INCIDENCE OF MENTAL DISORDERS IN KAZAKHSTAN IN 2011-2020: AN INFORMATION-ANALYTICAL STUDY

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Abstract
Introduction. Mental disorders, characterized by disturbances in thinking, feeling, and behavior, pose a significant medical and social challenge. They affect a substantial portion of the population, leading to profound health implications and diminished quality of life. Despite the considerable interest in this area, data regarding the prevalence of mental disorders in the Republic of Kazakhstan still need to be made available. This study aims to analyze the trend of mental disorder prevalence in Kazakhstan from 2011 to 2020, considering various factors such as gender, age, and residency.

Methods. This study employed an informational and analytical approach. Data from 10 statistical compilations of the Ministry of Health of the Republic of Kazakhstan spanning from 2011 to 2020 were utilized to assess the prevalence of mental disorders. Information about morbidity falling under the category of “mental disorders and behavioral disorders” was incorporated. The data were processed and presented in terms of absolute values and relative indicators.

Results and conclusions. Analyzing mental disorder incidence data in Kazakhstan over the ten years revealed several trends. Overall morbidity rates showed a declining trend, notwithstanding some years witnessing minor increases in morbidity. The relative incidence rates also decreased, as evidenced by data per 100,000 population. Primary morbidity demonstrated a general decline, with a notable decrease observed in the first half of the study period. Across age groups, morbidity rates decreased in all categories, with the highest rates observed among adults. Moreover, there was a reduction in morbidity rates in both urban and rural populations, albeit with urban areas consistently exhibiting higher rates than rural areas. These findings could inform the development of interventions aimed at enhancing the mental well-being of the population and improving the management of this medical and social challenge in the future.

Keywords: Mental disorders, Incidence, Morbidity, Kazakhstan

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INTRODUCTION
Mental disorders are characterized as mental illnesses that manifest through impaired adaptation, resulting in abnormalities in thinking, feeling, and behavior, which can disrupt normal functioning [1]. The term "mental disorder" is often preferred as it is considered more neutral and less stigmatizing than "mental illness" [2, 3]. In 2019, mental disorders affected one in eight individuals globally, totaling 970 million people. Among them, anxiety and depressive disorders were the most prevalent [4]. Lifetime incidence rates of certain mental disorders vary based on gender and/or socioeconomic status, reaching as high as 50% among individuals aged 20 to 30 years [5]. Nearly half of all cases of mental disorders onset during adolescence, with three-quarters occurring by the age of 25 [6]. Individuals with mental disorders face elevated risks of morbidity and mortality, including suicide, leading to a significant reduction in life expectancy by 10-20 years [7]. Psychiatric diagnoses, particularly mood and neurotic disorders, contribute to an increase in disability benefit recipients and workforce incapacitation in the UK [8]. In several countries, including the United States, Canada, Australia, New Zealand, Mexico, Japan, and Korea, mental disorders account for up to one-third of all disability pension payments [9]. The prevalence of mental disorders is also a pertinent issue in Central Asian countries. This study aims to analyze the incidence rates of mental disorders in the Republic of Kazakhstan from 2011 to 2020, with a focus on understanding the dynamics of changes in the frequency of various mental disorders concerning gender, age, and place of residence.

METHODS
An information-analytical approach was employed for this study. To evaluate the prevalence of mental disorders in the Republic of Kazakhstan, we examined data from 10 statistical compilations of the Ministry of Health of the Republic of Kazakhstan titled "Health of the population of the Republic of Kazakhstan and activities of health care organizations" spanning from 2011 to 2020 [10]. Each compilation consists of 20 sections containing numerical data on the operations of medical organizations and public health conditions [11]. Information in these compilations is gathered using the statistical tool of the Republican State Enterprise "Republican Centre for e-Health." Our study included all morbidity indicators related to "mental and behavioral disorders" from 2011 to 2020, excluding data on other diseases during this period. Comparable incidence data in the same category for the Central Asian countries of Kyrgyzstan, Uzbekistan, Turkmenistan, and Tajikistan were obtained from the 2020 compendium. Summary tables containing data for the entire period were created in a separate Word document to process data from the ten compilations. All statistics presented in the study are provided in absolute values and relative indicators. Comparable incidence data within the same category for the Central Asian countries of Kyrgyzstan, Uzbekistan, Turkmenistan, and Tajikistan were obtained from the 2020 Yearbook.

Statistical Analysis
Statistical analysis was performed to identify trends in overall incidence. Quantitative indicators were assessed for conformity to a normal distribution using the Shapiro-Wilk test. The direction and strength of the correlation between two quantitative indicators were evaluated using the Spearman rank correlation coefficient when the indicators did not follow a normal distribution. A predictive model characterizing the dependence of a quantitative variable on factors was developed using the linear regression method. Differences were considered statistically significant at p < 0.05.

RESULTS
The analysis revealed that the overall incidence of mental disorders in the general population decreased by 95,188 cases over the decade under review. While the incidence decreased steadily from 2011 to 2015, there were slight increases in 2016, 2018, and 2019. The statistical analysis revealed a statistically significant inverse correlation between year and overall incidence (rxy=−0.709; p=0.022). According to Cheddock's scale, this relationship shows high closeness. The trend indicates that overall incidence decreases with each successive year. The detailed data are illustrated in Figure 1.

Comparing the relative incidence rate of mental disorders in the general population per 100,000 individuals, a downward trend is evident. In 2011, there were 1,927.1 cases per 100,000 people, decreasing to 1,193.8 cases per 100,000 population by 2020, as shown in Table 1.

Regarding the primary incidence of mental disorders across the entire population, there was a decrease in absolute values, with 8,620 fewer cases between 2012 and 2020. Notably, a significant decline in incidence to 10,191 cases was observed from 2011 to 2014. From 2015 to 2020, there were fluctuations, with periods of decline and slight increases in incidence. By 2020, the incidence rate reached 8,459 cases. Detailed data are presented in Figure 2.
An examination of primary morbidity among the population with mental disorders across different age categories revealed a decline in morbidity across all age groups from 2012 to 2020. For instance, in 2012, the incidence rate among individuals aged 18 years and above was 9,801 cases, decreasing to 4,549 cases by 2020. Similarly, the incidence rate in the age group of 15-17 years decreased by 687 cases during the same period, while the incidence rate in the 0-14 years decreased by 2,681 cases. The highest incidence rate was found among the older age group (18 years and above), while the lowest incidence rate was observed among those aged 15-17. The detailed data are depicted in Figure 3.

From 2011 to 2020, there was a decline in the incidence of mental disorders among both urban and rural populations, with urban areas consistently exhibiting higher incidence rates compared to rural areas throughout the study period. Detailed data are presented in Table 2.

**DISCUSSION**

The data obtained indicate a significant reduction in the overall incidence rate of mental disorders in the general population by about 1.4 times over the decade under study. Relative to this, the incidence per 100,000 population decreased by 733 cases. Furthermore, a noteworthy decline of 50% in primary morbidity in the general population was recorded between 2012 and 2020.Analyzing primary morbidity across age groups revealed a decrease in all categories. Notably, the highest incidence was observed among the older age group (18 years and above), while the lowest incidence was among the 15-17 age group.

The observed decrease in incidence rates in urban and rural populations from 2011 to 2020, with urban areas consistently showing higher incidence rates than rural areas, aligns with trends observed in Central Asian countries. Notably, the primary incidence of mental disorders per 100,000 population was higher in Kyrgyzstan (171.63), followed by Uzbekistan (107.50), Turkmenistan (34.66), and Tajikistan (20.11) [12].

The utilization of registry data is essential in psychiatric research [13]. Extensive epidemiological studies conducted between 1950 and 1975 revealed a wide range in the prevalence of psychopathological disorders [14]. Estimates based on meta-analyses and re-analyses of data indicate that about 27% of the adult population in the European Union has experienced at least one mental disorder in the last 12 months [15]. Studies such as the Netherlands Mental Health and Morbidity Study NEMESIS demonstrated that approximately 41.2% of adults under 65 experienced at least one disorder, with no gender differences observed in overall prevalence statistics. Common disorders include depression, anxiety conditions, alcohol abuse, and dependence [16].

Furthermore, research by Baumeister H. and colleagues identified mood disorders (6.6-11.9%), anxiety states (5.6-18.1%), psychoactive disorders (3.8-11.3%), and somatoform disorders (11.0%) as prevalent types of disorders [17]. Similarly, Wittchen, H. U. and colleagues reported anxiety disorders (14.0%), insomnia (7.0%), major depression (6.9%), somatoform disorders (6.3%), as well as alcohol and drug dependence (over 4%), ADHD in the young, and dementia (1-30%, depending on age) as common disorders in the European population [18]. Another European study highlighted depression (9.6%), panic disorder (7.0%), specific phobias (6.6%), and generalized anxiety disorder (3.8%) as the most common mental disorders [19].

While our study analyzed the general group of mental disorders without considering their classification into subgroups and individual diseases, future informative and analytical studies incorporating this classification are planned. Nevertheless, the strength of our study lies in its extensive temporal coverage spanning a decade, enabling the identification of meaningful morbidity trends.

**CONCLUSION**

Mental disorders persist as a significant medical and social challenge, profoundly impacting the health and quality of life of the population. Our study has provided valuable insights into the evolving prevalence of these disorders in the Republic of Kazakhstan over the past decade. The data obtained from this study offer a foundation for developing impactful strategies and programs aimed at enhancing the mental health of the population in the Republic of Kazakhstan.

**AUTHOR CONTRIBUTION**

All co-authors contributed substantially to the concept, formulation, searches of relevant articles, and revisions. They approve the final version of the manuscript and take full responsibility for all aspects of the work.

**DATA AVAILABILITY**

The data that support the finding of this study are available on a reasonable request from the corresponding author.
CONFLICT OF INTEREST
The authors have stated that there are no conflicts of interest in connection with this article.

FUNDING
None

ETHICAL APPROVAL
Ethical approval was not obtained because humans or animals were not involved in this study. We did not use the participants' personal data, including their photos, medical history or other identifying data. Data from the compilations are in the public domain and are not confidential.

References

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Figure 1. The overall and primary incidence rate of mental disorders in the total population in absolute numbers

Figure 2. Primary morbidity of the total population with mental disorders in absolute numbers

Figure 3. Primary morbidity of population with mental disorders in absolute numbers by age groups
Table 1. The overall incidence of mental disorders in the general population in relative numbers (per 100,000 population).

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Table 2. Primary morbidity of population with mental disorders in relative numbers (per 100,000 population) according to place of residence.

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<td>48.8</td>
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2011-2020 ЖЫЛДАРЫ ҚАЗАҚСТАНДАҒЫ ПСИХИКАЛЫҚ БУЗЫЛУЛДАРЫҢ ЖИЛІЛІГІ: АҚПАРАТТЫҚ-АНАЛИТИКАЛЫҚ ЗЕРТТЕУ

Түйіндеме

Кірісіне. Ойлау, сәзді және мінез-құлыққа бүзүлүмді, сапатталатын психикалық бузулардың мәніндең Медициналық және элөуметтік мағане болды табылды. Олар халықтың ең бүгінгі ерек-бөлігіне есер етеді, бұл денсаулыққа ауыр зардарға және вілім сапасындағы тәмендеуіне алып келеді. Осы салага айтарлықтай қызғанушылық таңықтанып келіседі, Қазақстан Республикасында психикалық бузулардың таралуы туралы дерекет елі де кол жүктімділікі қажет етеді. Бұл зерттеудің мақсаты жынысы, жасы және тұрғылықты жері сияқты артурларға есеппен, 2011 жылыдан 2020 жылға дейін Қазақстанда психикалық бузулардың таралу ўрдисін талдау болып табылады.

Едістери. Бұл зерттеуде ақпараттық-аналитикалық тәсіл қолданылыды. Психикалық бузулардың таралуын баялау үшін Қазақстан Республикасы Денсаулық сақтау міністрлігінің 2011-2020 жылдарыңың 10 статистикалық жинағының дерекеті пайдаланылыды. "Психикалық бузулар және мінез-құлық бузылуын" санатына ұатаңы ауру туралы ақпарат енгізілді. Дерекет өңделіп, абсолютті мәндер мен салыстырымалы көрсеткіштер тұрғында ұсынылды.

Нәтижелер мен қорытындылар. Қазақстанда оның ішінде психикалық бузулармен сыйкыттанушылық туралы дерекетді талдау бірнеше тәнденшияны қынықтады. Кейбір жылдары сыйкыттанушылық саны есімді байланысты көрсетеді, жалпы сыйкыттанушылық денгейі тәміндеу ұрдісіне өте болды. Аурулардың салыстырымалы көрсеткіштері де тәміндеуі, бұл 100 000 тұрғынға қарайтатын дерекетпен көрінеді. Бастапқы ауру жалпы тәміндеуі қорсетті, сондай-ақ зерттеу кезенің бірінші жарылысында айтарлықтай тәміндеу байқалды. Барлық жас топтарында аурулардын көрсеткіштері барлық санаттарда тәміндеу, ең жоғары көрсеткіштер ерекшелер әртасында байқалады. Сонымен қатар, қызғанушының дан, ауыл тұрғындарының дан ауру денгейінің тәміндеуі байқалады, дегенмен қалапп қалып жырлерде бұл көрсеткіш ауылдық жырларге қарқанға ұнемі жоғары болды. Бұл нәтижелер халықтың психикалық ал-ауыткына жақсартуға және болашақта осы медициналық және элөуметтік мәселенің қолдауын жақсартуға бағытталған шараларды азірлеуге негіз бола алды.

Түйінді әсерлер: психикалық бузылұстар, аурулар, білдіру, Қазақстан.


ЗАБОЛЕВАЕМОСТЬ ПСИХИЧЕСКИМИ РАССТРОЙСТВАМИ В КАЗАХСТАНЕ В 2011-2020 ГГ.: ИНФОРМАЦИОНАНО-АНАЛИТИЧЕСКОЕ ИССЛЕДОВАНИЕ

Резюме

Введение. Психические расстройства, характеризующиеся нарушениями мышления, чувств и поведения, представляют собой серьезную медицинскую и социальную проблему. Они затрагивают значительную часть населения, что приводит к серьезным последствиям для здоровья и снижению качества жизни. Несмотря на значительный интерес к этой области, данные о распространенности психических расстройств в Республике Казахстан все еще нуждаются в доступе. Целью данного исследования является анализ тенденции распространенности психических расстройств в Казахстане с 2011 по 2020 год с учетом различных факторов, таких как пол, возраст и место жительства.

Методы. В данном исследовании использовался информационно-аналитический подход. Для оценки распространенности психических расстройств использованы данные 10 статистических сборников Министерства здравоохранения Республики Казахстан за 2011-2020 годы. Была включена информация о заболеваемости, подпадающей под категорию «психические расстройства и расстройства поведения». Данные были обработаны и представлены в виде абсолютных значений и относительных показателей.

Результаты и выводы. Анализ данных о заболеваемости психическими расстройствами в Казахстане за десять лет выявил несколько тенденций. Общий уровень заболеваемости имел тенденцию к снижению, несмотря на то, что в некоторые годы наблюдался незначительный рост заболеваемости. Относительные показатели заболеваемости также снизились, о чем свидетельствуют
данные на 100 000 населения. Первичная заболеваемость продемонстрировала общее снижение, причем заметное снижение наблюдалось в первой половине периода исследования. Во всех возрастных группах показатели заболеваемости снизились во всех категориях, при этом самые высокие показатели наблюдались среди взрослых. Более того, наблюдалось снижение уровня заболеваемости как среди городского, так и среди сельского населения, хотя в городских районах этот показатель постоянно был выше, чем в сельской местности. Эти результаты могут послужить основой для разработки мер, направленных на улучшение психического благополучия населения и улучшение решения этой медицинской и социальной проблемы в будущем.

Ключевые слова: психические расстройства, заболеваемость, инвалидность, Казахстан.