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REVIEW OF STATISTICAL DATA ON THE SITUATION WITH SUICIDES AMONG THE CHILD POPULATION OF THE REPUBLIC OF KAZAKHSTAN IN A COMPARATIVE ASPECT

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Abstract

Suicide is a critical public health issue with far-reaching societal impacts. It causes profound emotional distress for families, significant economic losses from reduced productivity, and escalating healthcare costs. Despite its gravity, suicide remains inadequately addressed in many regions, with key metrics, such as years of lost working life, often uncalculated.

Objective of the research. To study the prevalence rate of suicides and suicide attempts among minors according to statistical reports available for the research.

Methods and materials. The object of the research is the child population of the Republic of Kazakhstan (age: up to 18 years) exposed to suicidal behavior (suicides and suicide attempts). Data for research: statistical data of the Official website of the Committee on Legal Statistics and Special Records of the General Prosecutor's Office of the Republic of Kazakhstan «Information on criminal offenses, perpetrators, on the work of criminal prosecution authorities and committed suicides» over the periods from 2017-2024 were used.

Results. Analysis of available statistical data has shown the need to create an integrated database with indicators that maximally reflect the complex of biopsychosocial problems of auto-aggressive destructive behavior among minors. It is necessary to develop and implement an integrated database that reflects all aspects of suicidal ideation in the child population with mental disorders and illnesses.

Discussion.Development and implementation of an integrated database will make it possible to plan the training of specialists in child psychiatry and child medical psychology.

Conclusion.Use of developed algorithms and models based on machine learning can be used to create tools that allow specialists working in the field of children's mental health to conduct more accurate and rapid diagnosis of suicidal tendencies in children, effectively develop algorithms for prevention programs and interventions that take into account individual and regional peculiarities.

Keywords: *suicide, completed suicide, suicide attempts, child population, suicide statistics, suicidal behavior.*

Introduction

The social demand and economic and industrial interest in the development of an interdisciplinary systematic approach to preventing suicide among minors is determined, among other things, by the fact that after the Republic of Kazakhstan ratified the UN Convention on the Rights of the Child in 1994, a new concept of protection and assistance to children began to take shape in social policy. It is based on the recognition of the need to treat the child as a person, as an independent subject of legal relations, and the need to create a system of social and legal protection and rehabilitation that would guarantee the restoration of violated rights and legitimate interests of the child in the family, in education, in social relations and, in general, in

all aspects of life. One of the important indicators of the mental health of the population is the suicide rate, including among the child population.

The study, based on data from the World Health Organization (WHO), covers suicides among young people aged 10 to 24 years worldwide from 1990 to 2020. It was conducted to analyze long-term tendencies and identify geographical patterns in suicide mortality among young people. Suicide among this age group remains a significant public health problem, and differences in suicide rates are significant by region and gender [1].

According to the WHO classification (2011), Kazakhstan was in the third group of countries with high suicide statistics, where suicide is the first and leading cause of death from unnatural causes among adolescents and young people. Thus, in 2011, the total number of suicide cases in Kazakhstan amounted to 3,433, with a suicide rate of 23.7 per 100,000 individuals. The suicide rate among 15-19 years old adolescents and 20-24 years old young people was respectively 23.5 and 30.9 per 100,000 individuals. More than 90 % of adolescents who committed suicide were suffering from various associated mental disorders at the time of death, and more than half of the said 90 % had suffered from mental disorders for at least two years before committing suicide [2]. Many suicidologists note the increased sensitivity, weakness, and «mental vulnerability» of children, which are largely associated with still unformed physical, physiological, and mental functions [3].

The tables and diagrams in the article show the statistics information on criminal offenses, their perpetrators, the work of criminal prosecution bodies, and committed suicides over the 2017-2019 period (for this period, complete data are available) and over the period from 2019 to the beginning of 2024 [4].

The development of any preventive measure requires knowledge of the spread of the problem, frequency of manifestation, gender, family history, region of residence, and many other indicators in order to develop the most effective strategy, in this case - the prevention of suicidal behavior among the child population of the Republic of Kazakhstan. In recent decades, the development of machine learning models for predicting suicidal behavior has been actively pursued, which can also serve as an effective tool in the prevention of suicidal ideation in children and adolescents. As it is known, childhood and adolescence are accompanied by м radical somatic and mental changes, sometimes leading to fierce clashes with society and its institutions and, finally, taking place with the uniformity of biological processes very differently in different socio-cultural conditions.

In our scientific research, we proceed from the need to create an effective integrated system of prevention for early detection of signs of self-destructive/destructive behavior in the context of not only biopsychosocial factors but also in the context of clinical suicidology with the analysis of clinical-psychopathological and pathopsychological features of the dynamics of deviant behavior among the child population of the Republic of Kazakhstan using modern technologies - artificial intelligence.

At the moment, clinical suicidology knows the main types of suicides – demonstrative, covert, true, and affective. Each case of an attempt on life requires careful analysis for clinical classification of suicidal behavior. Suicidal behavior is a stage process, and each stage (pre-suicidal, committing suicide, and post-suicidal) includes several clinical manifestations. They are conventionally called «internal and external» and form the pre-suicidal and suicidal phases. The exception may be spontaneous suicides, when there is no gradual development of suicidal ideation, and leaving life seems to be the only solution to the problem and occurs within a short period.

However, research in the field of child and adolescent suicidology is extremely scarce. The interdependence of suicidal behavior with the dysontogenesis of mental functions, as well as the influence of age and developmental crises on the frequency of suicide attempts and completed suicides in childhood, are poorly systematized and not reflected.

Objective of the research. To study the prevalence of suicides and suicide attempts among minors according to available statistical reports to thoroughly analyze and identify the most significant factors in the development of suicidal ideation in children and adolescents.

Methods and materials

The object of the research is the child population of the Republic of Kazakhstan (age: up to 18 years) exposed to suicidal behavior (suicides and suicide attempts).

Data for research:

- statistical data from the Official website of the Committee on Legal Statistics and Special Records of the General Prosecutor's Office of the Republic of Kazakhstan, «Information on criminal offenses, perpetrators, on the work of criminal prosecution authorities and committed suicides» over the periods from 2017-2024 were used.

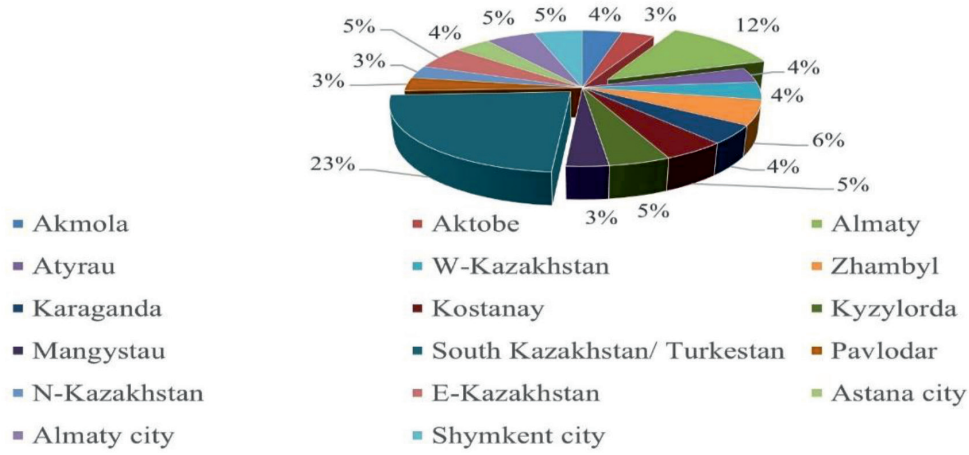
To find relevant scientific papers, we searched popular scientific platforms (Science Direct, Research Gate, Scopus, Pubmed) using the following keywords: suicides, completed suicides, suicide attempts, child population, suicide statistics, and suicidal behavior.

Discussion

We were interested in the suicide rate in the regions of the country as a whole, and we conducted a comparative analysis of the number of committed suicides over the period from 2017 to 2024 in order to get a general idea of the distribution of cases by regions and to determine in which areas the suicide rate among minors is the highest, which may be useful for targeted preventive measures.

According to Picture 1, the highest percentage of cases was recorded in the Turkestan region (former South-Kazakhstan region) – 23 % over the research period. The next regions by the number of suicides are the Akmola and Almaty regions, which account for 12 % and 6 %, respectively. Smaller percentages of cases are observed in Atyrau, Zhambyl, Kostanay, Mangystau, and other regions, where values range from 3 % to 5 %. The cities of Astana (Nur-Sultan) and Shymkent also appear in the chart, with shares of 4 % and 6 %, respectively, indicating relatively low but sig- nificant suicide rates among minors in large cities.

Almost all researchers in the field of suicidology have observed that not all cases of suicides and suicide attempts are included in the statistical data. Often, they fall under the headings of acci- dents, household injuries, accidental poisoning, etc. The availability of professionals, child psy- chiatrists, child psychologists, psychologists, and psychotherapists, and their accessibility to the child population of a particular region are also critical. Another important factor is the existence of an effi- cient system of suicide prevention and accessibility thereof by minors in each region.



Picture 1. Comparative analysis (%) of suicides committed by minors in Kazakhstan, 2017-2024

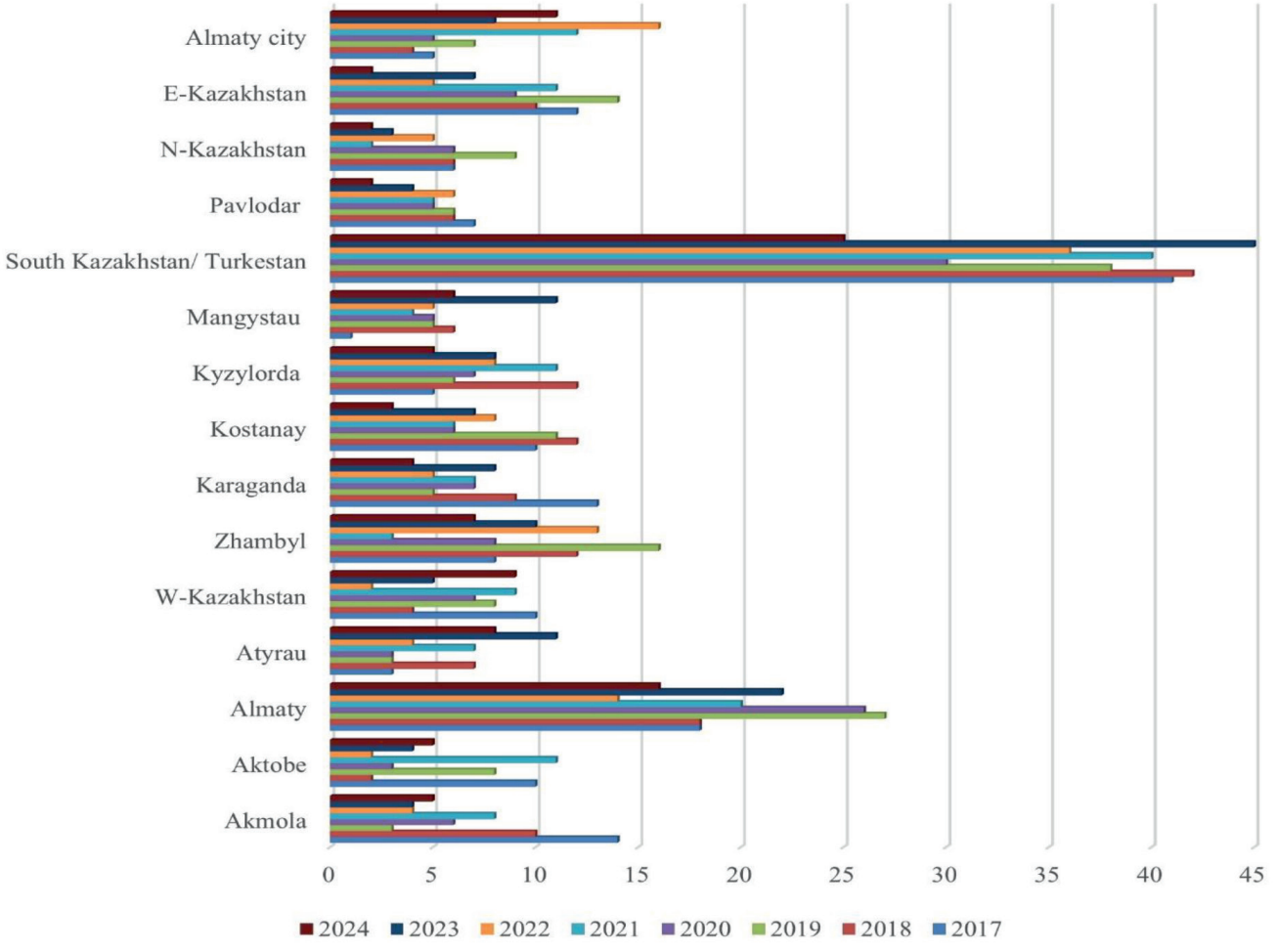
Source: compiled by the authors

The identified regional differences give reason for close attention to these regions to create targeted prevention programs and for a thorough and complete study of the mechanisms of formation and content of statistical data. There is no record of the number of suicide attempts in each case, so suicide attempts of one person can be calculated as attempts of several people, which significantly affects the statistical indicators.

Data on the number of suicides among minors show that the Turkestan region (former South-Kazakhstan region) has been consistently leading in the number of suicides among minors for all years. A particularly high rate was observed in 2023. Almaty region also shows high rates, ranking second in suicide rates, with a peak in 2021. Regions such as Atyrau, Kostanay, and Akmola show lower rates, with rates remaining consistently low throughout

the period. The cities of Almaty and Astana (Nur-Sultan) also record relatively low suicide rates, with some increases in recent years in Almaty, as detailed in Picture 2.

In developed countries, suicide mortality in young people (15-29 years) ranks second after road traffic accidents, and in the USA it ranks 10th [5]. After suicide attempts, young people die in 5-10 % of cases [6]. There can be no unambiguous answer to the difference in the distribution of the frequency of suicides and suicide attempts in different countries among young people, as there is no single unified gradation and clear criteria for counting all options of suicidal behavior for statistical data in certain age groups. For example, «youth» in Europe can refer to 14-16-year-olds and older. In Kazakhstan, minors are children below 18, as follows from the Code of the Republic of Kazakhstan «On Marriage (Matrimony) and Family» of December 26, 2011, No. 518-IV, par. 8.

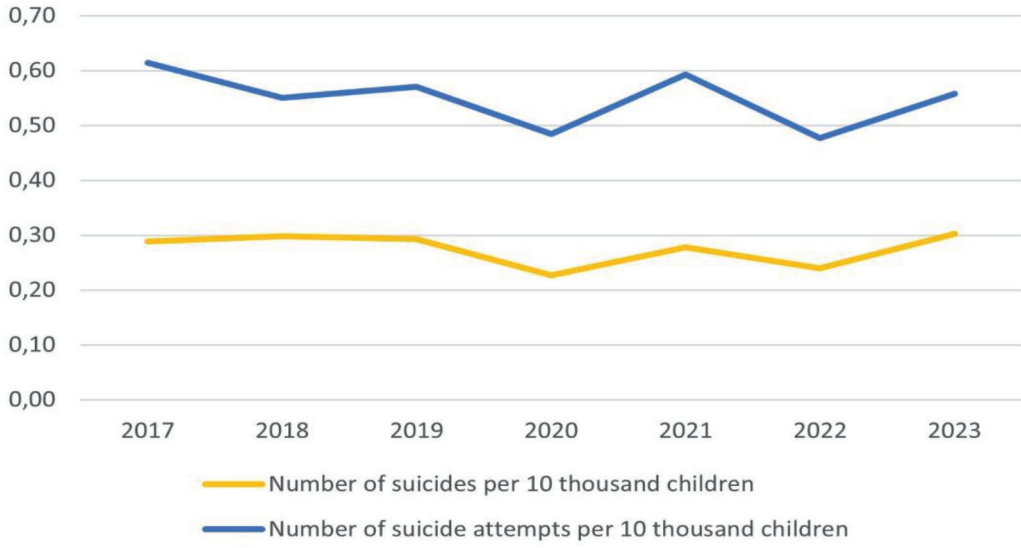


Picture 2. Number of suicides committed by minors by regions of Kazakhstan, 2017-2024
Source: compiled by the authors

The number of completed suicides and suicide attempts among minors for the period from 2017 to 2024 provides a clear indication of the overall dynamics and emphasizes the need for further analysis of the reasons for the increase in suicide attempts, especially in recent years. A total of 2,389 suicide cases occurred in Kazakhstan in the first eight months of 2024. In 128 cases, suicides were committed by children between 5 and 18 years of age (Picture 3). In general, most regions show fluctuations by year, but in Turkestan and Almaty regions, the suicide rate among minors is consistently higher, which requires special attention to these regions.

The insignificant excess of suicide attempts over completed suicides is noteworthy, although they are much more numerous, and this proves the tendency to conceal or not reveal at-

tempted murders, while incomplete suicides are dangerous because they may be attempted again within the next 24 hours. Also, completed suicides are often concealed and recorded as accidents in a fall, accidental poisoning, etc. As one can see in the diagram, the frequency of suicides and attempts on life varies within the same region - apparently, the tendency to conceal or not reveal attempts on life among minors also plays a role here (Picture 3).



Picture 3. Completed suicides and suicide attempts among the child population (per 10,000 children), 2017-2023
Source: compiled by the authors

Nevertheless, it is necessary to take into account the fact that the «suicidal behavior» term (unites all manifestations of suicidal activity - thoughts, intentions, statements, threats, attempts, completed suicides) is a stage and dynamic process or a rapidly developing process, in which suicidal activity progresses from initial, little-conscious internal forms to the practical realization of suicidal actions and takes quite a long period measured not by one month, sometimes by years, maybe minutes, hours, and as for childhood the dynamics of suicidal behavior development requires thorough research.

Data analysis (Picture 1,2,3) showed that:

- Suicide attempts are significantly higher than actual suicide cases throughout the whole research period;

- The highest number of attempts was in 2023, with 376 cases, showing an increase from previous years;

- The number of actual suicides among minors fluctuates, with the highest rates in 2023 (204 cases) and 2021 (175 cases).

- the lowest number of suicides and attempts were observed in 2020 (144 suicides and 307 attempts), which could be related to the constraints and changes caused by the Covid epidemic.

However, several studies, on the contrary, indicate an increase in suicide attempts during the pandemic [7; 8].

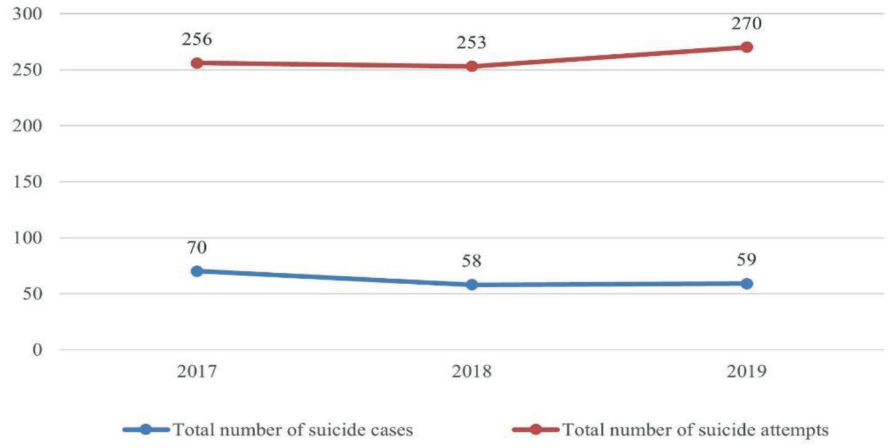
We conducted a comparative analysis of completed suicide attempts and acts between 2017 and 2019 among males and females (Picture 4 and Picture 5).

Many researchers have noted a tendency to the prevalence of the frequency of completed suicides in males as opposed to females, where more suicide attempts are observed [9]. Statistical data processing has shown that this tendency is also inherent in the minors of our country. Judging by the graphs and analysis data, suicide attempts are most common among female minors, while the facts of completed suicide are more common among male minors.

Comparative analysis of data on suicides among minors

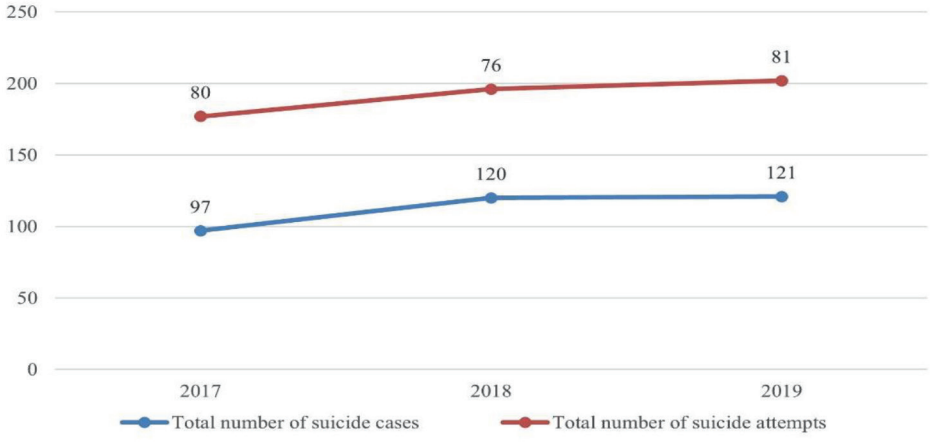
Data on suicidal activity among female minors show the following tendencies (Picture 4):

- suicide attempts (orange line) remain at a consistently high level. There were 256 attempts in 2017, 253



Picture 4. Comparative analysis of data on suicides among females under 18 in Kazakhstan, 2017-2019

Source: compiled by the authors



Picture 5. Comparative analysis of data on suicides among males under 18 in Kazakhstan, 2017-2019

Source: compiled by the authors

- in 2018, and the number increased to 270 in 2019;

- completed suicides (blue line), on the contrary, show a downward tendency. While 70 cases were recorded in 2017, 58 in 2018, and 59 in 2019.

Thus, despite the high number of suicide attempts, the number of completed cases remains relatively low and shows a slight decrease between 2018 and 2019.

Comparative analysis of data on suicidal activity among male minors revealed the following features (Picture 5):

- suicide attempts (orange line) remain relatively stable but with a slight increase: 76 cases in 2018 and 81 cases in 2019.

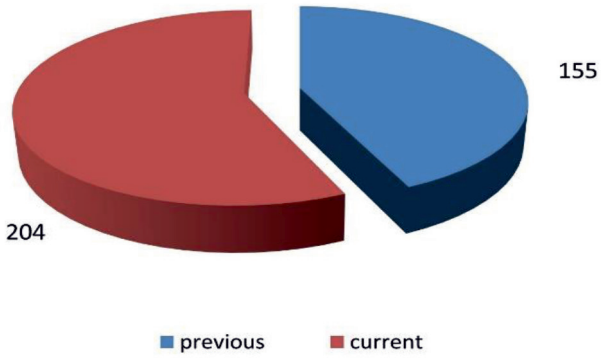
- completed suicides (blue line) show a pronounced upward tendency. There were 97 cases in 2017, 120 in 2018 and 121 in 2019.

Thus, compared to female minors, there is a marked increase in completed suicides among boys.

For males, there is an increase in both actual cases and suicide attempts over time, indicating an increased risk level among minor boys.

According to research data, South Korea is known to stand out among countries with high suicide rates over 1990-2020 (10.4 per 100,000 males and 10.3 per 100,000 females in 2020), with female suicide rates nearly equal to those of males, this rarity at the global level is noted by the authors of the article [1]. Another study examined a series of consecutive suicide deaths in the UK among 10-19-year-olds over three years. For example, between 2014 and 2016, there were 595 suicides among young people, almost 200 per year, and 71% (n = 425) of these were males [9].

The number of suicides per 10 thousand children under 18 years of age in the Republic of Kazakhstan shows that suicides among children are not decreasing and remain almost at the same level for the period subjected to processing and analysis. It can also be seen that in 2023, suicides and attempted suicides among children tend to increase. A comparative analysis of the data on committed suicides according to the data of 2023 in comparison with the previous year, 2022, was carried out (Picture 6).



Picture 6. Information on suicides committed by minors in the Republic of Kazakhstan in 2023
Source: compiled by the authors

Data on completed suicides among minors in the Republic of Kazakhstan in 2023 show a statistically significant increase compared to the previous period. The difference between the two time points is 49 cases (204 in 2023 vs. 155 in the previous period), representing an increase of 31.6 %. This indicator shows a marked dynamic of deterioration of the situation, which requires additional research and the implementation of efficient preventive measures.

Gender analysis of completed suicides over 2022 and 2023:

Based on the comparative data (Picture 7), the following key changes stand out:

- in 2023, the number of completed suicides among men increased by 56 cases (from 2,872 to 2,928), which corresponds to an increase of 1.95 %. This increase may indicate emotional instability in the male group.

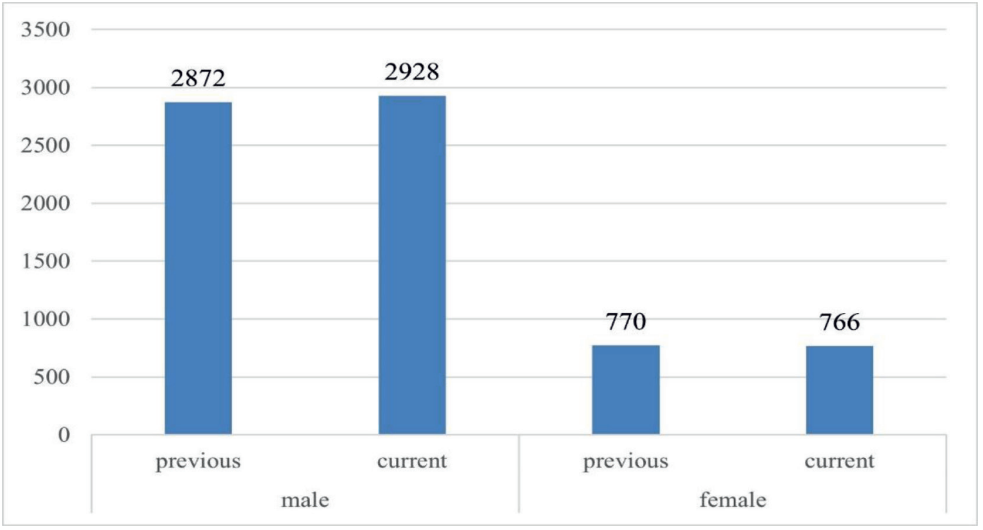
- In the group of women, there is a slight decrease in the number of completed suicides by 4 cases (from 770 to 766), which is 0.52 %. These data may indicate a possible stabilization of the situation among female minors.

Comparative analysis of gender data over the two periods shows that the main contribution to the increase in the total number of completed suicides in 2023 was made by men, while among women, the situation remained almost unchanged.

Such a distribution requires the development of more specific prevention programs aimed at the male population, as well as a thorough analysis of the risk factors contributing to the increase in suicidal tendencies.

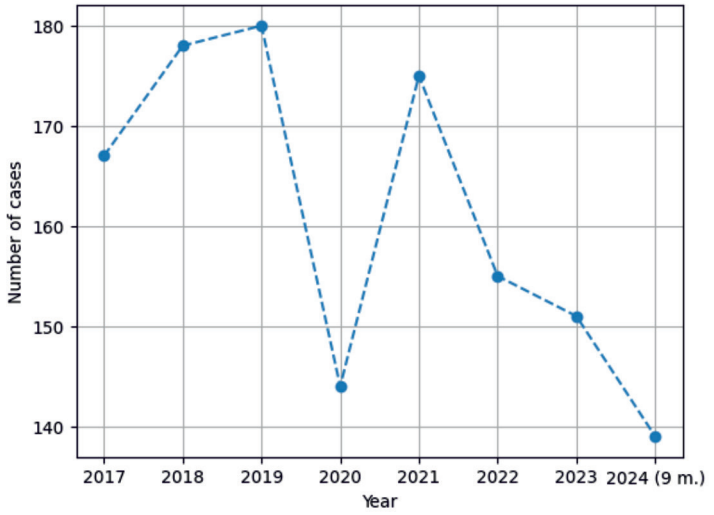
Machine learning models are being applied in many countries to provide the most efficient prevention interventions. Active deployment of artificial intelligence (AI) techniques has enabled scientists to develop gender-specific machine learning models to predict suicide risk. For example, researchers Harrath et al. used data from the Quebec-based Integrated Chronic Disease Surveillance System for Patients, which included more than 20,000 suicide cases from 2002 to 2019, for this purpose. The study demonstrated the potential of explainable AI in improving suicide prevention efforts, while at the same time, the authors emphasized the need for caution when interpreting prognostic associations [10; 11].

Our attention was drawn by the curve (Picture 8), which shows the dynamics of registered cases of completed suicides from 2017 to the 9 months of 2024. The number of suicides peaked in 2019 and fell sharply by 2020. However, the value rose again a year later and started falling again. However, one must remember that in 2024, only 9 months of data were included. These indicators require analysis and prediction of their possible decline or rise: what influenced these indicators? Perhaps in the years of the so-called «peaks,» there were active measures to identify suicidal ideation



Picture 7. Data on completed suicides in the Republic of Kazakhstan in 2023.
Source: compiled by the authors

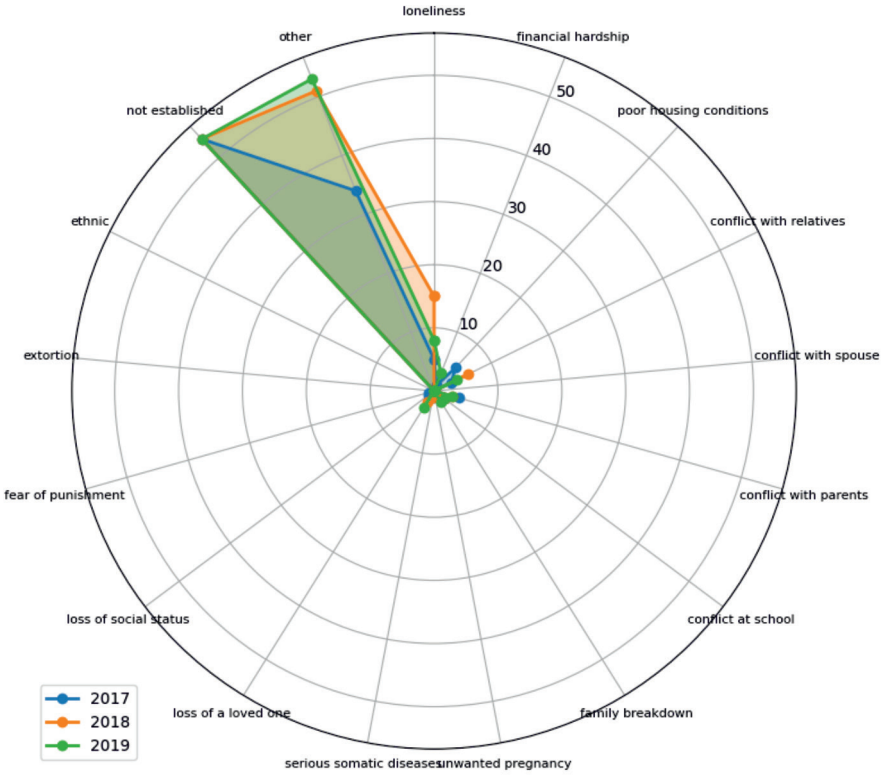
among children, there was active work to organize assistance to children in this category, or, on the contrary, the active coverage of committed suicide cases and dissemination of the topic of suicide in the mass media provoked the so-called «Werther effect»?



Picture 8. Dynamics of suicide instances, 2017 till Sept. 2024
Source: compiled by the authors

The study of statistical data for 2017-2019 allowed us to analyze the frequency of factors that preceded the committed suicides among minors (Picture 9). From the data obtained, we can see that over the studied period, the cause of suicides was not determined for a larger number of suicides. The cause of suicide in most cases is listed in the «Other» category. One can also notice that in 2018, loneliness had a relatively high weight for the decision to commit suicide in children. For the other factors listed, all years have a relatively similar low weight. From these data, it follows that an integrated system of registration of all facts accompanying suicidal behavior is required, including the number of suicide attempts, so based on the analysis of such a system, it will be possible to develop a system of suicide prevention among minors.

Several risk signs, including self-harm, expression of suicidal thoughts, and recent contact of health care services, usually precede suicide in young people. It is of interest whether there is a group of young people who die by suicide without overt warning signs and whether they indicate the risk indirectly through other suicide risk factors.



Picture 9. Factors preceding suicides among minors (under 18 years of age) in 2017, 2018, 2019
Source: compiled by the authors

One study showed that the suicide group also had low rates of other risk factors for suicide, including psychoactive substance abuse, diagnosis of mental health problems, recent adverse life events, and contact with services. Several authors also noted a small amount of data pointing to an impending suicide attempt. Also, families and other witnesses may have underreported warning signs that went unheeded. The authors conclude that suicide after minimal warning appears to be relatively common among young people because of the rapid development of ideas in this age group; therefore, crisis services should be widely available. Future prevention cannot rely on explicit expression of risk. Hence, there should be clear information about the dynamics of developing suicidal behavior for timely early diagnosis of an impending attempt on life [12; 13].

In a study conducted in South Korea, the distribution of mental and social factors was as follows - mental disorder 19.1% of adolescents; parental divorce or family breakup – 23.7 %, deviant behavior (smoking, alcohol use) – 12.7 %, previous suicide attempts – 5.8 %, depression – 26.6 %, anxiety disorder – 11.6 % [14].

The lack of information on the presence of persons with mental illness in the statistical data available to us significantly complicates the analysis of the prevalence of suicidal ideation among persons with mental disorders and diseases, analysis of the availability of psychiatric care, assessment of the quality of medical facility observation, supportive therapy (availability of psychopharmacotherapy), family relationships and family composition and understanding of what is primary: depressive disorder with congruent suicidal behavior or suicidal behavior develops as an independent disorder with its own dynamics and specific set of symptoms.

In terms of the methods of attempted suicide themselves, the data vary from country to country. To characterize tendencies in suicide methods among persons in this age group, the CDC analyzed data on persons living in the United States between 1992 and 2001. In 2001, suicide was the third leading cause of death among persons aged 10-19. The most common method of suicide in this age group was firearms (49 %), followed by strangulation (mostly hanging, 38 %)

and poisoning (7 %). During 1992-2001, although the overall suicide rate among 10-19-year-olds decreased from 6.2 to 4.6 per 100,000 individuals, the methods of suicide changed significantly with a decrease in suicide by firearm and an increase in suicide by strangulation among 10-14 and 15-19-year-olds.

Since 1997, among 10-14-year-olds, strangulation has surpassed firearms as the most common method of suicide. The decline in suicide by firearm combined with the increase in suicide by strangulation suggests that there has been a shift in suicidal behavior among youth over the previous decade. But starting in 2022, easier access to guns was associated with an increase in suicides, as the number of firearm suicides in the U.S. reached a record high of nearly 27,000 persons in 2022, up 1.6 % and surpassing the historical maximum value. The rate among black youth was higher than white youth for the first time. For the fifth year in a row, firearms were the leading cause of death in children and teens in the United States. Over the past decade, the rate of firearm-related deaths among this age group increased by 87 % (from 3.13 to 5.84 deaths per 100,000 people) [5].

Evidence on how people choose different methods of suicide suggests that some people who do not have access to highly lethal methods may choose not to commit a suicidal act or, if they do commit suicidal behavior, are more likely to survive their injuries [15]. However, some subgroups of suicidal individuals may replace them with other methods [16]. For example, jumping from heights is also considered a method, especially among girls, and is common in densely populated cities. In Asian countries like South Korea and Hong Kong, jumping from heights is a common method due to high urbanization and high-rise buildings, as well as certain cultural aspects of the perception of the method. The availability of, e.g., pesticide oil (for self-immolation) – the latter is not common among the child population – also plays a significant role.

Among the main methods of suicide from 2010 to 2016 among adolescents aged 10-19 years (WHO-based studies from around the world), hanging was indicated as the most common method among adolescents in all countries; jumping from heights and onto rails (in countries with a developed railroad network) as the second most common method; and «firearms» for countries with high availability of weapons such as the United States and Switzerland. The authors analyzed clusters of countries and identified four clusters of suicide methods, each of which is characterized by the prevalence of certain methods [13].

Cluster 1. Countries where hanging is the primary method. This cluster includes many Eastern European countries, some British Commonwealth countries, and Latin American countries. Cluster 2. Countries that utilize different methods, including hanging, pesticide poisoning, and jumping from heights. This included European, South American, and some Asian countries. Cluster 3. Countries, where jumping from heights prevails (Hong Kong, South Korea). This method is particularly common among girls. Cluster 4. Countries where pesticide poisoning is the main method are Latin American countries and some Asian countries such as Sri Lanka.

The authors also note that restricting physical access «to dangerous agents» such as firearms, pesticides, and certain medical drugs can effectively reduce the rate of youth suicide. Researchers from Switzerland (225 boys and 107 girls) also point to the highest proportion of firearm use in boys - (26.1 %), hanging (25.2 %), railroad suicides (20.8 %), and jumping from heights (19.5 %). In girls, railroad suicides (31.8 %), jumping from height (23.4 %), hanging (18.7 %), and poisoning (16.8 %) predominate.

Researchers from Korea showed by analyzing suicides among adolescents in South Korea (based on 173 reports for 2018 and 2019) that the prevailing methods of suicide were jumping (71.1 %), hanging (24.9 %), and gas poisoning (2.3%). Interesting is the analysis of the psychological type of suiciders (according to the results of cluster analysis): those of the «quiet» type (48.6 %) had no expressed risk factors; those who are at risk due to their environment (24.28 %) often come from dysfunctional families and exhibit deviant behavior; the «depressive» type (27.17 %) has high frequency of depression, mental disorders, and previous suicide attempts. Since means of strangulation (e.g., hanging) are widely available, the increasing use of strangulation as a method of suicide among 10-19-year-olds implies that the acceptability of suicide by strangulation has increased significantly in this age group [14].

A careful study of each type of suicide attempt and completed suicide is required, especially in terms of differentiating parasuicidal acts as a reaction to the inability to regulate or more effectively express their emotions, without the intention to die or as a tribute to adolescent «fashion,» or as a stage of transition to the active phase of suicidal behavior. The substitution of methods depends on the availability of alternatives and the acceptability thereof. Suiciders use the means most accessible to them to make an attempt on their lives, and self-inflicted cuts provide an opportunity to stop self-aggression in case of fear, pain, or refusal to attempt life.

The obtained findings highlight areas for prevention, such as limiting access to potentially dangerous substances and increasing support for people with signs of self-harm of any origin.

The study of statistical data in special literature points to socio-economic factors and cultural peculiarities as a risk of suicidal behavior. In countries with a high index of income inequality (calculated Gini coefficient is a statistical indicator of the degree of stratification of the society of a given country or region by any studied characteristic; it is used to assess economic inequality), there is an increase in the suicide rate among boys compared to girls. This is attributed to social pressure, especially on young men, who are often the main breadwinners in the family. Interestingly, the overall economic level of a country (GDP per capita) is not directly related to suicide rates, but adolescents from low- and middle-income countries face higher levels of social pressure and fewer resources for psychological help [17]. We did not find such data in the statistical database available to us.

Conclusion

Up to now, no clinical-psychopathological and pathopsychological analysis (structure of suicide, dynamics of suicidal behavior, number of suicide attempts, development of the so-called «portrait of a suicide» etc.) of susceptibility to suicidal ideation and destructive behavior among the child population has been conducted in Kazakhstan.

An increase in suicide attempts is quite possible because there is no record of repeated suicide attempts specifically for each of the suiciders.

Analysis of available statistical data has shown the need to create an integrated database with indicators that maximally reflect the complex biopsychosocial problems of auto-aggressive destructive behavior among minors. It is necessary to develop and implement an integrated database that reflects all aspects of suicidal ideation in the child population with mental disorders and illnesses.

The development and implementation of an integrated database reflecting all aspects of suicidal ideation among the child population will enable a timely response to the suicide situation.

Development and implementation of an integrated database reflecting all aspects of suicidal ideation among the child population will make it possible to plan the training of specialists in child psychiatry and child medical psychology, development and availability of such areas as crisis psychotherapy for children, child medical psychology with a comprehensive system of psychological rehabilitation.

Use of developed algorithms and models based on machine learning can be used to create tools that allow specialists working in the field of children's mental health to conduct more accurate and rapid diagnoses of suicidal tendencies in children, effectively develop algorithms for prevention programs and interventions that take into account individual and regional peculiarities.

Intervention strategies should be developed, including programs integrating monitoring systems, epidemiological studies, and comprehensive prevention activities.

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ОБЗОР СТАТИСТИЧЕСКИХ ДАННЫХ ПО СИТУАЦИИ С СУИЦИДАМИ У ДЕТСКОГО НАСЕЛЕНИЯ РЕСПУБЛИКИ КАЗАХСТАН В СРАВНИТЕЛЬНОМ АСПЕКТЕ

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Аннотация

Самоубийство является важнейшей проблемой общественного здравоохранения с далеко идущими социальными последствиями. Оно вызывает глубокие эмоциональные переживания у семей, значительные экономические потери из-за снижения производительности труда и растущие расходы на здравоохранение. Несмотря на свою серьезность, проблема самоубийств остается недостаточно решенной во многих регионах, а такие ключевые показатели, как годы утраченной трудовой деятельности, часто не учитываются.

Цель исследования. Изучить распространенность самоубийств и попыток самоубийства среди несовершеннолетних по данным статистической отчетности, доступной для исследования.

Методы и материалы. Объектом исследования является детское население Республики Казахстан (возраст: до 18 лет), подверженное суицидальному поведению (самоубийства и попытки самоубийства). Данные для исследования: использованы статистические данные Официального сайта Комитета по правовой статистике и специальным учетам Генеральной прокуратуры Республики Казахстан «Сведения об уголовных правонарушениях, лицах, совершивших их, о работе органов уголовного преследования и совершивших самоубийства» за период с 2017 по 2024 год.

Результаты. Анализ имеющихся статистических данных показал необходимость создания интегрированной базы данных с показателями, максимально отражающими комплекс биопсихосоциальных проблем аутоагрессивного деструктивного поведения несовершеннолетних. Необходимо разработать и внедрить интегрированную базу данных, отражающую все аспекты суицидальных мыслей у детской популяции с психическими расстройствами и заболеваниями.

Обсуждение. Разработка и внедрение интегрированной базы данных позволит планировать подготовку специалистов по детской психиатрии и детской медицинской психологии.

Выводы. Использование разработанных алгоритмов и моделей на основе машинного обучения может быть использовано для создания инструментов, позволяющих специалистам, работающим в сфере детского психического здоровья, проводить более точную и быструю диагностику суицидальных тенденций у детей, эффективно разрабатывать алгоритмы профилактических программ и вмешательств, учитывающих индивидуальные и региональные особенности.

Ключевые слова: *самоубийства, завершенные самоубийства, попытки самоубийств, детское население, статистика самоубийств, суицидальное поведение.*

САЛЫСТЫРМАЛЫ АСПЕКТІДЕ ҚАЗАҚСТАН РЕСПУБЛИКАСЫНЫҢ БАЛАЛАРЫ АРАСЫНДАҒЫ СУИЦИД ЖАҒДАЙЫ ТУРАЛЫ СТАТИСТИКАЛЫҚ МӘЛІМЕТТЕРГЕ ШОЛУ

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Аңдатпа

Өз-өзіне қол жұмсау - бұл үлкен әлеуметтік салдары бар денсаулық сақтаудың негізгі проблемасы. Бұл отбасылар үшін терең эмоционалды күйзелістерге, өнімділіктің төмендеуіне және денсаулық сақтау шығындарының өсуіне байланысты айтарлықтай экономикалық шығындарға әкеледі. Өзінің маңыздылығына қарамастан, көптеген аймақтарда суицид проблемасы әлі де шешілмейді, және жұмыссыз қалған жылдар сияқты негізгі көрсеткіштер жиі анықталмайды.

Зерттеудің мақсаты. Зерттеу үшін қолжетімді статистикалық есеп деректері негізінде кәмелетке толмағандар арасындағы суицид пен өзіне қол жұмсау әрекеттерінің таралуын зерттеу.

Әдістемелер мен материалдар. Зерттеу объектісі – суицидтік мінез-құлыққа бейім (суицид және суицид әрекеттері) Қазақстан Республикасының балалары (жас: 18 жасқа дейін). Зерттеуге арналған деректер: Қазақстан Республикасы Бас прокуратурасы Құқықтық статистика және арнайы есепке алу жөніндегі комитетінің «Қылмыстық құқық бұзушылықтар, оларды жасаған адамдар, қылмыстық қудалау органдарының жұмысы және өз-өзіне қол жұмсау әрекеттері туралы мәліметтер» ресми сайтының 2017 жылдан бастап 2020 жылға дейінгі кезеңдегі статистикалық деректері пайда-ланылды.

Нәтижелер. Қолда бар статистикалық деректерді талдау кәмелетке толмағандардың аутоагрессивті деструктивті мінез-құлқының биопсихоәлеуметтік мәселелерінің кешенін жақсы көрсететін көрсеткіштермен біріктірілген мәліметтер базасын құру қажеттілігін көрсетті. Психикалық бұзылыстары мен аурулары бар балалардағы суицидтік ойлардың барлық аспектілерін көрсететін интеграцияланған мәліметтер базасын әзірлеу және енгізу қажет.

Талқылау. Біріктірілген деректер базасын әзірлеу және енгізу балалар психиатриясы және ба-лалар медициналық психологиясы бойынша мамандарды даярлауды жоспарлауға мүмкіндік береді.

Қорытынды. Машиналық оқытуға негізделген әзірленген алгоритмдер мен модельдерді пай-далану балалардың психикалық денсаулығы саласында жұмыс істейтін мамандарға балалардың суицидтік тенденцияларының дәлірек және жылдам диагностикасын жүргізуге, жеке және аймақтық ерекшеліктерді ескеретін профилактикалық бағдарламалар мен араласу алгоритмдерін тиімді әзірлеуге мүмкіндік беретін құралдарды жасау үшін пайдаланылуы мүмкін.

Түйін сөздер: *суицид, аяқталған суицид, суицид әрекеттері, балалар саны, суицид статистикасы, суицидтік мінез-құлық.*

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