs to be admitted to hospital to monitor his hemodynamic status, pupil size and bowel sounds. Opioid withdrawal is treated either by substitution with a long-acting opioid such as methadone or symptomatically with medications such as clonidine and benzodiazepines. He should be monitored closely for signs of continued illicit drug use. Psychological support and treatment of any comorbid psychiatric illness ('dual diagnoses) are vital to improve long-term outcome.

His sister's concerns need to be addressed with an explanation of the bio psychosocial factors involved in etiology. Opioid agonists act on μ -receptors rapidly producing physical dependence with strong reinforcement due to their euphoric effects. Gene polymorphisms have been implicated but environmental factors play a stronger role in causation. Social factors such as inner-city living, unemployment and poor parental functioning may play a role in initiation of drug use which is then maintained by reward conditioning. Psychological factors such as peer culture, education disenfranchisement and personality traits of curiosity and rebelliousness may also be related to initiation of drug use. Compassionate support without frustration even in the face of relapses, encouraging attendance at groups such as Narcotics Anonymous and support for family through self-help groups are likely to positively influence the outcome.

Key Points
<ul style="list-style-type: none">- Sudden discontinuation of opioid intake in opiate-dependent individuals precipitates withdrawal, usually requiring inpatient assessment and treatment.- Family support and psychological support are keys to long-term cure.

CASE 50

(History, Exhibitionism)

A 26-year-old carpet fitter presents to the emergency department having become embroiled in a fight. He says that a woman's boyfriend hit out at him for no reason. However, the paramedics report that the man had apparently 'flashed at the girlfriend and may have been masturbating'. Her boyfriend had sought to find out what was happening and a fight had started. The patient insists that he did not do anything inappropriate. When asked directly how he explains the other versions of events, he finally acknowledges that perhaps he had accidentally exposed his genitals. He then insists that this has never happened before, but when he is told that the police are waiting to interview him, he confesses he has been cautioned once before. He then states that he feels that he is not in control of himself and feels compelled to expose himself. He describes a tension that builds up inside him and a sense of relief when he is exposed. He admits that he has gradually exposed more on each occasion.

(Mental state examination)

His eye contact is furtive, but intermittently good. He is slightly agitated and appears anxious about the police wanting to interview him. His speech is normal. There are no signs of intoxication and his breath does not smell of alcohol. He is despondent in mood in the context of today's events, but there is no evidence to suggest depression. He can enjoy himself, holds down a job and has plans for his future. He does not have any hallucinations, thought disorder or delusions. He is oriented in

time, place and person. There is no cognitive impairment. A neurological examination is normal.

(Questions)

- 1) What are the differential diagnoses?
- 2) What is the most likely diagnosis?
- 3) How would this be managed?

(Answer)

Several differential diagnoses should be considered. Organic conditions that may lead to disinhibition (such as drug and alcohol use, dementia or a space-occupying lesion) should be excluded. Organic causes are unlikely here given the history and normal neurological examination, although taking a fuller drug and alcohol history or obtaining a history about recent illness or behavior from next of kin may be helpful. It is important to exclude exhibitionism as a presenting symptom in schizophrenia and affective disorder, especially mania where disinhibition is common. Some people with learning disabilities or Asperger syndrome may develop inappropriate sexually related behaviors. This may be through poor education or inappropriate channeling of sexual feelings and frustrations. A psycho-educational approach with support and reinforcement for healthy behaviors is often productive here. This man is not learning disabled (some clinicians and/or researchers use the term ‘intellectual disability’ in place of ‘learning disability’), although some judicious questions to exclude autism spectrum disorder may be warranted. Exhibitionism can also occur without a mental illness and may or may not be related to antisocial personality disorder.

Exhibitionism is the exposure of one’s genitals to a stranger, usually with no intention of further sexual activity with the other person. In some cases, the exhibitionist masturbates while

exposing himself (or while fantasizing that he is exposing himself). Some exhibitionists are aware of a conscious desire to shock or upset their target, while others fantasize that the target will become sexually aroused by their display. Several theories have been proposed regarding the origins of exhibitionism but there is no established aetiology. Almost all reported cases involve males, but this may have much to do with gender and societal behaviors in that there is less censure when women expose themselves. Exposure for subcultural reasons (e.g. naturism) or for a bet (e.g. streaking) has different psychosocial meaning. You need a thorough history (including sexual behaviors), mental state and neurological examination to rule out head trauma, seizures or other abnormalities of brain structure and function. Blood and urine tests for substance abuse and sexually transmitted diseases, including an HIV screen should be considered.

Cognitive behavior therapy is generally regarded as the most effective form of psychotherapy for exhibitionism. Group therapy when used needs to be done in an expert way to avoid reinforcing or perpetuating the thrill that the perpetrators may experience in discussion. Couples therapy or family therapy can be used if these relationships have been damaged, and if therapy is likely to be reparative. Social skills training and education will be helpful in learning disabilities and autism spectrum disorder. Medications such as selective serotonin reuptake inhibitors (SSRIs) can be tried if there is a strong obsessive-compulsive component. In some deviant sexual behaviors where there is a risk to others and psychosocial therapies have not worked, then assessment for hormonal interventions may be warranted. Consented surgery such as castration is usually reserved only for very serious and repeat sexual offenders. The prognosis depends on several factors, including the age of onset, the reasons for the

patient’s referral to psychiatric care, degree of cooperation with the therapist and comorbidity with other paraphilia (psychosexual disorders) or other mental disorders. People with exhibitionism have the highest recidivism rate of all the paraphilia. Recognition of paraphilia in adolescents and treatment for those at risk could lower the risk of recidivism.

Key Points
<ul style="list-style-type: none">- Exhibitionism is one of a range of paraphilia.- Treatment is difficult, and recidivism is high.

CASE 51

(History, Irritable, aggressive and on a mission)

A 22-year-old young man is admitted to a psychiatric inpatient unit under mental health legislation (e.g. Section 2 of the Mental Health Act in England). On admission, he is extremely agitated and hostile. He is very upset about having been admitted. He believes that he is of royal descent and is determined to punish those who are involved in ‘imprisoning’ him. It is reported by his family that he has no actual royal lineage, but that he sees himself as the person chosen to establish a new world government. He says he is on a mission. He has been angry and physically aggressive towards family members who contradict him. His grand- mother banged the back of her head from when the man pushed her against a wall and has a bruised face. He refuses to allow a detailed mental status examination. He is pacing up and down the ward intimidating other patients. He is laughing out loud, talking to himself. He repeatedly makes threatening gestures at the ward staff. He lives with his grandmother. He has no contact with his father. His mother died

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of a drug overdose when he was 6 years old. He uses cannabis regularly spending £20 a week but does not abuse alcohol or any other drugs. He smokes 40 cigarettes a day. There is no significant previous medical or psychiatric history. He has been behaving strangely, according to his grandmother, for the past 2 weeks. She has observed him spending a lot of money and talking openly about his sexual exploits to her. He has hardly slept over the past week. Two days ago, he threatened her and pushed her when she tried to urge him to see the doctor. Since then, she has been feeling increasingly frightened of him. He was prescribed the antipsychotic medication olanzapine 5 mg nocte (at night), which he has taken a few nights. However, this morning, he hit her. She reported the matter to the police, which ultimately led to his admission.

(Mental state examination)

He appears disheveled bearing 3-day-old stubble. He is pacing imperiously up and down the ward corridor, singing out loud. He also laughs and talks to himself. Any attempts to interview him result in him swearing, and when he does agree to temporarily come into the interview room he very quickly walks out slamming the door as he goes. He gives little eye contact and appears preoccupied with his own thoughts. It is not possible to discuss his thoughts or experiences with him.

(Physical examination)

He refuses a physical examination.

(Question)

How will you manage him?

(Answer)

This man is presenting with acute agitation, aggression and grandiose delusions. This may be an acute manic or psychotic episode, though an organic disorder or a drug-induced episode needs to be borne in mind. The immediate problem is containment of agitation and violence. National Institute for Health and Care Excellence (NICE) guidance advocates a three-step approach.

Risk assessment should be a continuous process to evaluate current risk and predict future risk. In this case, the risk for violence and aggression seems high as this man has several risk factors – a recent history of violence, current psychotic symptoms, continuing agitation, history of drug use, young age and male gender. He is irritable and has been threatening staff. Maintaining personal safety is a vital part of this risk assessment as is obtaining other information that informs this risk assessment. This may include general practitioner notes, corroborative history from his grandmother and medical and nursing records. Any advance directives by the patient must be taken into account. *Prevention* of violence using *de-escalation* involves calming disruptive behavior, giving clear choices and respecting dignity. Nursing observation levels should promote therapeutic engagement. Four levels are commonly used – general open, intermittent observation, within eyesight and within arm's length. *Interventions* include physical intervention, seclusion and rapid tranquilization. Physical intervention – *control and restraint* – can compromise the patient's breathing and should be used sparingly only when necessary and by trained staff to safely immobilize an individual at immediate risk. *Seclusion*, the supervised confinement of a patient in a (usually locked) room, is to be used only as a last resort to ensure both the patient and staff are safe in severely disturbed behavior. *Rapid tranquilization* is preferable to other physical interventions.

Follow the local protocol. When agitation is *non-psychotic* or there is cardiovascular risk history, a short-acting benzodiazepine such as lorazepam is the first-choice medication. Commence with 2 mg orally, if required, repeated after at least 30 minutes. If oral medication is not accepted, intramuscular (IM) medication may be used beginning with a dose of 1 mg, repeated if required with 2 mg after at least 30 minutes. Maximum daily dose should not exceed 6 mg. Diazepam is long acting and has poor IM absorption and should therefore be avoided. The major tranquilisers olanzapine Velotab (5–10 mg maximum/24 hours) or haloperidol (5 mg oral, maximum 30 mg/d) may be added if there is no improvement with benzodiazepine alone. When *psychotic* agitation is present as in this case, a combination of lorazepam 1–2 mg oral with haloperidol 5–10 mg or with olanzapine 5–10 mg oral may be offered, repeated if required after at least 30 minutes. If offered as an IM dose, separate syringes must be used. IM lorazepam must not be given within 1 hour of IM olanzapine. Seek senior advice early, and all through this process monitor the patient's pulse, temperature, blood pressure and respiratory rate regularly (every 5–10 minutes until the patient is calm and ambulatory and hourly after that). Risk of cardiac arrest or respiratory depression is increased by physical agitation, by physical interventions and by drugs used in rapid tranquilization. Resuscitation expertise and equipment must be nearby.

Key Points
<ul style="list-style-type: none">- Always use de-escalation as the preferred strategy to manage violence.- Follow local rapid tranquilization protocol policy when using medication.

CASE 52

(History, what happens when he's 18?)

A young man a few months short of his 18th birthday is presented to his general practitioner (GP) in a state of agitation. Although his parents are worried about him, he does not really think there is a problem. He is hearing voices that are auditory hallucinations and these cause him some anxiety. The voices sometimes give a running commentary of what is happening. He denies any substance misuse. He attended Child and Adolescent Mental Health Services (CAMHS) about 12 months ago when he had lost interest in his previous activities and had become increasingly withdrawn although no low mood was reported. He was lost to follow-up when his family sent him to live with some relatives in the hope that a new environment might improve the situation. He has recently returned home but the situation is worsening rather than improving.

(Questions)

- 1) What is the possible diagnosis?
- 2) What are the challenges this young man's age presents?

(Answer)

The differential diagnoses in this case are schizophrenia, substance-induced psychosis and depression with psychosis. Schizophrenia is the most likely diagnosis. It is highly likely that he was in the prodromal phase of the illness when he first presented. The risk is that this young man may fall between two services. Transition is a time of change from one place/service to another. Most CAMHS provide care to young people up to their 18th birthday. He is soon going to be too old for CAMHS, and

his care will need to be transferred to adult mental health services (AMHS). The risk is exacerbated by the fact that he does not have much insight and so engagement with one (let alone two) services may be difficult for him. Examples of mental health problems and how transition unfolds include:

- 1) Transition to AMHS and remaining with those services because of enduring mental illness such as schizophrenia
- 2) Transition to AMHS and subsequently dropping out of services (some eating disorders may fall into this category)
- 3) Referral to AMHS but not accepted for a service. (For many cases of autism spectrum disorder and attention deficit hyperactivity disorder (ADHD) there are no adult services available. Increasingly more adult services for adult ADHD are being commissioned, but these may still not be present in many places.)
- 4) Not needing to move to adult services if CAMHS could work with them for longer. (Some disorders such as an episode of depression may be treated for a while after the 18th birthday to offer continuity of care.)
- 5) Not needing to move to adult services as the problems are resolved before the need for transfer of care. (For example, episodes of depression, obsessive-compulsive disorder and anxiety may fall in this group although many of these may recur in adulthood.)

For those young people who do continue to have severe mental health problems that require a transition to AMHS, this transition from one service to another should be a smooth process that offers uninterrupted continuity of care. There can be differences between CAMHS and AMHS in relation to thresholds regarding acceptance criteria, professional differences and service structures/configurations which affect the transition process.

CAMHS and AMHS services often take differing approaches in the ways in which they work. To improve transitions there should be:

- Joint policies between services
- Local commissioning arrangements that avoid service gaps
- National and local policy documents describing models of care (e.g. preventative strategies, agreed guidelines for treatment, etc.)
- Local transition agreements that are described in service specifications (e.g. joint appointments 1 year before service move)

Key Points
<ul style="list-style-type: none">- Special care needs to be taken at transitions to ensure vulnerable patients are not lost to follow-up.- There is a need for CAMHS and AMHS to place the young person at the center of care.- Given that CAMH and AMHS may be working different ways, there is a need to ensure that the concerns of the parents are heard and appropriate support provided for them, too.

CASE 53

(History, thoughts of killing her baby)

A 28-year-old mother of a 2-month-old baby boy attends the general practitioner (GP) surgery having been referred by her health visitor as she had become concerned about the safety of the baby following a routine postnatal check-up. The mother says

that she is finding it difficult to cope with the baby and sometimes has had thoughts that it would have been better if the baby was dead. She has feelings of guilt about having such thoughts and believes that she is not a good mother. The baby was born at full term via a normal vaginal delivery. The labor lasted 18 hours and there were no other complications. She reported feeling low and tearful during the first week postpartum but said that her mood improved within a few days. However, over the past 6 weeks, she describes feeling low and tired all the time. She complains of low energy levels, poor concentration and does not enjoy looking after her son as much as she did in the past. She feels overwhelmed with the responsibility of looking after the baby and has lost her self-confidence. Her sleep is poor. She works as a nurse in a local hospital and went off work at 32 weeks of pregnancy. She was treated for a depressive episode by her GP 4 years ago. She had been prescribed fluoxetine 20 mg once a day. She took the medication for a year and then stopped the medication as she felt better. There is no other psychiatric or medical history. Her parents are retired and live in a different city. Her mother suffers from recurrent depressive disorder and has been treated with electroconvulsive therapy (ECT) in the past. This is her first child and it was a planned pregnancy. She lives with her husband who is an engineer. She describes herself as a perfectionist who likes doing things in a particular way. She is a non-smoker and a social drinker.

(Mental state examination)

This woman is seen by her GP at home. She is dressed in her night clothes, has greasy hair and has not taken a shower. She is holding the baby appropriately but does not smile or make eye contact with the baby. During the interview she bottle feeds the baby. She has discontinued breastfeeding due to mastitis. She

feels that she has let her baby down by not being able to breastfeed. She speaks in a monotonous voice and becomes tearful when asked how she is coping. She has feelings of guilt about not being a good mother. She says that she has had thoughts that it would be better if the baby was dead. On one occasion an image of her putting a pillow over the baby's face flashed through her mind, although she says she would never do this. She finds these thoughts distressing. She has thoughts of wanting to be dead but does not have any definite suicidal plans. Cognitive examination did not reveal any impairment.

(Questions)

- 1) What is the differential diagnosis?
- 2) How would you manage this patient?

(Answer)

This woman is suffering from postnatal depression, which is defined as depression occurring after childbirth. It is seen most often within 4 weeks of childbirth but can occur up to 6 months postpartum. The symptoms of postnatal depression are similar to those seen in a depressive disorder. She has all the core symptoms of depression including low mood, low energy levels and anhedonia. These symptoms have been present for more than 2 weeks. She also has additional symptoms of depression such as feelings of guilt, loss of confidence, poor sleep and suicidal thoughts. She has had an episode of depression in the past and therefore fulfills the criteria for a recurrent depressive disorder with the current episode being moderate to severe. The prevalence rate of postnatal depression is between 8 percent and 20 percent. Many such women have had depression in the past. It is important to screen for depression in pregnancy and health visitors can use the Edinburgh Postnatal Depression Scale (EPDS) as a part of antenatal check-up.

Differential diagnosis

- *Postpartum blues* is seen in up to 75 percent of women and is characterized by a mild self-limiting episode of mood disturbance lasting a few days. It usually begins 3–10 days postpartum (peak onset days 5–7) and resolves spontaneously.
- *Postpartum psychosis* is seen in 1 percent of women and is characterized by rapid onset of labile mood, thought disorder, confusion and disorientation. Previous history and family history of mental illness, particularly of bipolar disorder, are significant risk factors. This is a severe disorder and often requires inpatient treatment. Delirium (e.g. infective) needs to be excluded with this presentation.

(Management)

This woman needs to be referred to a specialist Mother and Baby (Perinatal Psychiatric) team for urgent assessment of the risk of harm to the baby and risk of self-harm, which dictates the course of further management. One option, depending on risk and choice, is admission to the Mother and Baby Unit for further assessment and management. There are several benefits of admitting mother and baby together. It lets the mother continue to breastfeed, allows for healthy development of attachment and maintains the confidence of the mother in her parenting ability. Parenting assessment allows early detection of problems with attachment and institution of remedial measures. Treatment for depression includes cognitive behavior therapy (CBT) and/or pharmacotherapy. Lofepramine, fluoxetine and sertraline, although expressed in breast milk, are considered relatively safe, unlike medications such as lithium and sodium valproate which

should not be used in breastfeeding mothers. If the parenting assessment raises concerns about the safety of the child (risk of harm or neglect), then a referral to the child safeguarding team should be made. Occasionally involuntary detention under the local Mental Health Act may be warranted especially if there is high risk and little insight from the mother.

Key Points
<ul style="list-style-type: none">- Childbirth is a vulnerable period for women with risk of postpartum blues, post- partum depression and postpartum psychosis.- Be aware of medications expressed in breast milk.- Risk to the baby should dictate early involvement of specialist Mother and Baby Unit and child protection teams.- Health visitors and GPs need to have a high index of suspicion.

CASE 54

(History, My wife is having an affair)

A 45-year-old publican presents to his general practitioner (GP) complaining of being unable to cope with his wife’s behavior. He goes on to tell the GP that his wife of over 20 years has recently begun to have numerous affairs with customers at the pub they run. He can tell whom his wife has had an affair with because of the ‘way she looks at them’. He has confronted her about this on several occasions but she denies his accusations. As a result of his suspicions, he keeps a log of the mileage of her car to check where she has been. His wife has become very upset

by the change in his behavior and has moved into the spare bedroom. He has taken this as further confirmation that she is having an affair. He first became concerned about his wife's behavior a month ago. Since that time his mood has been low and he has become increasingly preoccupied by thoughts of her infidelity. His sleep, appetite and concentration are poor. He has begun to have financial problems as he is finding it hard to run the public house due to the stress he is under. He has previously suffered from moderate depressive episodes and stopped his antidepressant medication over a year ago. There is no other past medical or psychiatric history of note. He describes himself as a 'social drinker' due to his job. On direct questioning he admits to a gradual increase in his alcohol intake over the last couple of years. He is now drinking every day and typically consumes in excess of 60 units per week. There is no history of illicit substance abuse.

(Mental state examination)

He has good eye contact and is perspiring. He presents as an overweight middle-aged man who is slightly unkempt and smells of alcohol. He is initially reluctant to talk about his difficulties, repeatedly saying that his wife would not be having affairs if he was 'a real man'. He reports that his mood is 'terrible' and objectively he appears low. His thought content is mainly concerned with the belief that his wife is being unfaithful. He is unwilling to even accept the possibility that he may be mistaken, yet has no concrete evidence upon which he has reached this conclusion. There is no abnormality of perception and his cognition is grossly intact. He does not think he is mentally unwell but is willing to accept help to deal with the stress he is under.

(Physical examination)

The only abnormality upon physical examination is palmar erythema and mild hepatomegaly.

(Questions)

- 1) What term is used to describe this presentation?
- 2) What is the differential diagnosis for this presentation?
- 3) Who may be at risk from this patient?

(Answer)

This patient falsely believes that his wife is being unfaithful. He has reached this conclusion in the absence of any appropriate evidence and despite evidence to the contrary. He holds this belief with absolute conviction, and he is becoming increasingly preoccupied by this belief. This presentation is often referred to as pathological jealousy (also known as morbid jealousy or Othello syndrome). Pathological jealousy is a descriptive term rather than a diagnosis and its differential diagnosis is shown in the following box.

Differential diagnosis of pathological jealousy
<ul style="list-style-type: none">- Depressive episode with psychotic symptoms: evidence of sustained low mood with decreased sleep, appetite and concentration. Psychotic symptoms are in keeping with low mood (i.e. mood congruent).- Delusional disorder: presence of delusional beliefs with an absence of other symptoms such as hallucinations.- Schizophrenia: presence of delusions and hallucinations with an absence of prominent mood symptoms.- Schizoaffective disorder: mood and psychotic symptoms are equally prominent but psychotic symptoms may not

be in keeping with the expressed mood (i.e. mood incongruent).

- Organic psychosis: may be due to alcohol/illicit substance abuse or underlying physical disorder such as brain tumor or temporal lobe epilepsy (TLE).
- Paranoid personality disorder: lifelong pattern of suspicion of the motives of others with a tendency to misperceive neutral events as hostile and threatening.
- Asperger syndrome with misinterpretation of the motives of others.

Those with pathological jealousy are distressed by their false belief in their partner's infidelity and show unreasonable behavior (such as checking for proof that their partner is being unfaithful and frequent accusations). This can escalate to become increasingly extreme. This combination of strong emotions and acting upon delusional beliefs is particularly dangerous. The patient's partner may be at increased risk, and the risk of homicide in such situations can be high. A referral to adult safeguarding or the police may be necessary. Other people could also be at risk from the patient if he believes that they are involved in his partner's infidelity. Breaching the patient's confidentiality in the interest of public safety may be justified. Finally, the patient himself is at increased risk of suicide due to the high level of distress and conviction that his partner is being unfaithful. These risks will be further increased in the presence of alcohol/illicit substance abuse.

Key Points

- Pathological jealousy is a descriptive term, not a diagnosis, and a careful assessment should be made to obtain an underlying diagnosis.

- Those presenting with these symptoms may pose a risk to themselves, their partners and others. Comorbid substance misuse is often present and further increases the risk of harm to others and self.
- A detailed risk assessment must be conducted in all cases of pathological jealousy.

CASE 55

(History, A man in police custody)

A 20-year-old roofer is brought to the emergency department by the police. He is under arrest after having been charged with assaulting his girlfriend. They had both been drinking and then had an argument during which he punched her several times. During the ensuing struggle he fell and struck his head on the kerb. Following this he was unresponsive for a few seconds. When the police arrived he was alert and denied any physical problems. While in the police van, on the way to the police station, he vomited and appeared to become unresponsive for approximately 30 seconds. In the custody cell, he is loudly shouting and swearing at the accompanying police officers. On attempting to get a history, he becomes more agitated, repeatedly shouting, 'I know what you're here for. They want you to give me a lethal injection'. He is normally fit and well and has no previous history of psychiatric disorder or substance abuse. The accompanying police officers say that he has not been previously known to the police.

(Mental state examination)

He presents as a slim, reasonably kempt young man who smells of alcohol. He is agitated and restless, and eye contact is

variable. He is difficult to engage and answers most questions by being verbally abusive. After some persuasion, he eventually acknowledges that he is being offered help and he agrees to cooperate with the assessment. His speech is loud, rapid and slurred. He says that he is worried that the police might want to kill him and that he can see bats flying around the department. Upon cognitive testing he is able to correctly tell his name and date of birth but is not able to correctly state the current day, month or year. His short- term memory also appears to be impaired.

(Physical examination)

Cardiovascular, respiratory and abdominal examinations are normal. Upon neurological examination he has an up-going left plantar response but no other abnormality.

(Questions)

- 1) What investigations would you want to carry out in this patient?
- 2) The police and nurses tell you that he is ‘just drunk’ and request your advice about returning him to police custody as soon as you have finished your physical examination. What would be your response?

(Answer)

Although he appears intoxicated with alcohol and agitated following the argument with his girlfriend, there are several indicators of a possible organic cause for his current presentation (such as subdural hematoma). He has a history of having sustained a recent head injury that caused him to lose consciousness and since then he has vomited and had a further brief period of possible loss of consciousness. There is also a

non-specific abnormality on neurological examination. His speech is slurred and he is agitated (although this could also be due to alcohol intoxication). In addition to this, he has psychotic symptoms (believing that the police want to kill him and seeing bats) and cognitive impairment (disorientated to time and impaired short-term memory) which are probably of acute onset. While visual hallucinations can occur in functional mental illnesses (such as schizophrenia) they are relatively rare and often indicate the presence of an underlying organic disorder. Given all these factors it is important to rule out any possible organic causes of this man's presentation by physical examination and appropriate use of investigations.

Investigations

- Obtain further collateral history: previous medical records (including psychiatric and general practitioner notes if available) and further information from the police and the patient's girlfriend/family.
- Urine illicit drug screen to exclude intoxication with drugs such as amphetamine or cannabis.
- Blood tests include full blood count (FBC), urea and electrolytes (U+Es), calcium, liver function tests (LFTs), thyroid function tests (TFTs) and C-reactive protein (CRP). The results of these tests will help to exclude infection or metabolic derangement.
- Computerized tomography (CT) brain scan to exclude cerebrovascular event (i.e. hemorrhage or infarction) or space-occupying lesion (i.e. tumor, subdural hematoma or abscess).

Given the high index of suspicion of an organic basis for this man's presentation, it is imperative that he does not leave the

emergency department until this has either been excluded or he has received appropriate treatment. Your response to these requests should be to politely but firmly point out that there are some parts of this man's presentation that do not fit with a simple diagnosis of 'acute alcohol intoxication'. You should state that it is important he receives appropriate clinical care, based on the results of these investigations, to exclude other organic causes. If an organic cause is excluded and he is thought to be mentally ill, then he may be offered admission to an inpatient psychiatric unit. It will be important to assess whether he has the capacity to consent to admission, failing which, an involuntary admission may be required using the appropriate local capacity or mental health legislation (Mental Capacity Act and Mental Health Act, respectively, in England).

Key Points
<ul style="list-style-type: none">- The acute onset of cognitive problems or psychotic symptoms (especially visual hallucinations) may indicate an acute organic condition.- Always have a high index of suspicion for organic causes of ‘psychiatric’ presentations and employ appropriate physical examination and investigations to rule them out.- Alcohol intoxication may mask the presence of underlying physical conditions.

Tasks 1 – 10

1. Describe the key features of major depressive disorder as presented in Case 1.
2. What diagnostic criteria would you use to differentiate between generalized anxiety disorder and panic disorder in Case 7?
3. How would you approach the management of a patient with schizophrenia, as discussed in Case 15?
4. Discuss the differential diagnosis of a patient presenting with symptoms of mania, as illustrated in Case 22?
5. What are the treatment options for obsessive-compulsive disorder, as outlined in Case 35?
6. Explain the role of cognitive-behavioral therapy in the treatment of post-traumatic stress disorder, as demonstrated in Case 48?
7. How would you assess and manage a patient with delirium, as described in Case 57?
8. Discuss the challenges in diagnosing and treating personality disorders, using Case 54 as an example.

9. What are the risk factors and warning signs for suicide in patients with mood disorders, as highlighted in Case 41?
10. Describe the pharmacological and non-pharmacological interventions for managing attention-deficit/hyperactivity disorder, as presented in Case 2 and 52?

List of References

[1] Wright Barry et al. 100 cases in psychiatry, second edition [Electronic reference] / Et al Barry Wright // CRC Press: Taylor and Francis Group. – 2017. – Access mode: https://www.google.ru/books/edition/100_Cases_in_Psychiatry/03BdDgAAQBAJ?hl=en&gbpv=1&printsec=frontcover – 275 p

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Mental Health

in BRICS Countries: A Global Perspective

"Mental health is an extremely important public health issue and that mental well-being is fundamental to a good quality of life and the productivity of individuals, families and communities. The Ministers resolved to collaborate in promoting mental health and well-being in order to bring better health and socio-economic benefits". (The BRICS Health Ministers, Moscow, October 30, 2015)

"We can see other people's behavior, but not their experience. The other person's behavior is an experience of mine. My behavior is an experience of the other. The task of social phenomenology is to relate my experience of the other's behavior to the other's experience of my behavior." (R.D. Laing, (Ye olde xero xenford annvaire 2008/2009, A congeries of writings by Paul Green).

"What if the mind's greatest ally in this digital age isn't human at all? As AI learns to understand emotions, the future of mental health is being rewritten—one algorithm at a time." (Authors, 2025)

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