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Section 1. Education system

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THE MAIN HEALTHCARE PROBLEMS OF THE REPUBLIC OF KAZAKHSTAN

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Abstract

This article examines key issues facing the healthcare system in the Republic of Kazakhstan, including access to medical care, staffing, digitalization, the development of high-tech medicine, and maternal and child health. Particular attention is paid to the impact of noncommunicable diseases and lifestyle factors on population health. Based on statistical data analysis, systemic limitations are identified and areas for improving public healthcare policy are proposed.

Keywords: *healthcare in the Republic of Kazakhstan, primary health care, digitalization, medical workforce, reproductive health, noncommunicable diseases, telemedicine*

Introduction

The healthcare system of the Republic of Kazakhstan is undergoing active modernization, aimed at improving the accessibility and quality of medical services. State policy in this area is aimed at ensuring sustainable development, improving public health indicators, and increasing life expectancy.

Relevance of the Study

The relevance of the study stems from the need for a comprehensive analysis of healthcare issues in the context of demographic growth, increasing burden on the healthcare system, and the spread of noncommunicable diseases. The COVID-19 pandemic has exposed the system's vulnerabilities, including insufficient digitalization, staff shortages, and infrastructural limitations, particularly in rural areas.

Purpose of the Study

The purpose of the study is to identify key issues in the healthcare system of the Republic of Kazakhstan and analyze areas for improvement at the current stage.

Research Materials and Methods

The study utilized methods of analyzing regulatory documents, statistical data from the Ministry of Health of the Republic of Kazakhstan and the World Health Organization, as well as comparative and systemic analysis. The empirical base was formed by

official reports, government programs, and scientific publications.

Kazakhstan is a WHO member country, associated with the development of primary health care worldwide. In 2018, the WHO Global Conference on Primary Health Care was held in Astana, marking the 40th anniversary of the 1978 WHO Declaration of Alma-Ata, which adopted the Astana Declaration on Primary Health Care, which will serve as the basis for the development of primary health care worldwide in the 21st century.

Overall, the fight against the coronavirus pandemic has required the diversion of significant human and material resources from routine medical services and has emphasized **the need to transition to remote medical services, especially in remote areas.** Thus, in order to provide timely medical care to patients with COVID-19 at the primary health care level, 3,054 mobile teams (providing 2.9 million services) were organized in all primary health care organizations in 2021 to monitor patients with COVID-19, including patients with risk factors (hypertension, diabetes, coronary heart disease, COPD, asthma, and others) and pneumonia.

In this regard, **remote medical services** are being actively implemented in the country to improve access to medical care. Legislative regulation of the use of remote medical services has been completed. However, the lack of medical facilities and underdeveloped infrastructure at the district healthcare center level, as well as the use of outdated computer equipment in remote rural healthcare facilities, limit internet access and the possibility of using remote medical services.

Thus, the main problems in providing primary health care are:

- Insufficient access to and quality of medical care and service, especially in remote communities, due to understaffing, an insufficient number of primary health care facilities, including deteriorating buildings, and insufficient medical equipment;
- Low internet access in remote rural areas and a lack of modern computer equipment;
- Heavy workload on the GP (General Practitioner) site;
- Demand for healthcare workers (GPs, nurses, and healthcare psychologists);
- Poor digitalization of primary health care and limited internet access in rural facilities; and an insufficient range of remote medical services.

Kazakhstan is among the top 30 countries in terms of cardiac surgery development. Our country ensures access to 80 types of high-tech medical care (HTMC). In 2021, more than 18,000 HTMC services were provided.

Regional offices are functioning for patients with chronic heart failure, 453 beds have been created, and a registry for patients with chronic heart failure (CHF) is being implemented. Despite significant progress in medical and surgical treatment, the prognosis for patients with CHF remains unfavorable. The primary treatment for patients with terminal heart failure is heart transplantation.

However, the number of necessary donor organs is critically short, even in countries with high transplant activity. The main alternative to transplantation may be the use of ventricular assist devices (LVADs). Since the launch of the LVAD clinical program, approximately 500 mechanical cardiac support devices have been implanted in the country. The high survival rate of patients after LVAD implantation and heart transplantation in Kazakhstan is comparable to data in the United States and Europe (Healthy Nation: 2026).

An achievement of domestic cardiac surgery is the transplantation of a donor heart to a patient with CHF (chronic heart failure), first performed in 2012 at the National Scientific Cardiac Surgery Center. Since then, 86 heart transplants have been performed.

In 2016, the first unique lung transplant was successfully performed. Lung transplantation is currently the only curative treatment for certain chronic lung diseases. As of 2021, 16 lung transplants have been performed.

The global burden of chronic kidney disease (CKD) is rapidly increasing. By 2040, CKD is projected to be the fifth most common cause of reduced life

expectancy worldwide. Furthermore, CKD causes catastrophic healthcare costs; dialysis **and transplantation costs account for 2–3% of the annual healthcare budget.**

Renal replacement therapy, as an outcome of CKD, is a complex, lifelong medical and social service that helps reduce mortality and maintain a socially adapted life expectancy.

In the Republic of Kazakhstan, there are over 8,000 patients on hemodialysis, including 2,500 kidney transplant recipients. This necessitates the creation of a registry for the timely detection of CKD, the development of programs to monitor the rate of progression of renal failure, the planning of medication management, the implementation of quality indicators for assessing dialysis procedures, the adequacy and appropriateness of treatment for CKD complications, the planned preparation and selection of hemodialysis/peritoneal dialysis modalities, and the monitoring of kidney graft survival.

Due to the stagnation of transplant services in 2018–2019 and the COVID-19 pandemic in 2020–2021, a significant decline in transplants has been observed. The main reason for this decline is the shortage of donor organs, which is associated with a decline in the number of identified deceased donors. As demonstrated by the experience of countries leading organ donation, the driving force behind deceased donation is a well-developed network of professionally trained transplant coordinators (in Spain, there are 13 transplant coordinators and 48 effective deceased donors per million people). In 2021, there were 3,374 patients (including 97 children) on the organ transplant registry (waiting list), including 3,045 kidney transplant recipients (including 80 children), 161 liver transplant recipients (including 9 children), 150 heart transplant recipients (including 6 children), and 18 lung and cardiopulmonary complex transplant recipients (including 2 children).

The National Neurosurgery Center is a leader in Central Asia for the treatment of neurosurgical diseases. More than 70 new technologies, previously unused in Central Asia, have been pioneered in Kazakhstan, as well as fundamentally new areas of neurosurgery, including microneurosurgery, endovascular, endoscopic, and functional neurosurgery.

Neurosurgeons in Kazakhstan were among the first in the CIS to introduce and perform unique surgeries for pregnant women with pathologies of the brain and spinal cord. We perform spinal cord neurostimulation, stereotactic brain biopsy, surgery for Parkinson's disease, endovascular treatment of aneurysms and arteriovenous malformations, endoscopic treatments for neurosurgical pathologies, microsurgery using a neuronavigation system and fluorescence navigation, brain surgery with preserved consciousness, and modern surgical methods for the treatment of epilepsy, among other things.

In 2021, we launched a state-of-the-art stereotactic radiosurgery system – the Gamma Knife, the only one in Central Asia. The Gamma Knife radiosurgical system is used for the safe, non-invasive treatment of tumors, vascular, and functional diseases of the brain and is the "gold standard" of radiosurgical treatment. More than 400 Gamma Knife surgeries have been performed.

By the end of 2021, the number of people with drug dependence undergoing dynamic monitoring was 18,692, of which 7,062 were opioid dependent, representing 37.7%. Opioid agonist maintenance therapy (OAT) is being implemented in the Republic of Kazakhstan. Its main goals are to reduce or stop non-medical opioid use and the associated risks. This program is supported by the Global Fund to Fight AIDS, Tuberculosis, and Malaria, and more than one-third of participants have successfully completed it.

Consistent efforts are being made to prevent the spread of the HIV epidemic, which is at a concentrated stage (0.2%). An average of 3.5 million tests are conducted annually within the framework of the guaranteed volume of free medical care, or approximately 16% of the population is screened. The service has an approved three-component comprehensive tariff, which includes recommendations for clinical protocols. Further work is required to allocate budgetary funds to implement all recommendations for the management of patients from the group of

people living with HIV infection, key populations, and population testing for HIV.

The main problems in providing specialized medical care are:

- weak transfer of innovative technologies and high-tech medical services in the regions;
- high incidence of tuberculosis compared to OECD countries;
- poor development of the network of transplant coordinators and the necessary equipment for determining brain death, as well as donor organizations;
- shortage of donor organs;
- poor development of regional mental health centers and medical and social rehabilitation units;
- unsatisfactory material and technical infrastructure, including insufficient equipment at national and regional mental health centers and pathology services;
- poor development of intensive pulmonology and pulmonary rehabilitation, fragmentation of various types of treatment and diagnostic care for patients with respiratory diseases;
- poor quality of laboratory services, shortage of laboratory equipment;
- insufficient coverage and provision of medical rehabilitation care for adults who have recovered from COVID-19;
- a shortage of qualified personnel for multidisciplinary medical rehabilitation teams;
- a lack of a methodological framework for providing rehabilitation care.

The main problems in maternal and child health are:

- insufficient integration of primary health care, maternity hospitals, and specialized hospitals;
- the influence of behavioral and external factors on the reproductive health of the population;
- the poor material and technical condition of maternity facilities, their failure to meet modern requirements, insufficient medical equipment, and understaffing, including with specialized specialists (obstetricians-gynecologists, anesthesiologists-resuscitators, neonatologists) in maternity care organizations;
- lack of a standard for school medicine;
- an increase in disability among the child population;
- insufficient coverage of restorative treatment and medical rehabilitation for children in the regions.

The main problems in ensuring the sanitary and epidemiological well-being of the population are:

- lack of a system for forecasting and preventing biological threats;
- insufficient effectiveness of control and surveillance functions with an underdeveloped system for epidemiological assessment and forecasting potential threats and risks;
- insufficient biosafety of the SES laboratory for conducting modern, high-precision, and rapid research;
- poor material and technical equipment and maintenance of the SES infrastructure;
- lack of a sustainable human resources policy and a high-quality system for training professional personnel (sanitary doctors, epidemiologists, and laboratory workers);
- a weak system for implementing the results of scientific research on the impact of environmental factors on public health in practical healthcare;
- inadequate supervision and control over compliance with state regulatory requirements for industrial hygiene;
- weak digitalization and automation of SES activities.

The main problems in providing healthcare personnel are:

- imbalance of personnel in the healthcare system;
- professional vulnerability of healthcare workers;
- Low motivation of medical personnel, insufficient social support coverage at the local level;
- Insufficient quality of medical personnel training;
- Overburdened primary care physicians due to insufficient involvement of mid-level medical workers in the

provision of preventive, therapeutic, and diagnostic care;
- Migration of human resources.

The main problems of medical science and research are:
- Insufficient development of the biomedical research market;
- The country's unattractiveness for international clinical trials with the participation of foreign sponsors;
- Low level of use of a personalized approach in the diagnosis and treatment of diseases;
- Low commercialization of scientific research results;
- Insufficient funding for medical science.

The main problems of infrastructure development and digitalization of the healthcare system are:
- Deterioration of medical facility buildings;
- Insufficient availability of digital services in medical facilities in remote rural areas;
- Lack of a single industry operator in the field of e-health;
- More than 47 disparate information systems (monolithic, outdated information system architecture).

National Project "High-Quality and Affordable Healthcare for Every Citizen: Healthy Nation" 10/12/2021

The national project consists of four areas and includes nine objectives, 21 indicators, and 72 activities. The funding for the national project is approximately 3.6 trillion tenge.

The national project consists of four areas:
- The first area is focused on improving the accessibility and quality of medical care;
- The second area is designed to create a modern system of epidemiological forecasting and response;
- The third area will facilitate the development of the domestic pharmaceutical industry;
- The fourth area is aimed at increasing the proportion of the population leading a healthy lifestyle and developing mass sports.

National Project "High-Quality and Affordable Healthcare for Every Citizen: Healthy Nation"

Objectives, performance indicators, and implementation activities are outlined for each area.

"Implementation of the first area of the National Project will increase public satisfaction with the quality of medical services to 80%, including in rural areas". "The support and satellite villages will be 100% provided with primary health care, primary healthcare, and consultative and diagnostic services," said A. Tsoi.

Furthermore, there are plans to build and modernize at least 40 healthcare facilities and two research centers, expand outpatient medical care, and provide pregnant women with individual and multidisciplinary prenatal care and children under one year with proactive monitoring and screening. Eight additional children's rehabilitation centers and two early intervention centers will also be opened, tripling the coverage of medical rehabilitation for children with disabilities. To address the physician shortage, the number of educational grants for residency programs in critically needed specialties will be increased to 3,800.

As part of the second area, the Ministry plans to implement scientifically based systems for forecasting and responding to national and global risks, and increase the share of sanitary and epidemiological testing laboratories that meet international biosafety and conformity assessment standards from 61% to 90% (On approval of the Concept for the Development. 2026).

The measures taken in the third area will increase the share of accredited laboratories/centers for compliance with international standards; launch at least 30 new pharmaceutical and medical device manufacturing facilities; and bring the national regulator to WHO benchmarking maturity level 3. Increase the share of domestically produced medicines and medical devices in the local pharmaceutical market to 50%; and increase the share of locally sourced medicines and medical devices purchased through the unified distribution system within the framework of the guaranteed volume of medical care and the compulsory health insurance system to

50%. "Implementation of the fourth area will reduce the prevalence of tobacco smoking among the population to 19%, increase the proportion of citizens leading a healthy lifestyle to 45%, increase the number of citizens involved in physical education and sports to 50%, increase the provision of sports infrastructure per 1,000 people to 53%, and increase the proportion of the population with special needs regularly involved in physical education and sports to 14%," the Minister stated.

As a result of the national project, life expectancy in Kazakhstan is expected to increase to 75 years, and public satisfaction with the quality of medical services is planned to increase to 80%. In terms of economic development, private investment in healthcare is planned to increase to 783 billion tenge, creating approximately 13,000 new jobs, and increasing the share of domestic pharmaceuticals to 50%.

Kazakhstan is among the top 10 countries in the world with the most unhealthy diets

The government of Kazakhstan is currently considering changes to taxes on unhealthy foods, including possible taxes on sugar-sweetened beverages.

Kazakhstan is among the top 10 countries in the world with the most unhealthy diets. According to the latest data from the Ministry of Health of the Republic of Kazakhstan, more than 9 million Kazakhstanis regularly consume energy drinks. And 16.3% of boys and 17% of girls aged 6–9 consume sugar-sweetened beverages daily.

Half of children-52%—drink sugar-sweetened beverages from 1 to 5–6 times a week (On approval of the Concept for the Development. 2026).

Also, according to the Ministry of Health, 14% of Kazakhstani teenagers drink Coca-Cola daily. These beverages are known to be one of the main sources of sugar consumption, yet they provide no additional nutritional value. Excessive consumption of sugar-sweetened beverages, salt, and foods high in trans fats is associated with an increased risk of hypertension, coronary heart disease, obesity, and type 2 diabetes.

Sugar Content in the Most Popular Foods

The World Health Organization provides data on the sugar content of the most popular foods we consume every day. For example, a ready-to-eat cereal contains approximately 4 tablespoons of sugar, while a milk drink contains 7. Furthermore, one sugar-sweetened beverage contains more than 20 teaspoons of sugar.

The Ministry of Health reports that the incidence of type 2 diabetes in Kazakhstan has quadrupled in recent years, and the number of children under 15 with diabetes increased by 66% from 2015 to 2022. Approximately 16,000 limb amputations are performed annually due to complications from this disease. Furthermore, the number of patients on dialysis reached 16,000 in 2023. In total, 400,000 people with diabetes are registered in our country.

Some more figures: 21% of children aged 6–9 are overweight, and 6% are obese. As for adults, according to WHO research, the average prevalence of obesity in Kazakhstan in 2016 was 18.9% for men and 22.7% for women. In both cases, the incidence of obesity is steadily increasing.

A healthy plate consists of 1/4 protein, 1/4 healthy fats (high-quality oils in dark glass bottles), and the remaining 1/2 plate of complex carbohydrates (vegetables, grains). Maintaining this balance will prevent a healthy person from craving sweets. By distributing the micronutrient load in this way, the need for constant refills is reduced. Sweet cravings can have many causes, for example, a deficiency in micronutrients such as magnesium, zinc, chromium, and iron. As a rule, closing the deficiencies of these vitamins leads to a decrease in strong cravings for sweets (How Kazakhstan is moving toward sugar freedom).

According to the WHO, taxes on sugar-sweetened beverages should be at least 20%.

The Ministry of Health, as a government executive body, expects an increased burden on public health, as the country's population is projected to grow by 13% by 2030. This means that the increased incidence of diseases will lead to significant costs for the healthcare system.

Non-communicable diseases account for approximately 84% of all deaths in our country.

Diabetes is among the top ten most costly diseases according to the Ministry of Health for 2023.

Losses to the economy associated with decreased labor productivity exceed government healthcare expenditures by 6.5 times, amounting to 2 trillion tenge per year. Overall, the current damage caused by non-communicable diseases to the Kazakh economy amounts to 2.3 trillion tenge per year, equivalent to 4.5% of the country's annual GDP.

Taxes on sugar-sweetened beverages (SSBs) are considered a cost-effective policy measure to limit excessive calorie consumption. For governments, this can yield a triple benefit: improved public health, increased government revenue, and reduced long-term healthcare costs.

In 2016, the WHO specifically identified SSN taxation as a priority policy measure to combat noncommunicable diseases and eliminate childhood obesity. Fiscal policy measures are recommended as important components of a comprehensive approach to improving public health. Currently, 115 countries already implement SSN taxes (import duties, excise duties, and ad valorem taxes), including the world's wealthiest countries – the UAE, Saudi Arabia, Qatar, Oman – and European countries. At least 148 countries have also introduced excise taxes on alcoholic beverages at the national level.

As the WHO notes, introducing high taxes on alcohol and sugar-sweetened products also encourages companies to shift to producing healthier products. A recent Gallup poll, conducted in collaboration with the WHO and Bloomberg Philanthropies, found that a majority of respondents in all countries support raising taxes on unhealthy products such as alcohol and sugary drinks.

Global Energy Drink Consumption

Experts attribute the growing popularity of energy drinks to the modern pace of life and the intense competition in some countries. This requires people to be active 24/7. This is obviously physically impossible. Even during the day, a person's body is physiologically unable to work at the same pace nonstop. Energy drink manufacturers and marketers exploit this, successfully selling a "25th" hour of the day to people who strive to "get it all done."

While energy drinks were previously consumed primarily by athletes, night shift workers, gym-goers, and truck drivers to prolong their activity at the right time, now, according to a study in the International Journal of Health Sciences, young people have become the main consumers of energy drinks (5). Moreover, according to expert observations, teenagers most often try them out of curiosity or to become part of a certain group of teenagers who already consume energy drinks. Teenagers often consume adult beverages out of a desire to appear "grown-up." Many of them neglect sleep, relying on a can of "liquid batteries" that promises to energize and even improve their health, as many cans list added vitamins among the ingredients. People describe the effect of the "energy drink" as suppressing sleep, increasing concentration, and reaction time – in other words, enhancing mental and physical activity. Gradually, a person becomes dependent on this quick recharge. Over-the-counter distribution in various countries also contributes to sales growth.

The composition of modern energy drinks has changed significantly compared to their early versions. Today, energy drinks are classified as non-alcoholic (or low-alcohol) beverages. Most of them have identical compositions: caffeine, taurine, ginseng, guaranine, L-carnitine, and some contain B vitamins, ascorbic acid, melatonin, glucose, fructose, and sucrose. Caffeine, taurine, ginseng, and guaranine are plant-based psychoactive stimulants.

The harmful effects of energy drinks have been confirmed by research from the World Health Organization (WHO)

Experts are paying particular attention to energy drink consumption among minors. For adolescents aged 12 to 18, the maximum daily caffeine intake is 100 mg.

Incidentally, caffeine is also found in other products that some families consume daily, such as tea, chocolate, and cocoa. Therefore, the actual daily caffeine intake from energy drinks can be even higher.

In addition to its effects on the nervous system, caffeine depletes iron, zinc, potassium, B vitamins, and calcium from the body. This can lead to growth retardation and skeletal deterioration in adolescents. Scientists have also concluded that energy drink consumption causes serious damage to tooth enamel after just five days of daily consumption. The main purpose of energy drinks is to stimulate the nervous system, and since children's nervous systems are still developing, this can cause irreparable harm to a growing body.

Experts claim that energy drinks are addictive, both physiologically (caffeine tolerance) and psychologically (from the almost instantaneous boost of energy (the gases contained in the drink accelerate peristalsis and absorption of substances).

In Kazakhstan, a ban on the sale of energy drinks has been in effect since 2013 in educational and training facilities, preschools, orphanages, and children's health and sanatorium facilities. According to the decision of the Customs Union Commission dated December 9, 2011, "On the adoption of the technical regulations of the Customs Union 'On food safety,'" the maximum permissible caffeine level in beverages is no more than 150 mg/liter. Accordingly, each can of soft drink containing caffeine in excess of 150 mg/liter must be labeled with the warning: "Not recommended for children under 18 years of age, pregnant or breastfeeding women, or individuals with increased nervous excitability, insomnia, or hypertension."

Nevertheless, energy drink consumption is growing among Kazakhstani teenagers. According to an analysis by the Ministry of Health, published in the "Open Regulatory Acts" section of the e-government website Egov, approximately 45% of teenagers in our country aged 11 to 15 have tried energy drinks. Many of them subsequently developed an addiction. Currently, almost 12% of schoolchildren drink energy drinks daily or several times a week, and the proportion of such drinkers is increasing every year.

Reproductive health refers to both the health of the reproductive system and the complete physical and social well-being of expectant parents. Reproductive rights are human rights related to the reproduction of one's own kind (reproduction). According to the Beijing Platform for Action (1995) and the UN Convention on the Elimination of All Forms of Discrimination against Women (Article 16), reproductive rights are based on "the recognition of the fundamental right of all married couples (World Health Organization. Reproductive health. 2026).

Within the framework of the UN Sustainable Development Goals global agenda, Goal 3 aims to ensure universal access to sexual and reproductive health services by 2030, including family planning services, information, education, and the integration of reproductive health issues into national strategies and programs.

The reproductive rights of citizens of the Republic of Kazakhstan are regulated by the following regulatory documents:

1. The Constitution of the Republic of Kazakhstan;

2. The Code of the Republic of Kazakhstan "On Public Health and the Healthcare System" dated July 7, 2020, No. 360-VI ZRK.

In Kazakhstan, the incidence of genitourinary diseases affecting reproductive health in individuals aged 18 and older in 2021 was higher among women (878,524 cases) than among men (274,044 cases). The difference amounts to 604,480 cases. Furthermore, genitourinary diseases such as kidney and ureteral stones are almost equally common in both women (12,495 cases) and men (10,819 cases). The number of cases of renal tubulointerstitial disease recorded in both women (226,484 cases) and men (97,284 cases) is alarming. Also noteworthy is the high number of cases of cervical erosion and ectropion in women (60,640 cases).

Male infertility cases were registered in 1,372 patients in 2020, and in 1,515 men in 2021. Female infertility cases were registered in 16,187 patients in 2020, and in 19,880 women in 2021. We are seeing an increase in the registration of both female and male infertility cases in the republic.

Registration of both female and male infertility cases

Table 1. *Incidence of diseases of the genitourinary system affecting reproductive health in individuals at risk grow up to 18 years and older in 2021*

Name of classes and individual diseases	Number of registered diseases in the reporting year			
			of which with a diagnosis established for the first time in life	
	men	women	men	women
Diseases of the genitourinary system, total	274 044	878 524	121 126	402 228
of these:				
glomerular diseases	2 027	2 215	350	429
renal failure	8 366	8 088	1 758	1 570
renal tubulointerstitial diseases	97 284	226 484	34 292	74 367
of these				
kidney and ureter stones	10 819	12 495	4 761	5 220
prostate disease	53 062	–	20 008	–
male infertility	1 515	–	814	–
salpingitis, oophoritis	–	46 124	–	25 028
erosion and ectrodion of the cervix	–	60 640	–	24 766
menstrual-ovarian cycle disorder	–	18 402	–	12 422
menopausal and postmenopausal disorders	–	14 709	–	6 829
female infertility	–	19 880	–	7 162

Anemia incidence data in the republic demonstrate positive trends, with the number of patients with anemia decreasing each year. In 2016, 1,888.8 cases of anemia were recorded, while in 2021, the rate was 1,016 per 100,000 population.

Regionally, anemia incidence is most common in Kyzylorda Region (2,663.1), Almaty Region (1,884.2), West Kazakhstan Region (1,714.9), Shymkent City (1,662.1), and Aktobe Region (1,335.9). It is worth noting that these regions also have high birth rates. This requires additional funding for anemia prevention and treatment. The lowest incidence of anemia is in the Karaganda region (273.1), Astana (470.3), and Pavlodar region (481.2).

Data on the incidence of anemia in the republic

Table 2. *Anemia incidence by region, number of cases per 100,000 population*

	2016	2017	2018	2019	2020	2021
Republic of Kazakhstan	1 888.8	1 875.8	1 680.4	1 555.2	1 272.7	1 016.0
Akmola region	921.3	8777	835.5	736.7	574.9	623.8
Aktobe region	2 518.9	2 166.0	1 630.4	1 506.2	1 418.9	1 335.9
Almaty region	2 221.9	2 241.1	2 045.8	2 077.5	2 054.5	1 884.2
Atyrau region	2 266.4	2 245.0	2 231.7	1 595.1	1 548.4	1 603.1
ЗКО	1 692.2	1 704.0	1 844.1	1 775.6	1 719.4	1 714.9
Zhambyl region	2 085.3	2 363.7	1 975.1	1 988.2	1 988.6	927.3
Karaganda region	669.8	637.1	595.0	477.2	390.9	273.1
Kostanay region	569.3	509.2	417.4	385.4	377.6	388.2

	2016	2017	2018	2019	2020	2021
Kyzylorda region	3 756.1	2 485.0	3 700.3	3 493.3	2 846.3	2 663.1
Mangystau region	2 676.7	2 688.5	2 644.1	2 443.4	1 737.5	1 115.8
South Kazakhstan region	3 551.3	3 475.5	–	–	–	–
Pavlodar region	730.0	749.6	722.2	607.3	473.3	481.2
CKO	709.2	661.9	700.9	694.8	689.4	622.3
Turkestan region	–	–	2 855.3	2 518.0	1 431.8	648.4
BKO	1 078.1	1 073.6	969.2	903.9	780.1	726.7
Astana	753.3	802.4	846.2	818.9	600.5	470.3
Almaty	1 363.6	1 357.1	1 158.0	1 004.2	731.4	660.1
Shymkent	–	–	2 970.7	2 793.2	2 191.9	1 662.1

An analysis of gender data on the incidence of iodine deficiency diseases in the republic reveals a decrease in the number of these diseases year after year (in 2018, there were 215 cases among women and 73.9 cases among men; in 2019, there were 197.7 cases among women and 67.4 cases among men; in 2020, there were 154.9 cases among women and 55.4 cases among men; and in 2021, there were 149.2 cases among women and 55.3 cases among men). However, the number of women diagnosed with iodine deficiency is three times higher than that of men. Data on patients diagnosed with iodine deficiency by urban/rural breakdown show that urban women are also 2.7 times more likely to be diagnosed with iodine deficiency than urban men, while rural women are diagnosed with iodine deficiency three times more often than rural men. We see a clear gender disproportion in the number of people suffering from iodine deficiency and the level of diagnosis of the disease.

The incidence of diseases associated with iodine deficiency in the republic

Table 3. *Incidence of diseases associated with iodine deficiency, nuber of newly diagnosed cases per 100,000 population, people*

	Total		Including			
			in urban settlements		in rural areas	
	women	men	women	men	women	men
2016	126.9	29.4	165.7	39.6	71.9	16.7
2017*	239.3	76.9	284.4	98.8	175.0	49.1
2018	215.0	73.9	257.7	92.3	152.4	50.0
2019	197.7	67.4	263.4	88.2	127.5	41.7
2020	154.9	55.4	196.7	75.2	91.2	28.9
2021	149.2	55.3	181.6	76.4	99.1	26.6

** Until 2017, data only on hypothyroidism was included, but since 2017, all diseases associated with iodine deficience have been added as a separate line to Form No. 12*

Analyzing the data on the incidence of diseases associated with iodine deficiency by region, we see that the "anti-leaders" in 2021 are Shymkent (271.7), Almaty (202.5), Zhambyl region (195.9), Kyzylorda region (113.9), and Astana (110.6). Patients are least likely to be diagnosed with iodine deficiency in such regions as West Kazakhstan region (7.4), Karaganda region (22.9), North Kazakhstan region (27.0), and Kostanay region (40.6) (Table 4).

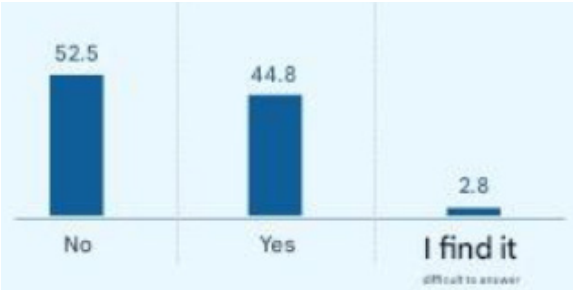
Incidence of diseases associated with iodine deficiency by region

Table 4. *Incidence of diseases associated with iodine deficiency, nuber of cases per 100,000 population, people*

	2016	2017*	2018	2019	2020	2021
Republic of Kazakhstan	79.7	160.7	145.7	130.6	106.6	103.6
Akmola region	49.6	44.1	44.5	55.0	47.1	80.3
Aktobe region	17.5	109.0	93.0	69.3	65.0	58.0
Almaty region	42.0	119.7	105.6	108.9	69.0	82.2
Atyrau region	70.4	96.6	101.9	72.4	66.2	61.0
ЗКО	73.1	13.8	11.0	9.9	7.6	7.4
Zhambyl region	50.2	323.7	303.5	244.5	177.5	195.9
Karaganda region	101.2	16.1	19.2	23.5	22.9	46.6
Kostanay region	48.7	35.1	32.2	30.4	42.6	40.6
Kyzylorda region	60.5	152.4	185.7	218.3	155.7	113.9
Mangystau region	103.8	23.0	129.0	104.7	63.5	64.2
South Kazakhstan region	71.8	298.2	–	–	–	–
Pavlodar region	61.6	147.8	137.7	123.5	95.5	74.8
СКО	158.9	26.2	20.4	16.9	23.8	27.0
Turkestan region	–	–	130.6	97.6	63.0	65.5
ВКО	74.5	161.8	202.5	143.7	121.2	98.9
Astana	225.0	100.7	113.8	129.8	169.5	110.6
Almaty	110.8	337.7	249.7	219.5	177.1	202.5
Shymkent	–	–	405.6	397.0	337.2	271.7

** Until 2017, data only on hypothyroidism was included, but since 2017, all diseases associated with iodine deficiency have been added as a separate line to Form No. 12.*

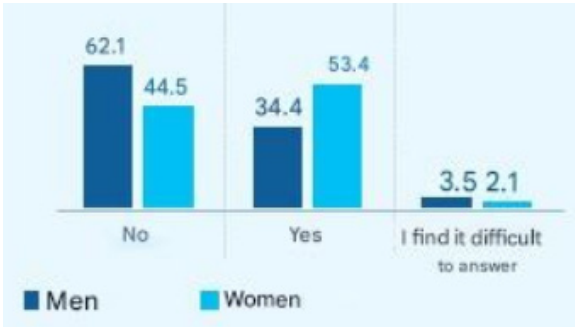
Figure 1. *Have you used any reproductive health services, (examination by doctors, screenings, etc.) in the last 5 years?(%)*



Source: Sociological research by KIOR

Kazakhstanis rate reproductive health services at 3.7 on a 5-point scale. On this scale, 1 indicates low satisfaction, 5 indicates high satisfaction (Code of the Republic of Kazakhstan. 2011).

Figure 2. *Have you used any reproductive health services, (examination by doctors, screenings, etc.) in the last 5 years?(%) (distribution by gender, %)*

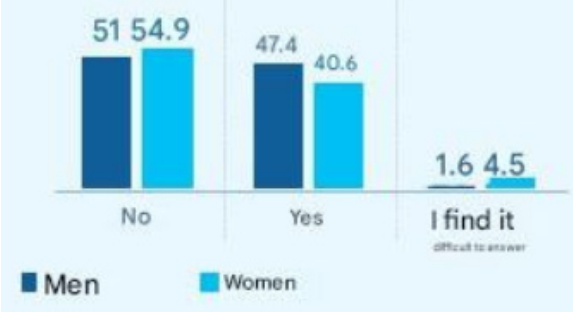


Source: Sociological research by KIOR

Statistics on the incidence of sexually transmitted diseases (STDs) show a downward trend in both men and women, in both

urban and rural areas. In 2016, 115.2 cases of STDs were recorded among women, while in 2021, the figure was 63.6 per 100,000. Among men, the rate was 88 cases per 100,000 in 2016, while in 2021, the figure was 53. In urban areas, there were 73 cases of STDs in 2016, while in rural areas, the figure was 43.4. In 2021, the data decreased, showing 37.5 cases in the city and 21.1 in the village (Table 5).

Figure 3. *Have you used any reproductive health services, (examination by doctors, screenings, etc.) in the last 5 years?(%) (distribution by type of settlement, %)*



Source: Sociological research by KIOR

Data on the incidence of diseases primarily transmitted sexually

Table 5. *Incidence of sexually transmitted diseases, nuber of cases per 100,000 population, people*

	Total		including			
			in urben settlements		in rural areas	
	women	men	women	men	women	men
2016	115.2	88.1	144.8	158.4	73.3	43.4
2017	99.9	96.4	119.4	136.8	72.1	45.4
2018	84.6	85.0	100.2	119.0	61.8	40.9
2019	67.4	73.4	81.9	106.0	50.7	36.8
2020	51.0	53.2	64.5	76.4	30.5	22.1
2021	63.6	53.0	80.5	76.5	37.5	21.1

Data on the number of people registered with HIV/AIDS in Kazakhstan show a rapid increase. In 2016, there were 16,429 cases, while in 2020, there were 23,760 (an increase of 7,331). This increase was observed among both men – from 9,540 in 2016 to 13,902 in 2020 (an increase of 4,362) – and women, although the increase in incidence was less intense: from 6,889 in 2016 to 9,858 in 2020 (an increase of 2,960). A survey of Kazakhstani respondents' opinions on the effectiveness of public policy in the area of men's health, conducted as part of the National Report "Kazakhstani Families 2022," revealed that 42.5% of respondents (the total number of positive responses) considered public policy in the area of men's health effective, while 25.2% (the total number of negative responses) considered it ineffective. Moreover, positive assessments were more often given by women (43.6%) than by men (41.2%). Those who believe that public policy in the area of reproduction is ineffective were 27.2% of men and 23.4% of women.

Data from the National System of Assistance to Women of the Republic of Kazakhstan on the number of pregnant women infected with HIV show an increase in the incidence: from 724 in 2016 to 834 in 2020. Pregnant women with HIV are most frequently registered in Almaty (126), Karaganda Region (102), Almaty Region (96), East Kazakhstan Region (96), and Kostanay Region (72). The least frequent cases of HIV infection are recorded in Atyrau Region (3), Mangistau Region (7), Kyzylorda Region (10), and Aktobe Region (13).

Low life expectancy among Kazakhstani men-68.8 years, and among women-78 years – creates a gender gap of 8 years.87 The rising number of male mortality rates and the incidence of HIV and AIDS necessitates the development of new values among men regarding their own health, emphasizing individual responsibility for their own health. It is especially important to change gender stereotypes regarding men's health (the norm of physical fitness, which prohibits men from complaining of pain, seeking medical attention promptly, and avoiding risky sports, etc.).

Family planning allows couples to decide when and how many children to have; to have the information and tools to make this choice consciously and using safe methods. What is the difference between birth control and family planning? Birth control is a wide range of methods aimed at preventing pregnancy, including termination. Family planning involves determining the number of children, the timing of their births, the use of methods to prevent unwanted pregnancies, and, conversely, creating conditions for the onset of a desired pregnancy. Unlike birth control techniques, family planning excludes the use of induced abortion.

Data from the BNS ASPR RK show that from 2016 to 2020, the number of women using contraception in Kazakhstan has increased – from 1,621.2 thousand to 1,789.0 thousand. In percentage terms, this increase was from 35.6% in 2016 to 39.4% in 2020. However, in 2021, the number of women using contraceptives decreased to 1,610.9 thousand. The most popular contraceptives are the intrauterine device (IUD) – 689.2 thousand people, and condoms – 490.6 thousand people. At the same time, the pill is the least popular method of contraception (241.1 thousand people in 2021), while injections are used the least (4.3 thousand people in 2021).

The number of women using contraception

Table 6. *Use of contraceptives, thousands of people*

	2016	2017	2018	2019	2020	2021
The number of women using contraception	1 621.2	1 780.2	1 784.0	1 721.9	1 789.0	1 610.9
as a percentage of the number of women of reproductive age	35.6	39.2	39.3	37.9	39.4	35.4
Of these, by type of contraception						
condoms	339.9	403.2	451.7	420.9	4771	490.6
pills	298.3	329.7	321.7	291.5	276.5	241.1
injections	4.4	4.4	4.9	4.4	4.8	4.3
BMC	867.9	871.7	820.8	826.8	869.8	689.2

Regional statistics on contraceptive use show that 35.4% of women of reproductive age in Kazakhstan use contraceptives. Women in the Kyzylorda region (55.6%), Almaty region (52.9%), Astana city (48.3%), and Aktobe region (47.6%) are the most likely to do so.

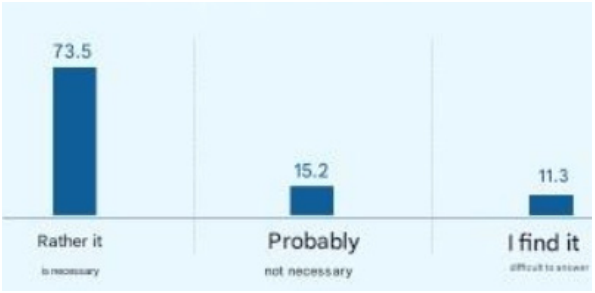
Regional data on contraceptive use

Table 7. *Contraceptive use as of the end of 2021, people*

	The number of women using contraception		Including types of contraception			
	total	as a percentage of the number of women of reproductive age	condoms	pills	injections	BMC
Republic of Kazakhstan	16 108 56	35.4	490 616	241 067	4 338	689 150
Akmola region	53 724	31.7	21 838	6 384	22	17513
Aktobe region	103 656	47.6	19 100	13 156	100	57 440

	The number of women using contraception		Including types of contraception			
	total	as a percentage of the number of women of reproductive age	condoms	pills	injections	BMC
Almaty region	248 435	52.9	70 969	25 987	1 005	126 552
Atyrau region	18 842	12.3	3 302	2 480	32	10 784
ЗКО	45 378	29.5	11 574	7 673	28	19 777
Zhambyl region	74 757	29.4	10 223	4 651	152	55 002
Karaganda region	104 672	31.8	40 665	21 947	91	30 971
Kostanay region	65 399	31.3	24 476	20 815	4	13212
Kyzylorda region	103 576	55.6	20 843	3 317	452	70 144
Mangystau region	35 305	20.7	3 206	5 196	96	15 802
Pavlodar region	64 882	36.8	24 354	22 148	16	10 937
СКО	32 956	27.4	12 276	8 057	13	12 257
Turkestan region	101 678	22.9	13 612	5 570	915	73 284
ВКО	160 807	51.6	66 608	27 961	242	50 488
Astana	156 592	48.3	71 933	17 350	380	42 035
Almaty	154 001	26.3	57 829	40 543	577	31 874
Shymkent	86 196	31.2	17 808	7 832	213	51 078

Figure 3. *Do you think it is necessary to plan the birth of a child or is it optional ?(%)*



Source: Sociological research by KIOR

An unplanned pregnancy often results in induced termination of pregnancy. Induced termination of pregnancy is the termination of a pregnancy up to 22 weeks (essentially, up to the time the fetus must remain in the womb to survive). If pregnancy and childbirth pose a risk to the woman's life or fetal malformations incompatible with life are detected, doctors may recommend induced termination of pregnancy. In the Republic of Kazakhstan, induced termination of pregnancy is performed 1) at the woman's request up to 20 days into pregnancy and if her period is late, and up to 12 weeks into pregnancy; 2) for medical reasons for both the mother and the fetus, regardless of the gestational age, according to approved indications; 3) for social reasons between 13 and 22 weeks, according to approved indications.

Statistics on the number of induced terminations of pregnancy in Kazakhstan show that from 2016 to 2021, their number decreased from 78,900 to 71,800. The leading regions in terms of reducing the number of induced abortions include the cities of Astana (from 7.4 thousand in 2016 to 5.8 thousand in 2021), Almaty (from 8.3 thousand in 2016 to 6.9 thousand in 2021), and Kostanay region (from 5.3 thousand in 2016 to 3.3 thousand in 2021). The regions with the worst increases in abortion rates are Almaty Oblast (from 5,700 in 2016 to 6,700 in 2021), Aktobe Oblast (from 2,400 in 2016 to 2,800 in 2021), and Akmola Oblast (from 2,300 in 2016 to 2,800 in 2020).

In 2021, 428 cases of induced abortions among minors were registered, including 15 cases among adolescents under 14. The highest number of cases of induced abortions among minors were recorded in the Turkestan, Karaganda, Almaty, East Kazakhstan, and Mangystau regions.

Artificial termination of pregnancy among minors

Table 8. *Artificial termination of pregnancy by region, broken down by age grous*

Region	2021 of which by age				6 months of 2022 of which by age			
	up to 14 years incl.	15 17 years (ON)	18 years and older - we	Total	up to and including 14 years old	15-17	18 years and older we	Total
Akmola region	2	19	2763	2784	0	13	922	935
Aktobe region	1	10	2804	2815	0	5	1254	1259
Almaty region	2	38	6656	6696	0	15	3205	3220
Atyrau region	0	18	1951	1969	0	10	876	886
BKO	4	32	6400	6436	1	19	1981	2001
Zhambyl region	1	30	4482	4513	0	11	1097	1108
3KO	1	11	3441	3453	0	4	610	614
Karaganda region	1	45	6363	6409	0	19	1833	1852
Kostanay region	1	31	3321	3353	0	7	936	943
Kyzylorda region	0	7	2557	2564	0	0	1113	1113
Mangystau region	0	35	3316	3351	0	18	1056	1074
Pavlodar region	1	27	3255	3283	0	7	1229	1236
CKO	0	12	2542	2554	0	1	799	800
Turkestan region	0	47	6480	6527	0	26	3207	3233
Astana	0	25	5846	5871	1	6	1374	1381
Almaty	1	17	6961	6979	0	12	2848	2860
Shymkent	0	9	2281	2290	0	7	1237	1244
Totat	15	413	71419	71847	2	180	25577	25759

Maternal Mortality

The concept of safe motherhood was formulated in the 1980s by the World Health Organization as a set of socioeconomic, legal, and medical measures that promote the birth of desired children at optimal ages without negatively impacting women's health, preserving their lives, preventing disability, ensuring the upbringing of children, and balancing motherhood, household responsibilities, and work. Due to the high risk, pregnancy is contraindicated for women with a number of medical conditions, including active tuberculosis, malignant tumors, severe cardiovascular disease, liver and kidney disease, blood disorders, and other ailments. Some maternal illnesses adversely affect the fetus in utero, causing malformations, developmental delays, and death.

Factors affecting safe motherhood:

- Age (the optimal age for a woman to conceive is between 20 and 35 years. After 35, women's reproductive function declines and the risk of having a child with a genetic disorder increases);
- Weight (low weight or, conversely, obesity can lead to hormonal changes in a woman's body and interfere with ovulation);
- Extragenital diseases (diabetes mellitus, diseases of other endocrine glands, kidney disease, liver disease, bronchial asthma, epilepsy) in men cause inflammation of the prostate, seminal vesicles, testicle and its epididymis, which leads to the inability to produce sperm and/or release them;

in women, inflammation of the ovaries, uterus and fallopian tubes, which prevents the maturation, movement and implantation of the fertilized egg; some STIs, for example, syphilis, can be transmitted through the placenta to the fetus, causing serious diseases in newborns;
- Harmful occupational factors (contact with pesticides, lead, mercury, various inorganic dust, radioactive isotopes);
- Use of certain medications;
- Smoking and alcohol consumption during pregnancy; The use of drugs such as cannabis (hemp), synthetic drugs, amphetamine (ecstasy), heroin, and others, causes the destruction of emotional and spiritual intimacy between a man and a woman;
- in men, this manifests itself, in particular, as loss of erection (impotence) and ejaculation (inability to ejaculate);
- in women, it is fraught with fetal developmental abnormalities and the development of drug addiction in the unborn child;
- stress (can be a factor in delayed or absent ovulation in a woman).

Early registration is very important. A doctor can prescribe therapy for underlying conditions; promptly diagnose the onset of preeclampsia (a complication that occurs in the second half of pregnancy) and prescribe treatment, and, if threatened, take action; determine the risks of hereditary diseases; identify developmental pathologies or intrauterine death of the fetus, and propose and take appropriate measures (Ventskovsky B. M., Ventskovskaya I. B., Gutman L. B., 2010).

Unfortunately, in Kazakhstan from 2016 to 2021 The number of deaths among pregnant women in labor and postpartum has increased from 51 women per 100,000 births in 2016 to 200 women per 100,000 births in 2021. The leading causes of maternal mortality are:
- extragenital diseases – 77%;
- gestosis (preeclampsia, eclampsia) – 6.1%;
- obstetric hemorrhage – 5.5%.

Maternal mortality

Table 9. *Maternal mortality*

	The number of deceased pregnant women, women in labor, and women in childbirth, people	Per 100,000 live births
2016	51	12.7
2017	66	17.4
2018	52	13.5
2019	55	13.7
2020	156	36.5
2021	200	44.71
10 months 2022	49	14.3

Table 10. *Stucture of maternal by causes of death, %*

	2016	2017	2018	2019	2020	2021
obstetric hemorrhage	11.5	6.1	12.5	20.0	5.5	5.5
gestosis (preeclampsia, eclampsia)	5.8	14.3	21.4	9.1	6.1	2.5
uterine rupture	5.8	0.0	1.8	5.5	3.5	1.5
sepsis	3.8	6.1	14.3	1.8	1.0	1.5
extragenital diseases	42.3	40.8	35.8	43.6	77.0	82.5
induced abortion	17.3	4.1	7.1	0.0	2.5	0.0
ectopic pregnancy	0.0	0.0	0.0	1.8	0.0	0.5
other reasons	13.5	28.6	7.1	18.2	4.4	3

According to the Ministry of Health of the Republic of Kazakhstan, the number of deaths among pregnant women, women in labor, and women in childbirth by cause of death by region of Kazakhstan is most often due to preeclampsia and eclampsia in women in the Atyrau region (3 cases in 2020) and in the East Kazakhstan region (2 cases in 2020). In 2020, 2 women died from obstetric hemorrhage in the Kyzylorda region. Three women died from uterine rupture in 2020: 1 case in the Almaty region, 1 case in the Zhambyl region, and 1 case in the Karaganda region. One woman died from sepsis in the Zhambyl region (1 case). A total of 119 women died from extragenital diseases in 2020. The most common regions where women died from extragenital diseases were Shymkent City (16 cases), Almaty Region (12 cases), Aktobe Region (10 cases), Turkestan Region (10 cases), and Kyzylorda Region (9 cases). Three women died from abortions in 2020: Aktobe Region (1 case), Kostanay Region (1 case), and Almaty City (1 case).

Most maternal deaths are preventable, as medical methods for preventing or managing complications are well known. All women need access to prenatal care during pregnancy, qualified care during childbirth, and care and support in the weeks after birth. Ensuring the presence of qualified healthcare professionals during childbirth is especially important, as timely care and treatment can make all the difference.

Study Results

The analysis revealed that Kazakhstan's healthcare system faces a number of systemic challenges.

First, the availability and quality of primary healthcare remains poor, particularly in rural areas. This is due to staff shortages, deteriorating infrastructure, and weak digitalization.

Second, there is a human resource imbalance and low motivation among healthcare workers, leading to their migration and overburdening existing staff.

Third, despite advances in high-tech medical care (cardiac surgery, transplantation, and neurosurgery), innovative technologies are poorly implemented in the regions and there is a shortage of donor organs.

Fourth, non-communicable diseases significantly impact public health, accounting for up to 84% of mortality. The prevalence of diabetes, obesity, and cardiovascular diseases is associated with poor diet and lifestyle. Fifth, challenges in maternal and child health remain, including the insufficient integration of healthcare services, staffing shortages, and the rise of certain negative indicators, such as maternal mortality.

Problems with sanitary and epidemiological safety have also been identified, including inadequate preparedness for biological threats and a weak laboratory infrastructure.

Conclusion

Thus, the healthcare system of the Republic of Kazakhstan is undergoing transformation, but remains plagued by a number of structural problems. Addressing these challenges requires a comprehensive approach, including infrastructure development, digitalization, strengthening human resources, expanding preventive programs, and improving the effectiveness of public policy.

The implementation of national projects such as "Healthy Nation" creates the preconditions for improvement, but requires further improvement of implementation and monitoring mechanisms.

References

Healthy Nation: Implementation of the National Healthcare Project of the Republic of Kazakhstan [Electronic resource]. – Access mode: https://primeminister.kz (date of access: 27.03.2026).

On approval of the Concept for the Development of Healthcare in the Republic of Kazakhstan until 2026 [Electronic resource]. – Access mode: https://adilet.zan.kz (date accessed: 03/27/2026).

Amendments have been made to the Concept for the Development of Healthcare in the Republic of Kazakhstan until 2026 [Electronic resource]. – Access mode: https://pharm.reviews/ (date accessed: 03/27/2026).

How Kazakhstan is moving toward sugar freedom [Electronic resource]. – Access mode: https://www.inform.kz/ (date accessed: 27.03.2026).
Not inspiring, but poisoning: how energy drinks are harmful to health [Electronic resource]. – Access mode: https://www.inform.kz/ (date accessed: 27.03.2026).
World Health Organization. Reproductive health [Electronic resource]. 2018. – Access mode: https://www.euro.who.int/ (date of access: 27.03.2026).
Code of the Republic of Kazakhstan "On Marriage (Matrimony) and Family". – Astana, 2011.
Ventskovsky B. M., Ventskovskaya I. B., Gutman L. B. Obstetrics: textbook. – Kiev: Medicine, 2010. – 448 p.

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DEMOGRAPHIC DEVELOPMENT OF KAZAKHSTAN: POST-SOVIET TRANSFORMATIONS AND CONTEMPORARY TRENDS

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Abstract

This article examines the demographic development of the Republic of Kazakhstan in the post-Soviet period and current trends in population reproduction. Changes in population size, ethnic structure, fertility, mortality, marriage, and divorce rates are analyzed. Particular attention is paid to the influence of socioeconomic factors, urbanization, and migration processes on the country's demographic dynamics. A conclusion is drawn about the transformative nature of demographic processes and the need to improve state demographic policy.

Keywords: *demography, Republic of Kazakhstan, population size, fertility, mortality, marriage, divorce, migration, urbanization, demographic policy*

Introduction

Demographic development is a crucial indicator of the socioeconomic state of society and a key factor in the sustainable development of the state. Since its independence, the Republic of Kazakhstan has faced large-scale demographic transformations caused by the transition to a market economy, migration processes, and changes in the social structure of society. Relevance of the Study

The relevance of the study is determined by the need to analyze contemporary demographic processes in the context of global and regional challenges. Population change, aging, the transformation of the family, rising divorce rates, and migration mobility significantly impact state social policy. In this context, the importance of scientific understanding of demographic trends and the development of effective management decisions is growing.

Purpose of the Study

The purpose of the study is to identify the main trends in the demographic development of the Republic of Kazakhstan in the post-Soviet period and today, as well as to analyze the factors influencing demographic processes.

Research Materials and Methods

The study utilized the following:

– Statistical data from the Bureau of National Statistics of the Republic of Kazakhstan;

– Population census data;

– Research papers by domestic and international researchers in the field of demography.

Research methods include:

– Statistical analysis;
– Comparative method;
– Systems approach;
– Demographic analysis of fertility, mortality, and migration indicators.

The main feature of the demographic development of the Republic of Kazakhstan under sovereignty is the dynamic change in absolute population size. Thus, up until 1993, this indicator was increasing: the average annual growth rate from 1989 to 1992 was 0.7%. Then, the republic's population began to decline, with an average annual decline of 0.9% until 1999. In subsequent years, the rate of population decline sharply slowed, and in 2002, an increase was recorded for the first time, with a continuing positive trend.

Between 1989 and 1999, Kazakhstan's population decreased by 1,246,028 people (by 7.7%) and amounted to 14,953,126 people. An absolute decrease occurred in all regions, except for Atyrau, South Kazakhstan and Kyzylorda, the cities of Astana and Almaty, where the permanent population increased by 15,578 people (by 3.6%); 154,811 people (by 8.4%); 21,751 people (by 3.8%); 38,072 people (by 13.4%); 57,429 people (by 5.4%), respectively. A significant decrease in the permanent population is noted in Karaganda (by 335,230 people, or by 19.1%); East Kazakhstan (by 236,201 people, or by 13.4%); Akmola (by 228,135 people, or 21.5%), Kostanay (by 206,115 people, or 16.7%), North Kazakhstan (by 186,085 people, or 20.4%); Pavlodar (by 135,330 people, or 14.5%) regions.

From 1999 to January 1, 2006, the population increased by 266,200 people due to increases in South Kazakhstan, Almaty, Mangistau, Atyrau, Kyzylorda, and Zhambyl regions, where the absolute growth was 255,300, 45,300, 59,800, 32,200, 22,000, and 12,300 people, respectively. In the cities of Astana and Almaty, the positive dynamics of this indicator amounted to 550.4 thousand and 118.6 thousand people, respectively. **The country's population as of July 1, 2006, according to current data from the Agency of the Republic of Kazakhstan on Statistics, was 15,219.3 thousand people.**

The ethnic structure of Kazakhstan's population is distinguished by its great diversity, which is a consequence of the republic's historical development. For example, during the Soviet period alone, numerous migrations to Kazakhstan from all republics were noted, including deportations and forced displacements, organized recruitment drives for the construction of industrial giants, the relocation of enterprises and labor, the evacuation of enormous human resources during the Great Patriotic War, labor migrations during the Virgin Lands Era, and so on. This led to a steady decline in the indigenous population and a significant increase in the non-indigenous, primarily European, and especially Russian, population. **During the years of independence, tens of thousands of migrants have flown from Kazakhstan to CIS countries and beyond, resulting in a decline in the number and proportion of European peoples in the republic's ethnic composition.**

Currently, over 130 nationalities reside in Kazakhstan. The dominant nationalities in the republic are Kazakhs and Russians, who comprise 85% of Kazakhstan's ethnic composition. The trend of increasing absolute numbers of the former and their share of the republic's population, while decreasing these figures for the latter, which began in the late 1970s, continues.

The number of Kazakhs increased by 1,488,000 during the 1989–1999 intercensal decade, reaching 53.4% of the population in 1999, up from 40.1% in 1989. In 2005, the number of Kazakhs increased again to 8,725,000, or by 740,000, and their share reached 57.9%.

The highest share of the indigenous population is found in Kyzylorda (95.3%), Atyrau (90.6%), Mangistau (83.5%), and Aktobe (75.8%) regions. The lowest share is found in North Kazakhstan (31.9%), Kostanay (33.9%), Akmola (42.1%), and Karaganda (41.4%) regions. These same regions are predominantly populated by Russians and other nationalities.

Traditionally, Kazakhs have mostly resided in rural areas. Over the years of independence, they have been significantly subject to urbanization processes. Thus, while in 1989 the proportion of Kazakhs living in cities was 38.3%, and in 1999, 45.3%. By the beginning of 2005, almost

every second Kazakh in the republic lived in cities and other urban settlements.

The number of Russians and their share in the republic's population continues to decline. Thus, between 1989 and 1999, the absolute figure decreased by 1,582,000 people, and their share in the population fell to 30.0%, compared to 37.4% in 1989. In 2005, their numbers decreased by another 456,000 people, and their share in the population fell by 1,582,000. The share of Ukrainians, Tatars, Germans, and Belarusians, as well as their relative weight in the region's ethnic composition, continues to decline. The number and relative weight of Uzbeks, Uyghurs, Azerbaijanis, and Turks is increasing.

Marriage Rate. In the 1990s, there was a sharp decline in the crude marriage rate (the number of marriages per 1,000 inhabitants): in 1987–9.8; 1991–9.8; in 1993–8.6; 1996–6.6; 1997–6.5; 1998–6.4; 1999–5.8. The number of people who have never been married has increased significantly. **Thus, according to the 1999 census, 33.3% of women aged 18–39, or every third woman of prime childbearing age, were unmarried.**

In recent years, the marital status of the population has improved somewhat. The overall marriage rate has shown an upward trend: in 2000–6.1; in 2001–6.3; in 2002–6.7; in 2003–7.4; in 2004–7.6; in 2005–8.1 per thousand. The marriage rate is higher in urban areas than in rural areas.

The highest divorce rate (over 60%) is recorded among men aged 25–39 and women aged 20–34, i.e. Divorces occur during the prime reproductive years of both sexes, which affects the birth rate and contributes to a decline in natural population growth. Urban residents are more likely to divorce. Moreover, the divorce rate in childless families with one child is significantly higher than in families with two or more children. Almost a quarter (23.8%) of divorces occur in marriages that lasted less than five years; half of divorces occur in couples who were married for five to 14 years. This means that children are raised in so-called single-parent families, usually with their mother.

The situation today

Figure 1. *Balancing professional and family responsibilities*

Fertility. From the late 1980s to the 1990s, the birth rate in Kazakhstan fell rapidly: between 1988 and 1995, the fertility rate (births per 1,000 population) fell from 24.8 to 17.5 per thousand, or by 7.3 percentage points.

Until the second half of the 1990s, the decline in the birth rate among the Kazakh

population was not clearly evident. **Thus, from 1992 to 1994, despite a decline in the overall rate, the birth rate among Kazakhs fluctuated around 200,000 in absolute terms.** At the same time, an increase in the birth rate was observed in rural areas of several southern, western, and eastern regions. However, by the mid-1990s, the number of children of third and higher birth orders in Kazakh families declined: from 68.4 thousand in 1991 to 64.3 thousand in 1993. The average fertility rate for Kazakh women during these years was 3.1. A decline in fertility also became characteristic of residents of Southern Kazakhstan**. For example, in the Turkestan region, the average fertility rate for Kazakhs ranged from 3.2 to 3.6 children per woman.** Thus, Kazakhs are rapidly moving away from having many children to having only a few. Nevertheless, a relatively high fertility rate (20.4 births per 1,000 people) remains among the Kazakh population, which accounted for almost two-thirds of all births in Kazakhstan during these years.

The fertility rate for women of Russian and Ukrainian descent was much lower than that of Kazakh women, at 1.7, which corresponded to the fertility rate of Russians and Ukrainians in the Russian Federation and Ukraine.

Experts estimate that a woman should bear 5–6 children, but intervals, good health, and adequate living conditions are essential. The health index of our women does not exceed 15%, meaning that no more than 15 out of every 100 women can give birth without problems. Almost 65% suffer from anemia, and 25% have kidney problems. These factors are exacerbated in rural areas.

Mortality and life expectancy. **During the final decades of the USSR, it was characterized by unfavorable mortality trends.** Some decline occurred in the second half of the 1980s (during the anti-alcohol campaign), but mortality rates subsequently began to increase again, in all independent states that emerged after the collapse of the USSR.

The rise in mortality in the 1990s is one of the main demographic problems for most countries transitioning to a market economy. The situation has worsened most sharply in CIS countries such as Russia, Belarus, and Ukraine, where the mortality rate has exceeded the birth rate by 1.9, 6.1, and 4.7 percentage points, respectively.

The mortality rate is characterized by a high proportion of the working-age population. Thus, over one-third of all registered deaths in 1999 occurred among the working-age population, and in this age group, male mortality exceeds female mortality by 3.6 times.

Circulatory diseases have consistently ranked first among the causes of death, accounting for more than half of all deaths, with over 60% of these deaths occurring among women. Accidents, poisoning, and injuries consistently rank second, accounting for 14.5% of all deaths, and are twice as common among men as among women. The next causes, in order of decreasing rate, are neoplasms (12.2%), diseases of the digestive system (4.7%), infectious and parasitic diseases.

Mortality rates are aggravated by a fairly high infant mortality rate. It should be noted that infant mortality trends in all the former Soviet republics were already unfavorable in the 1960s-1980s. Since the first half of the 1990s, this trend has become more evident in Kazakhstan. Thus, in 1993, the infant mortality rate increased by 8.8% compared to 1992 and amounted to 28.4 per thousand, i.e., 28 out of every thousand newborns died in the first year of life. The dynamics of this indicator in subsequent years is characterized by a decrease. Thus, the average infant mortality rate in 1994 was 27.2 per 1000 births, in 1995–27.3, in 1996–24.8; in 1997–24.9; In 1999–20.4; in 2000–18.8; in 2001–19.1; in 2002–17.0; in 2003–15.6; in 2004–14.5; in 2005–15.1.

Approximately every second infant mortality is due to respiratory diseases and conditions arising in the perinatal period (from 28 weeks of pregnancy, including childbirth and the first seven days of the child's life). Experts believe the primary causes of these diseases are unfavorable environmental conditions and insufficient or complete absence of medical care in both the prenatal and postnatal periods in rural areas.

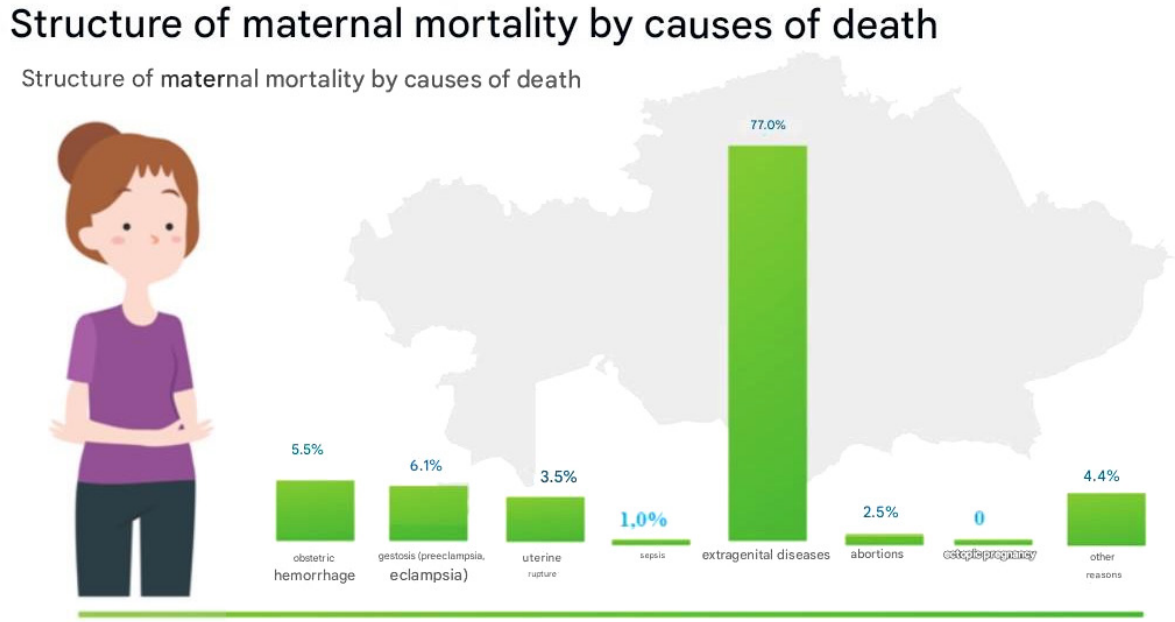
Overall, one of the most common causes of child mortality is acute respiratory infections. In particular, they account for 4 out of 15 deaths among children under 5

years of age annually. Experts compare some aspects of this indicator with those in African countries. It is one of the symptoms of poor health and poor healthcare.

The causes of child mortality are also characteristic of maternal mortality. In the 1990s, an increase was also observed: in the North Kazakhstan region, it doubled, and in the Zhezkazgan region, it tripled. The number of women with anemia, kidney disease, and cardiovascular disease is growing, which is associated with the unsatisfactory socioeconomic status of significant segments of the population, the high number of abortions, the lack or absence of qualified care, and the reduction in preventive measures for a number of diseases. The dynamics of age-specific mortality rates for women (the number of deaths per 1,000 people in the corresponding age group) from 1994 to 1997 showed a tendency to increase in most age groups from 15 to 69 years. Mortality rates among women aged 30–34 and 35–39 increased particularly during this period (by 24.4% and 15.9%, respectively). Mortality among women aged 15–19 increased by 10.4%, likely due to the rise in abortions (in terms of the number of abortions per 1,000 women, this age group ranks second after women aged 20–34).

The situation today

Figure 2. *Health protection*



In 2004, life expectancy at birth in the republic averaged 66.2 years. Although this figure has increased, gender disparities, as well as those between urban and rural populations, have deepened. In 1999, the average life expectancy for men was 60.6 years and for women 70.8 years. In 2004, it was 60.8 years for men and 72.0 years for women. In 1999, the average life expectancy for men in rural areas was 62.6 years and 59.3 years in urban areas. In 2004, these figures were 63.2 years and 59 years, respectively.

The average life expectancy of Kazakhs is lower than that of Russians. This is explained by the unfavorable socio-economic situation in rural areas, where Kazakhs constitute the majority, especially in regions located in ecological disaster zones, and the peculiarities of their traditional way of life in these conditions.

It is also interesting to note that the average life expectancy in countries such as Japan is 76.1; Iceland – 75.7; Costa Rica – 75.6; Andorra – 75.3; Hong Kong and Israel – 75.1; Australia – 75; Sweden – 74.8; Spain and Greece – 74.6; Great Britain – 73.2 years.

Population health and the state of the healthcare system. The state of the population's health is an indicator of the social well-being of a society. Thus, the primary incidence of all diseases in the adult population (based on requests for medical care) on

average in the republic decreased slightly in the late 1990s. Changes in the overall incidence were primarily due to fluctuations in the number of requests for respiratory diseases, which is due to the intensity of influenza in the population.

Demographic characteristics

Figure 3. *Number of children by gender and age*

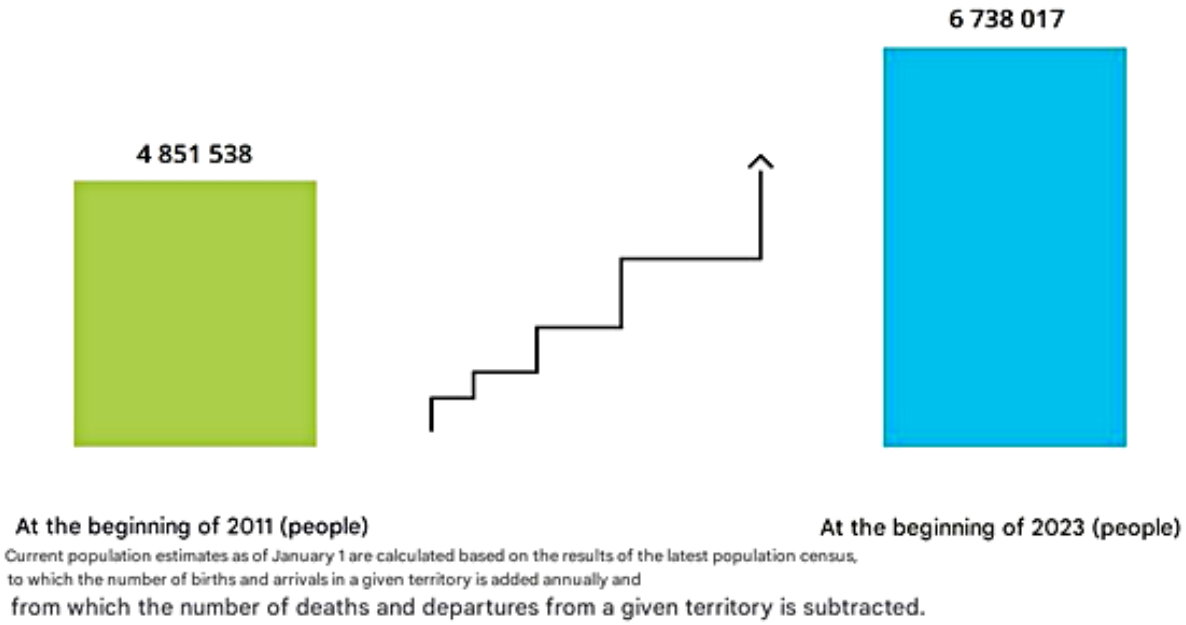
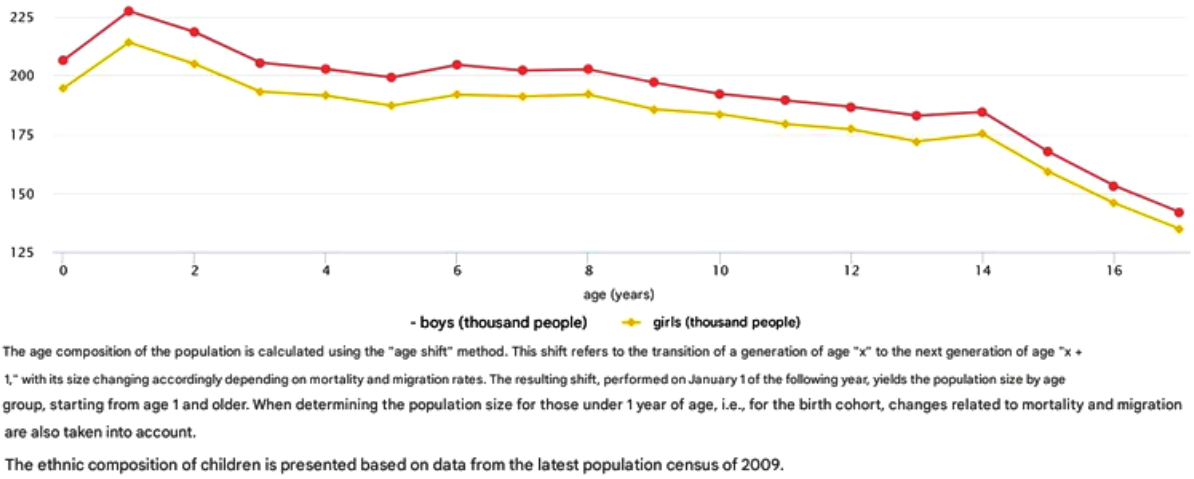


Figure 4. *Age and sex structure of the population of the beginning of 2023*



Current population estimates as of January 1 are calculated based on the results of the most recent census, to which the number of births and new arrivals to a given territory is added annually, and from which the number of deaths and departures from the territory is subtracted. The age composition of the population is calculated using the "age shift" method. This shift refers to the transition of a generation of age "x" to the next generation of age "x + 1," with its size changing accordingly depending on mortality and migration rates. The result of this shift, performed on January 1 of the following year, is the population size by single-year age groups, starting from age 1 and older. When determining the population size for those under 1 year of age, i.e., for the generation of births, changes related to mortality and migration are also taken into account.

The ethnic composition of children is presented based on data from the most recent 2021 population census.

Figure 5. *Demographic Dependency Ratio*

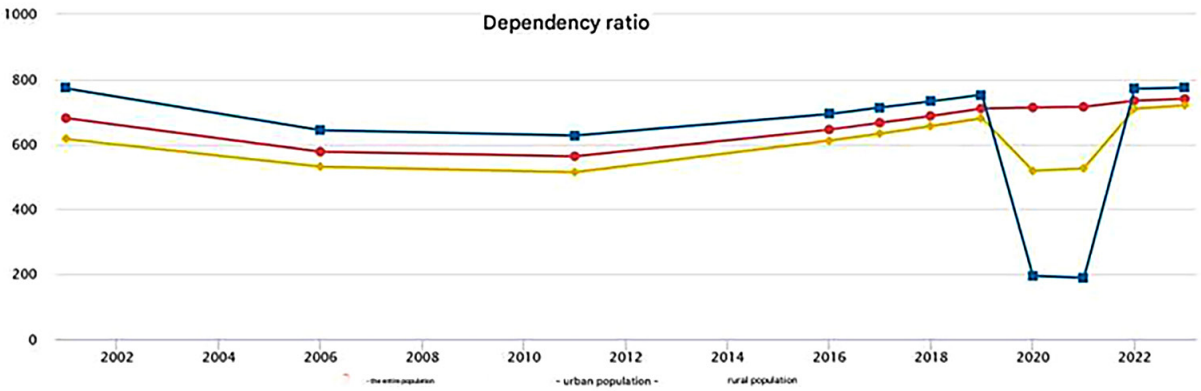


Figure 6. *Demographic dependency ratio at the beginning of 2023*

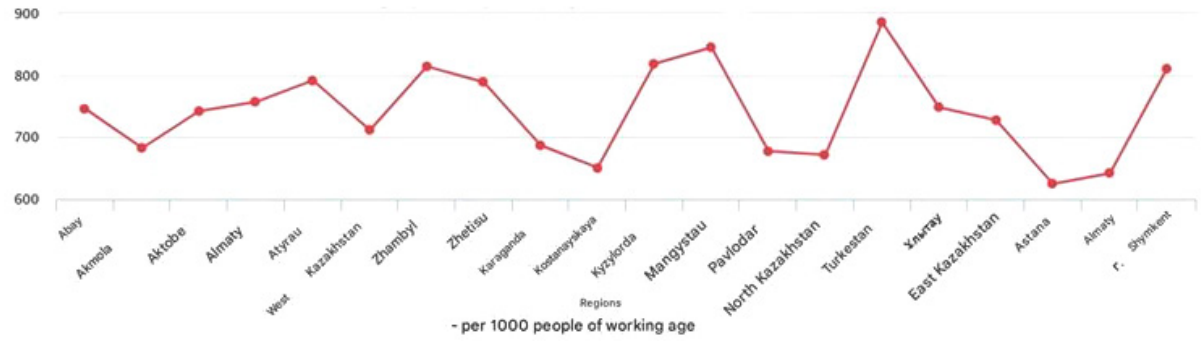


Figure 7. *National composition of children*

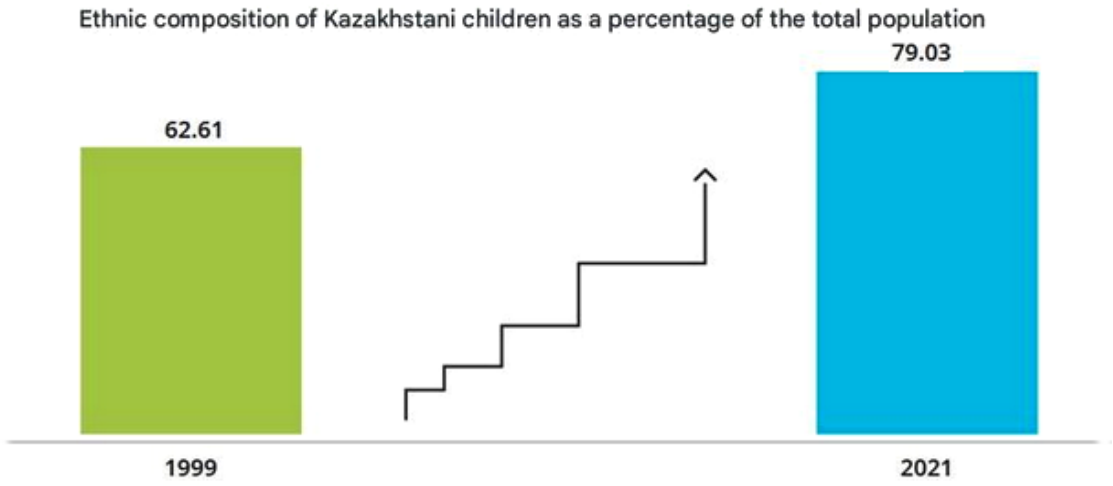


Figure 8. *Ethnic composition of children in 2021*

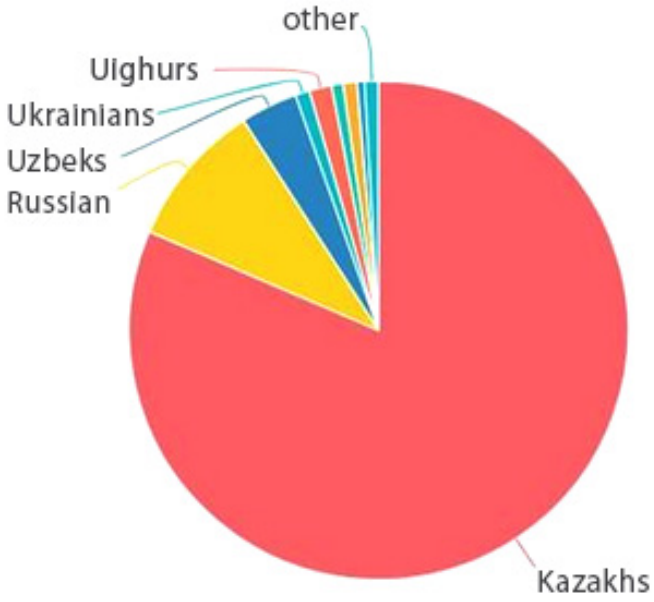


Figure 9. *Total fertility rate per 1000 people*

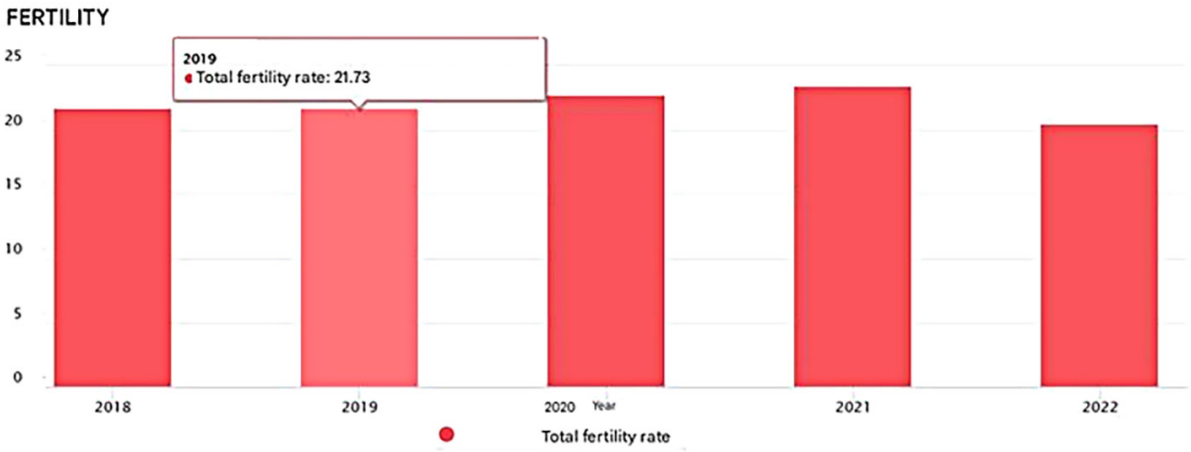
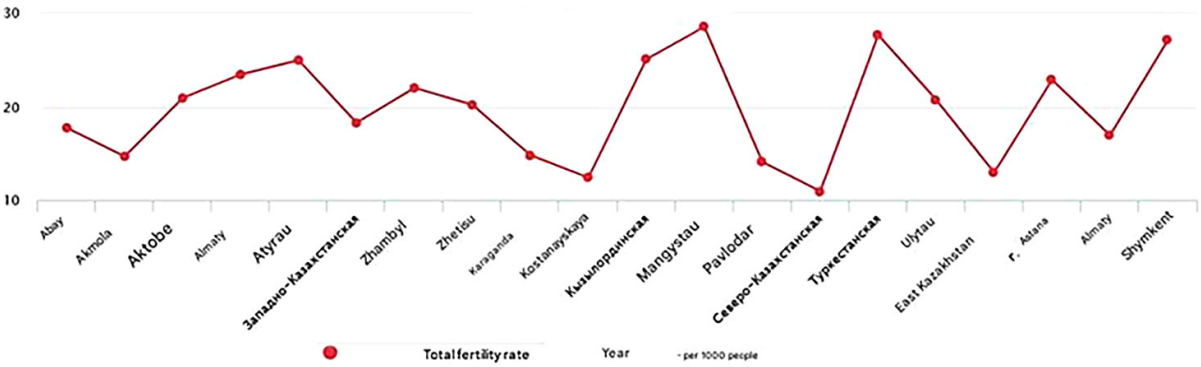


Figure 10. *General fertility rates*

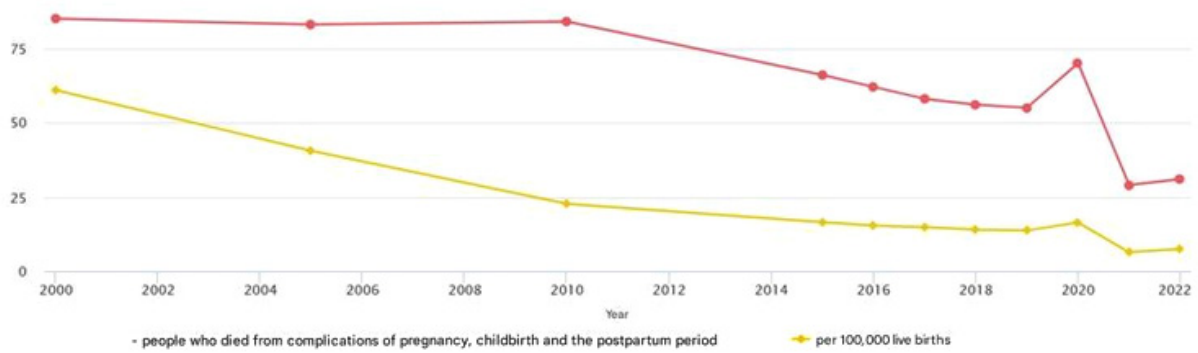


Birth data are based on the annual statistical analysis of data contained in civil birth records. The number of births includes only live births.

Birth of a child (live birth) – in Kazakhstan, the definitions of "live birth" and "stillbirth" since January 1, 2008, comply with World Health Organization (WHO) recom-

mendations. The following information from the birth record is used in the statistical analysis: characteristics of the newborn – gender, date and place of birth, birth order, singleton and multiple births, live birth and stillbirth; characteristics of the mother – date of birth, age, nationality, level of education, permanent place of residence, source of income; Records about the father, information about marital status (Appendix 1 to the public service standard "Registration of a Child's Birth, Including Amendments, Supplements, and Corrections to Civil Registry Records," approved by Order No. 219 of the Minister of Justice of the Republic of Kazakhstan dated April 17, 2015, "On Approval of Public Service Standards on Civil Registry and Apostille Registration," registered with the Ministry of Justice of the Republic of Kazakhstan on June 17, 2015, No. 11374).

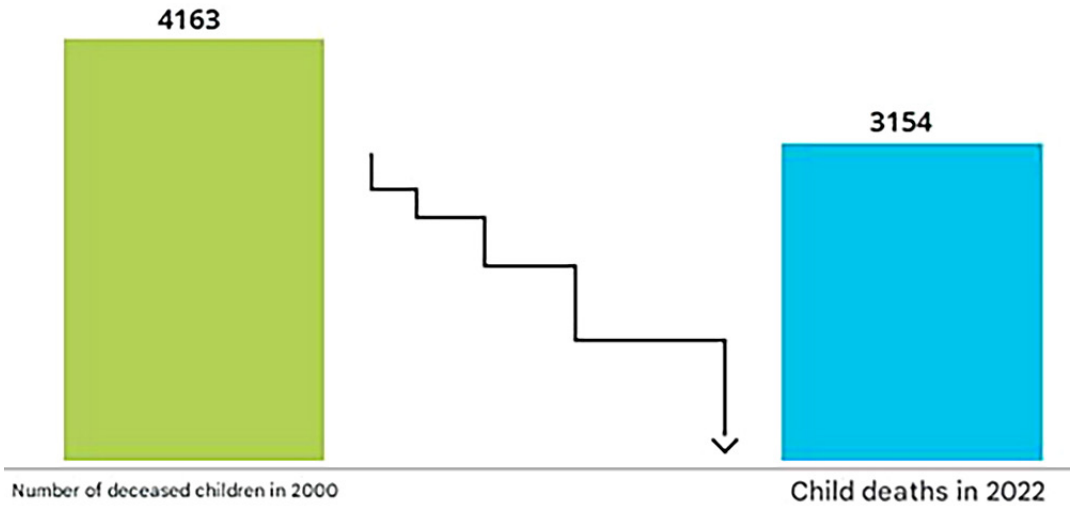
Figure 11. *Mortality of women from complications of pregnancy, childbirth and the postpartum period*



The crude birth rate (CFR) is an indicator that determines the intensity of childbearing in relation to the entire population. It is the ratio of the total number of live births during a year to the average annual population. It is usually expressed as the number of births per 1,000 population.

Age-specific fertility rates are calculated as the ratio of the number of live births per year to women in a given age group to the average annual population of women in that age group. When calculating the rate for the age group up to 20 years, the denominator is the number of women aged 15–19 years. When calculating the rate for the age group 15–49 years, the numerator includes all births, including those born to mothers aged both under 15 and 50 years and older.

Figure 12. *Infant mortality*

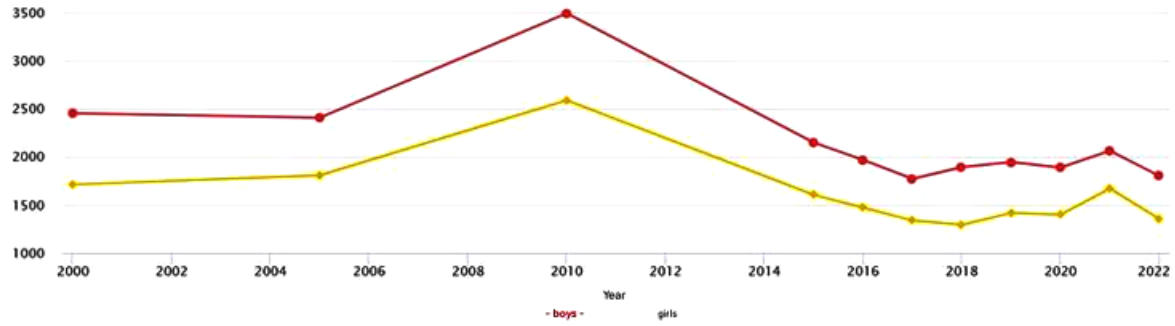


The total fertility rate shows the average number of children a woman would have given birth to throughout her reproductive life (15–49 years) if the fertility rate for each age

group remained at the same level as the year for which the age-specific rates were calculated. Its value is independent of the age composition of the population and characterizes the average fertility rate in a given calendar period. It is calculated as the average number of births per woman of reproductive age. The total fertility rate is a more accurate indicator of fertility than the crude birth rate.

Life expectancy at birth is the average number of years of life expected at birth.

Figure 13. *Infant mortality*



The infant mortality rate (IMR) is an indicator that measures the mortality rate of children under 1 year of age (age 0). It is calculated as the annual number of deaths of children aged 0 years per 1,000 live births.

Figure 14. *Infant and Child Mortality Rate for 2022*

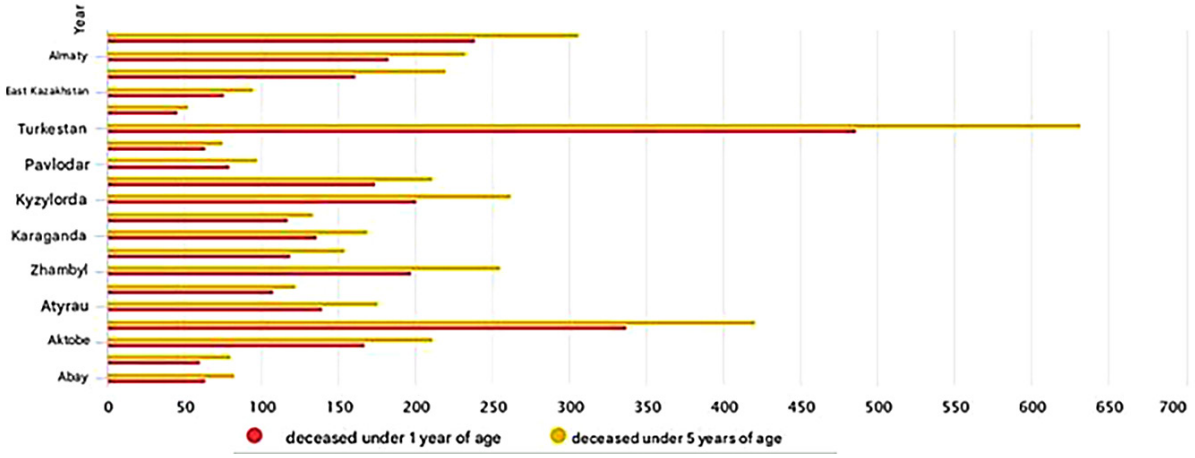


Table 1. *Infant mortality*

Years	Number of deaths of children under 1 year of age, people			Deaths under 1 year of age, per 1000 live births		
	total	boys	girls	total	boys	girls
			Whole population			
2000	4 163	2 452	1 711	15.82	21.6	15.89
2005	4213	2 406	1 807	15.15	16.81	13.38
2010	6 078	3 491	2 587	16.59	1851	1436
2015	3 751	2 147	1 604	9.41	10.46	8.3

Years	Number of deaths of children under 1 year of age, people			Deaths under 1 year of age, per 1000 live births		
	total	boys	girls	total	boys	girls
2016	3 438	1 967	1 471	8.59	9.5	7.61
2017	3 109	1 771	1 338	7.93	8.74	7.06
2018	3 184	1 892	1 292	8.03	9.25	6.74
2019	3 360	1 944	1 416	8.37	9.37	7.30
2020	3 286	1 888	1 398	7.77	8.63	6.85
2021	3 732	2 062	1 670	8.41	9.01	7.78
2022	3 154	1 800	1 354	7.68	8.52	6.80
Urban population						
2000	2 314	1 353	961	20.33	23.19	17.33
2005	2 711	1 553	1 158	16.63	18.5	14.64
2010	3 221	1 864	1 357	16.75	18.82	14.55
2015	2 177	1 236	941	9.66	10.63	8.62
2016	1 936	1 123	813	8.45	9.48	7.34
2017	1 700	935	765	7.48	7.96	6.96
2018	1 846	1 111	735	7.90	9.20	6.51
2019	2 057	1 176	881	8.61	9.52	7.64
2020	2 094	1 211	883	8.43	9.41	7.38
2021	2 723	1 489	1 234	10 45	11.07	9.78
2022	1 760	1 001	759	720	7.94	6.40
Rural population						
2000	1 849	1 099	750	17.17	19.88	14.32
2005	1 502	853	649	13.02	14.38	11.57
2010	2 857	1 627	1 230	16.43	18.18	14.58
2015	1 574	911	663	9.03	10.22	7.87
2016	1 502	844	658	8.77	9.53	7.95
2017	1 409	836	573	8.55	9.81	7.19
2018	1 338	781	557	8.21	9.31	7.05
2019	1 303	768	535	5.38	9.14	6.79
2020	1 192	677	515	6.84	7.52	6.11
2021	1 009	573	436	5.52	6.08	4.92
2022	1 394	799	595	8.41	9.36	7.39

Figure 15. *Abortions*

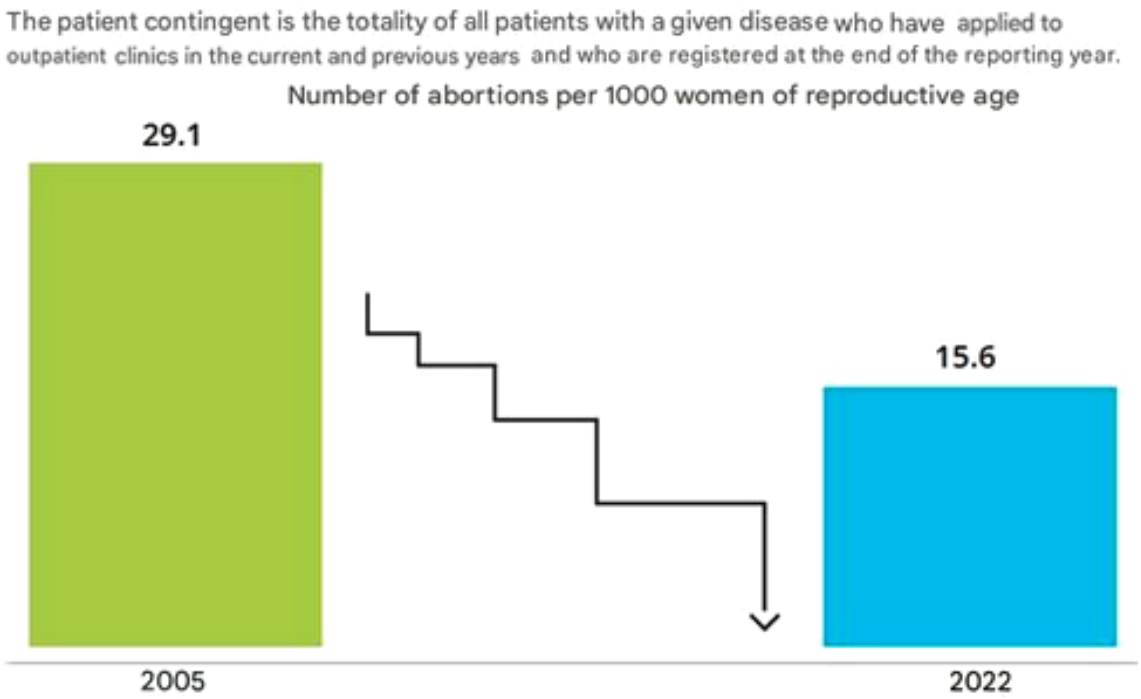


Figure 16. *Number of abortions*

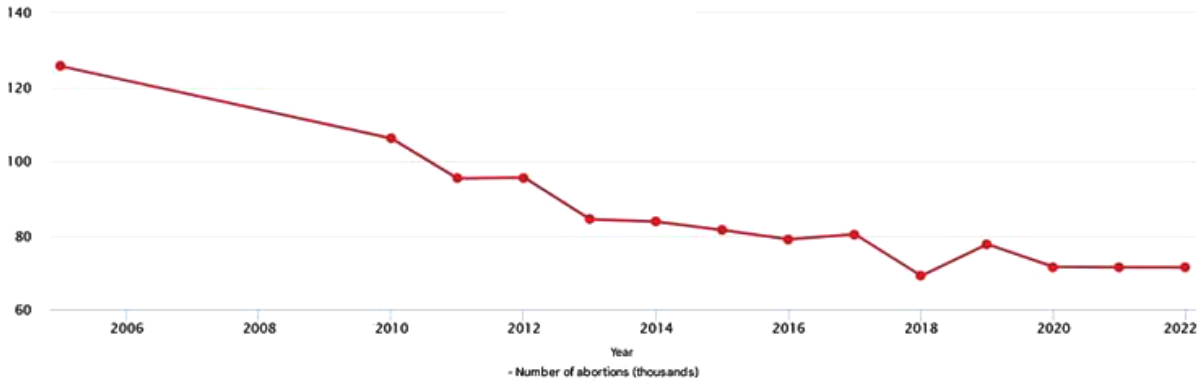
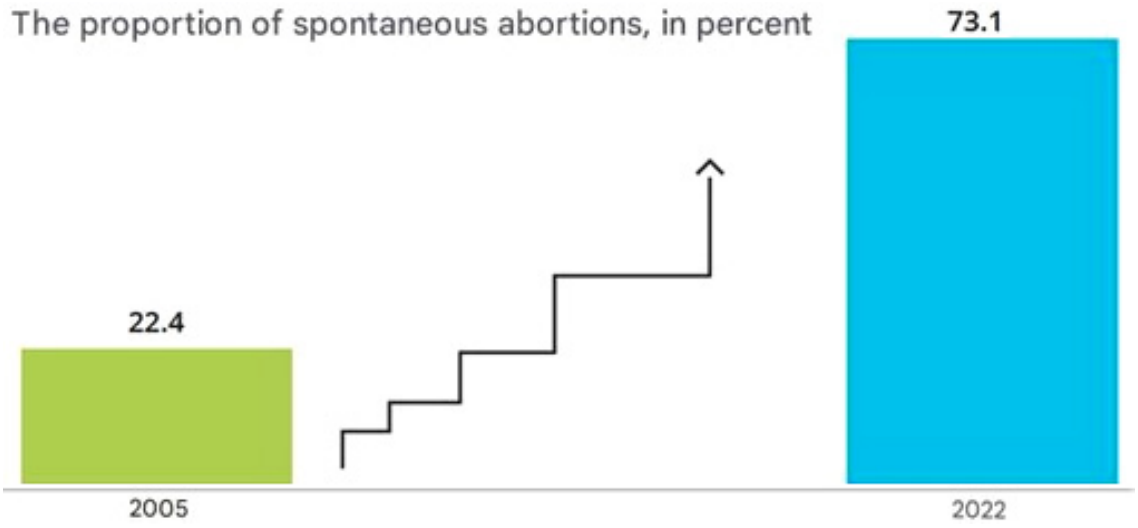
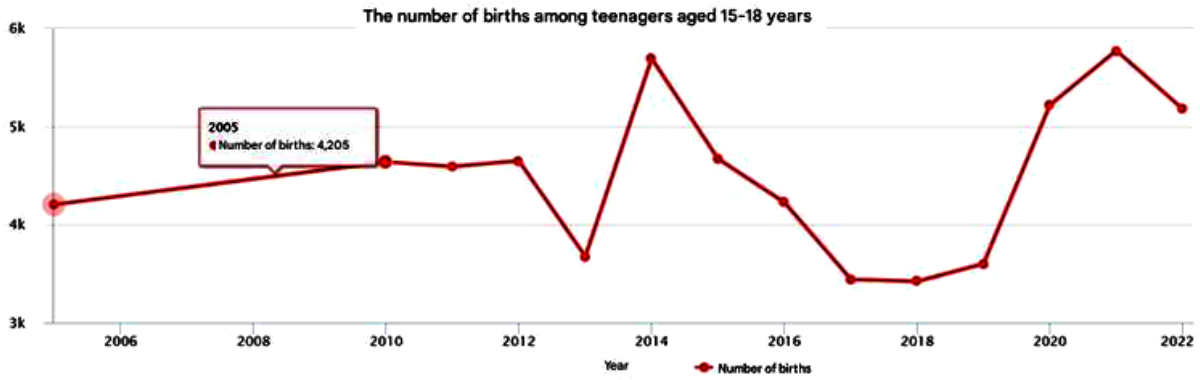


Figure 17. *Miscarriages*



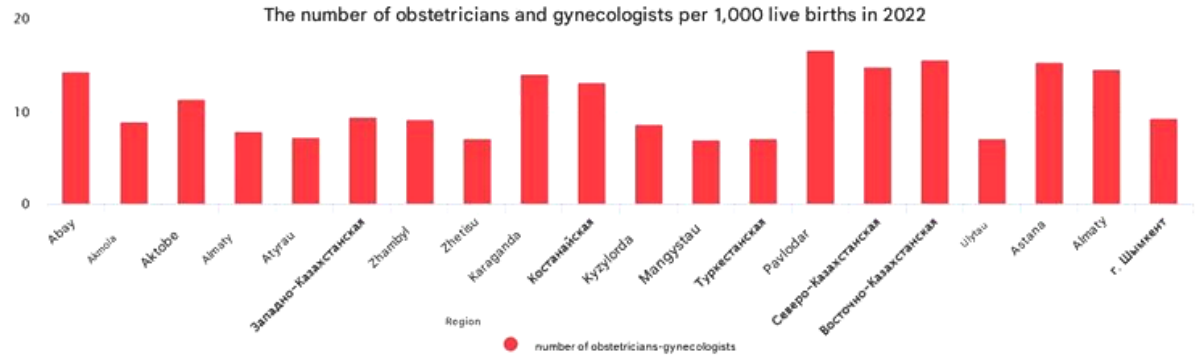
The number of doctors is all doctors with higher medical education employed at the end of the year in healthcare, health care, social welfare, medical research, and training institutions, as well as in healthcare agencies, and elsewhere. The number of doctors includes individuals, not the number of positions held by doctors.

Figure 18. *Teenage Births*



The number of mid-level medical personnel includes all individuals with a secondary medical education (except dentists) employed in medical and sanitary organizations, social welfare institutions, preschools, schools, orphanages, and other institutions (paramedics, midwives, nurses, and others).

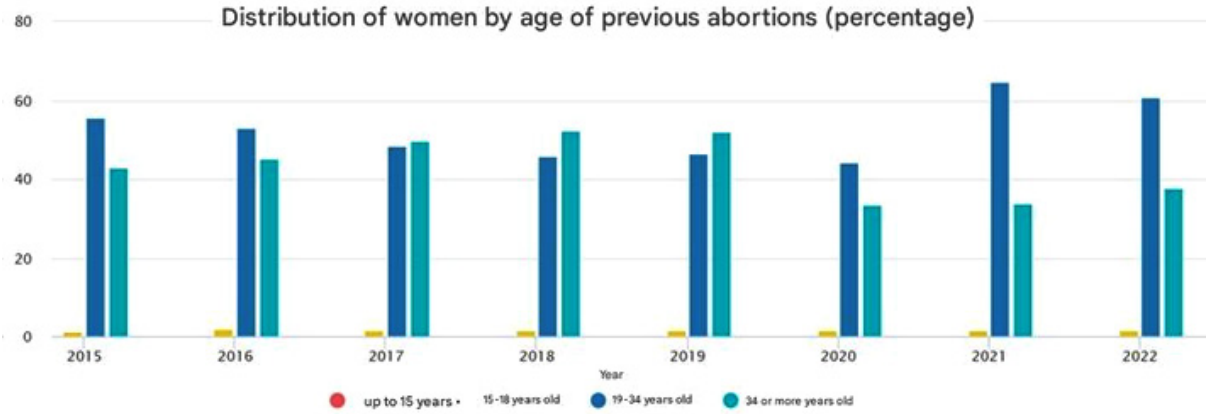
Figure 19. *Number of midwives per 1,000 births*



The network of medical organizations includes hospitals, outpatient clinics, emergency medical care organizations, and maternal and child health organizations of all types.

Medical organizations providing outpatient care to the population include all medical organizations that provide outpatient services (clinics, outpatient clinics, dispensaries, outpatient departments of hospitals, medical health centers, and others). Along with regular hospitals and clinics, information is included on balneological clinics (mud baths), resort clinics, and balneophysiotherapy clinics. Information is also included on medical units, i.e., comprehensive treatment and preventive organizations designed exclusively, or primarily, to provide medical care to employees of industrial enterprises and transport organizations, which may include a clinic, hospital, workshop health center, and other healthcare organizations.

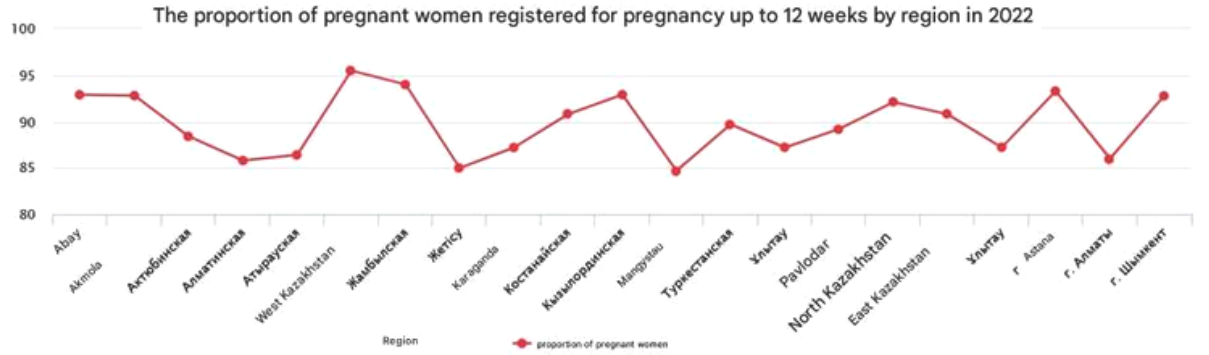
Figure 20. *Distribution of women by age of previous abortions*



Hospitals provide medical care to hospitalized patients. Hospitals are required to record the number of beds available at the end of the year that are equipped with the necessary equipment and ready to receive patients, regardless of whether they are occupied by patients.

The incidence rate is determined by the ratio of the number of patients with a newly diagnosed disease to the average annual resident population. The resulting figure is multiplied by 100,000. The International Statistical Classification of Diseases and Related Health Problems (ICD-10) is used for statistical compilation of population morbidity data.

Figure 21. *Pregnant women up to 12 weeks*



The number of patients with specific diseases registered in medical and preventive institutions at the end of the year represents the total number of patients with a given disease who visited outpatient clinics in the current and previous years. The prevalence rate is calculated by dividing the number of all patients with a given disease registered in medical institutions at the end of the reporting year by the resident population at the end of the year. The resulting figure is multiplied by 100,000.

Table 2. *Abortions*

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Number of aborting	125.6	106.1	95.3	95.6	84.3	83.7	81.4	78.9	80.3	69.1	77.6	71.5	71.4
The proportion of spontaneous abortions, in percent	22.4	42.9	47.2	44.9	528	52.3	59.5	61.4	64.4	67.8	68.5	73.4	73.4

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Number of abortions per 1.000 women of reproductive age	29.1	23	20.7	208	18.4	18.3	17.9	17.3	8.9	15.2	17.1	15.7	15.7
Number of abortions per 1,000 live births (live and Stillborn)	44.3	28.5	25.0	24.6	21.6	20.7	20.2	19.4	20.3	20.1	19.3	16.6	15.9

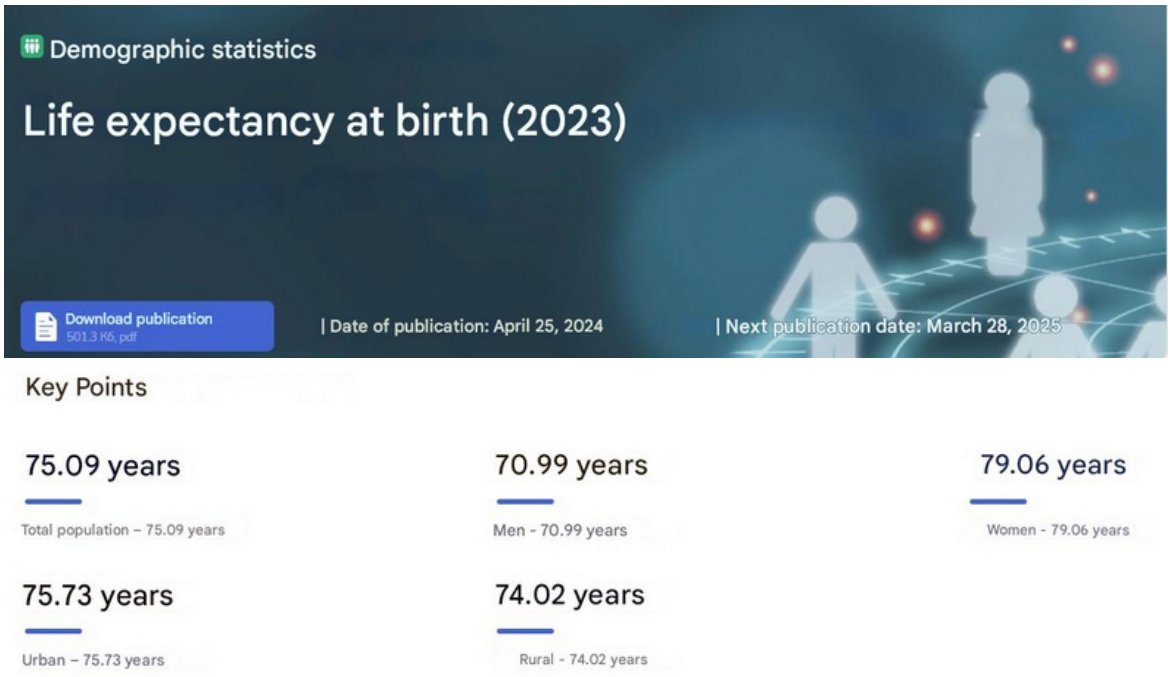


Figure 22. *Life expectancy at birth of the population*

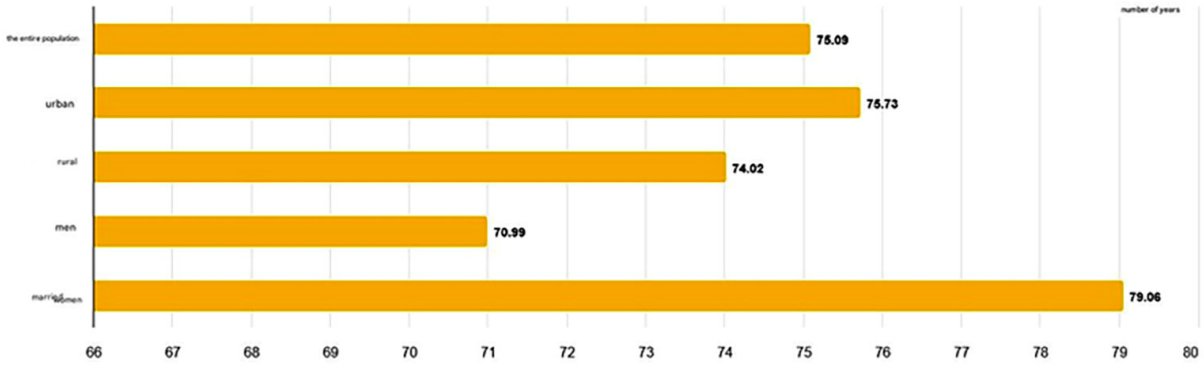
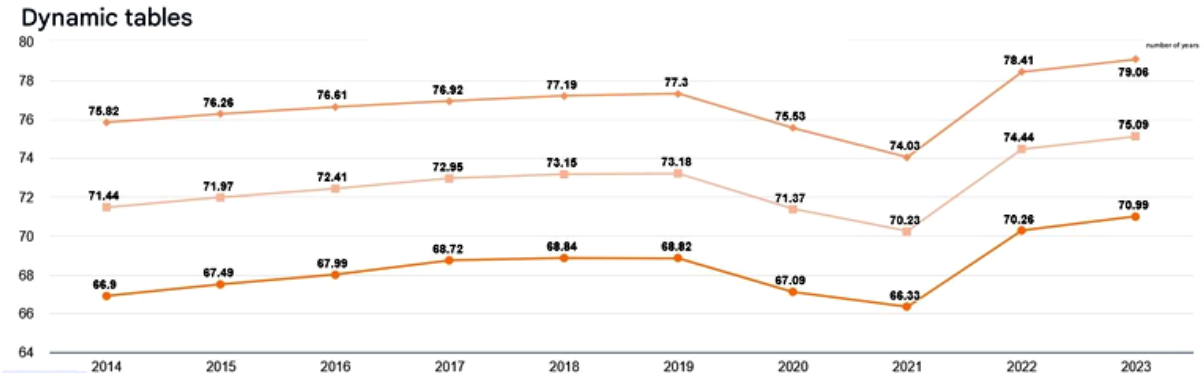


Figure 23. *Dynamics of life expectancy at birth of the population*



Situation for January-April 2024

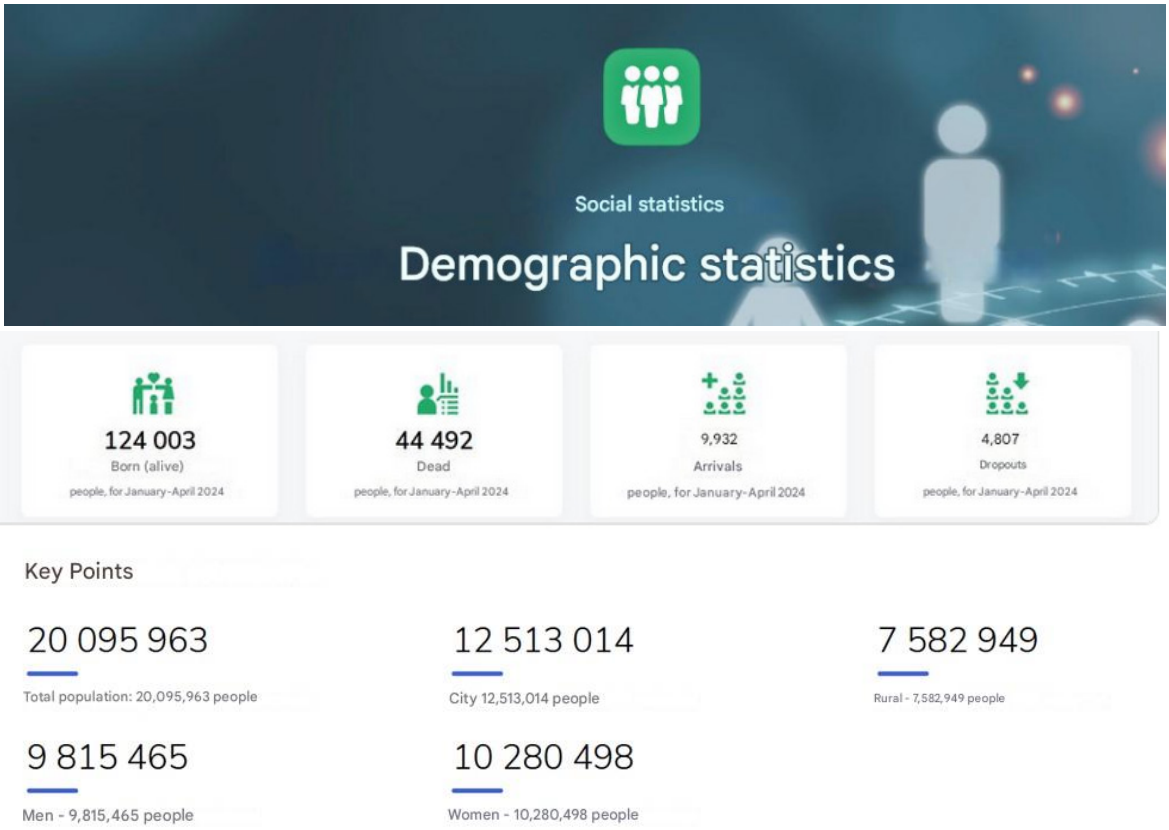


Figure 24. *Population by gender and type of area as of April 1, 2024*

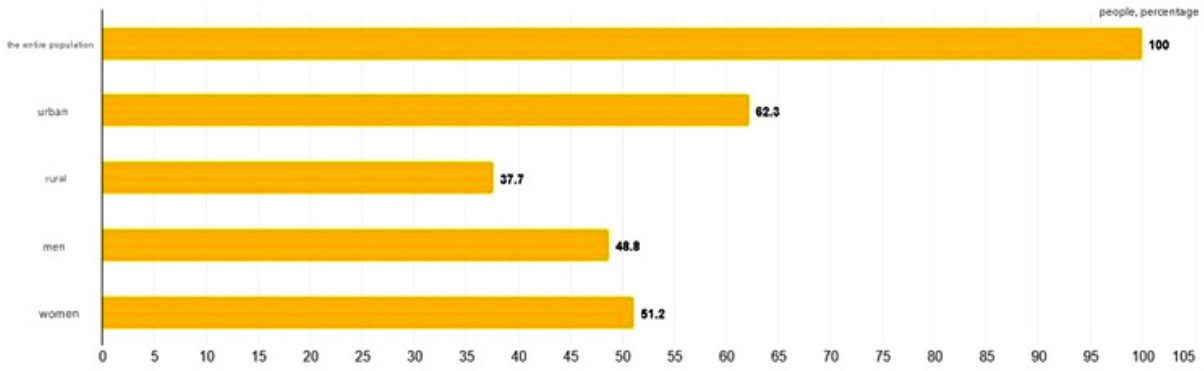
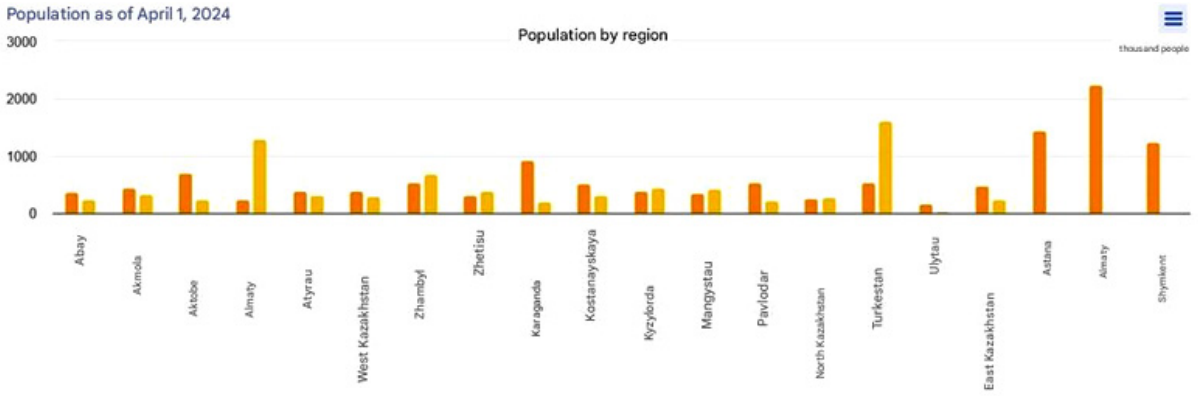


Figure 25. *Population by region*



The dynamics of the number of registered marriages in the republic from 2017 to 2020 shows a moderate decline. The highest number of registered marriages was recorded in 2017, at 141,791, while the lowest was recorded in 2020, at 128,839 marriages nationwide. Regionally, the decline in marriage rates over this five-year period persisted in all regions. **Despite the overall decline in the marriage rate, the city of Almaty maintained a high marriage rate in 2018, 2019**, 2020, and 2021, followed by the Almaty and Turkestan regions and the city of Astana. Despite the decline in marriages nationwide, the marriage rate in these regions remains relatively high. Thus, statistics on the total number of marriages for each year show a gradual decline in this indicator, although in several regions the marriage rate remains high. The lowest marriage rate in five years 6n 2020 is explained by the impact of the COVID-19 pandemic on public life, including marriages. In this case, the 7.6% decline in the marriage rate is attributed to factors such as lockdowns, slowdowns in public services, and restrictions on weddings. Other factors driving the decline in marriage in Kazakhstan may be socioeconomic and demographic. In rural areas, the primary factor is likely economic, as there is a significant disparity in urban and rural development. It should be noted that low employment and low incomes remain pressing issues in rural areas.

Currently, Kazakhstan has nearly 6,500 villages with populations of 500 or more, many of which lack schools, paramedic services, or high-quality, safe roads. All this is leading to dissatisfaction with living conditions and, consequently, the migration of young people to cities where there are more jobs.

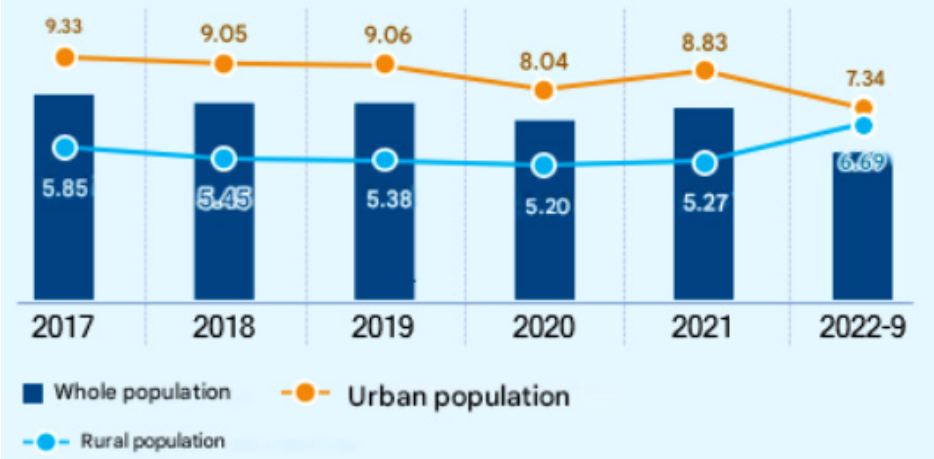
Figure 26. *Number of registered marriages in the Republic of Kazakhstan, distribution by type of settlement*

Souse: BNS ASPR PK

One of the key trends over the five-year period is the stability of the marriage gap between urban and rural areas. Since 2020, the marriage rate in urban areas has decreased from 9.06 to 8.04. This indicator is less noticeable in rural areas, as the level of pandemic control is weaker than in urban areas.

In terms of marriage rates, four regions showed higher values than the national average in 2021. The leaders are cities with over a million inhabitants: Astana and Almaty, with rates of 10.1 and 9.4, respectively, as well as the Atyrau and Mangystau regions, with marriage rates that vary widely – 7.86 and 7.72. **There has been a decrease in the marriage rate over 5 years from 7.86 per 1000 people (2017) to 7.38 per 1000 people (2021).**

Figure 27. *General marriage rate in the Republic of Kazakhstan, distribution by type of settlement, per 1000 people*



Souse: BNS ASPR PK

Marriage rate

Table 3. *General marriage rate in the Republic of Kazakhstan, per 1000 people**

	2017	2018	2019	2020	2021	9 months 2022
Republic of Kazakhstan	7.86	7.54	7.54	6.87	7.38	6.69
Akmola region	7.09	6.47	6.47	5.83	6.38	6.28
Aktobe region	7.86	7.57	7.61	7.29	7.37	6.70
Almaty region	7.48	6.94	6.94	6.27	6.68	7.09
Atyrau region	8.04	8.02	7.74	7.54	7.86	6.82
BKO	7.3	6.82	6.76	6.27	6.81	6.73
Zhambyl region	7.02	7.03	6.92	6.69	6.52	6.18
3KO	7.74	7.51	7.18	6.78	7.02	6.39
Mangystau region	8.48	8.29	7.83	7.09	7.72	6.82
Karaganda region	7.94	7.84	7.52	6.83	7.2	7.24
Kostanay region	6.85	6.5	6.34	5.48	6.24	6.57
Kyzylorda region	7.26	7.27	7.3	7.28	7.19	6.19
Pavlodar region	7.47	7.12	6.95	6.48	6.94	6.46
CKO	6.83	6.48	6.25	5.37	6.5	6.96
Turkestan region	7.26	6.73	6.97	6.63	6.75	6.40

	2017	2018	2019	2020	2021	9 months 2022
Abay region	–	–	–	–	–	6.29
Zhetisu region	–	–	–	–	–	6.41
Region Улытах	–	–	–	–	–	6.64
Astana	11.45	10.81	10.22	9.13	10.1	8.42
Almaty	9.67	9.27	9.46	8.13	9.4	6.54
Shymkent	6.89	6.89	8.03	6.46	7.21	6.16

** Here and below, data on the regions of Abay, Zhetisu, Ulytau, have been added only for a period of 9 months, since in accordance with the Decree of the President of the Republic of Kazakhstan dated May 4,2022 No. 887, these regions were created in the second half of 2022*

Source: BNSASPRPK

At the end of 2021, positive dynamics, albeit slight, were recorded in the "number of registered divorces" and "divorce rate" data.

Since the early 2000s, the most common marriage duration among divorcing couples, or the most vulnerable period for married couples, was 5 to 9 years of marriage; this period consistently accounted for a high proportion of divorces – up to 30%. Since 2021, the trend has shifted slightly, with marriages between 1 and 4 years accounting for 29.2% of the total, while 5 to 9 years represents 26.3% of the total.

There are approximately 520,986 single-parent households in Kazakhstan, including 452,730 families consisting of single mothers and 68,256 families consisting of only fathers with children.

Family breakdown is currently a pressing problem in modern society. Experience shows that the life and conditions of raising a child in a single-parent family differ significantly from those of a child in a two-parent family. Due to the absence of one parent, a single parent must deal with the family's financial and everyday needs. The most pressing problem remains financial, which almost every single-parent family faces.

Divorce in Kazakhstan

Figure 28. *Number of registered divorces in the Republic of Kazakhstan, distribution by type of settlement*

Souse: BNS ASPR PK

The absence of one parent can lead to unsuccessful and inadequate upbringing of a child (children). This is explained by excessive workload, which prevents them from devoting sufficient attention to their children. Another problem in single-parent families

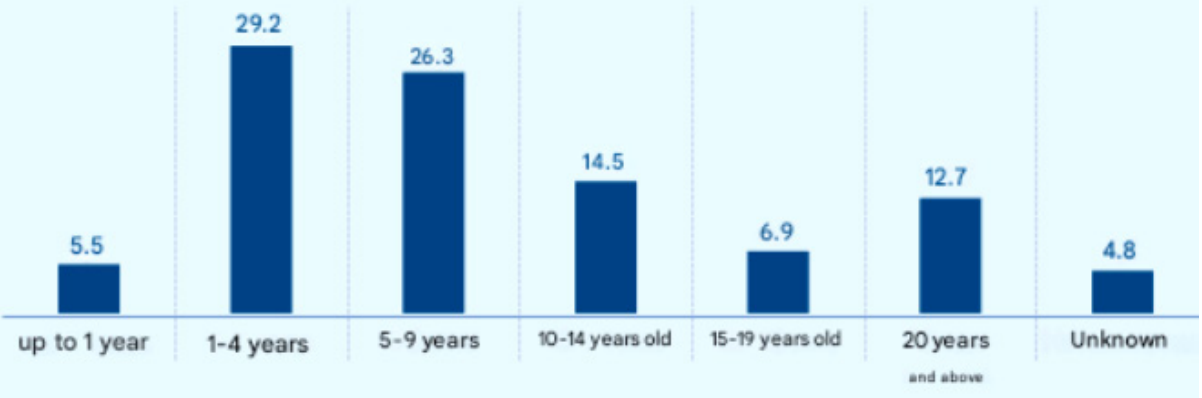
that requires attention is the quality of children's health. A woman raising a child alone is primarily forced to care for the family's financial well-being, relegating her immediate responsibilities for raising and promoting the children's health to the background. A child raised in such a family has the same potential for development and success as a child in a two-parent family, but it is important to minimize obstacles and create additional conditions from the state.

From an economic perspective, if the divorce rate is correlated with the annual increase in GDP per capita, the national average has been declining positively over the past two years.

Over the past five years, the divorce rate has been declining. Thus, while in 2017 this rate was 3.03 per 1,000 people, in 2021 it dropped to 2.54 per 1,000 people. The highest divorce rates, according to 2021 data, were recorded in Astana, Pavlodar, Karaganda, and North Kazakhstan regions.

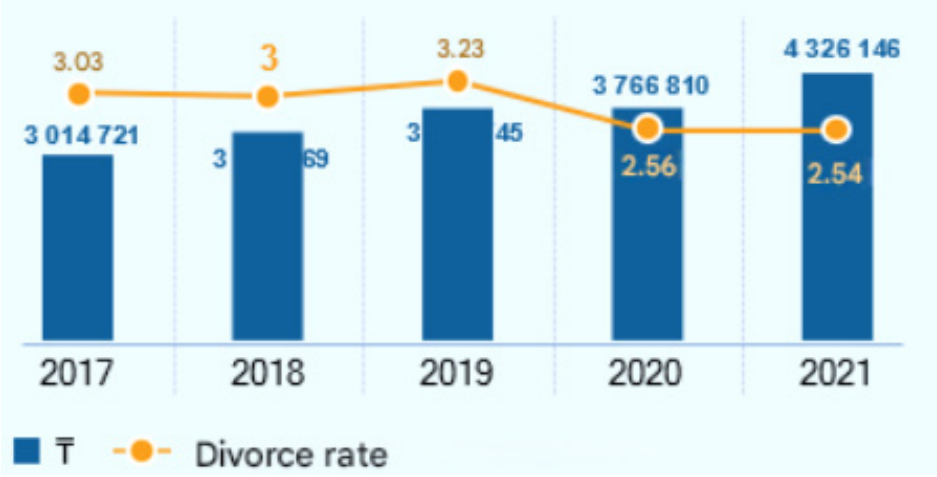
Decrease in the divorce rate

Figure 29. *Number of divorces, distribution by duration of marriage in 2021, %*



Souse: BNS ASPR PK

Figure 29. *Dynamics of changes in GDP per capita and divorce rate in Kazakhstan*



Souse: BNS ASPR PK

Divorce rate in Kazakhstan

Table 4. *General divorce rate in the Republic of Kazakhstan, per 1000 people**

	2017	2018	2019	2020	2021	9 months 2022
Republic of Kazakhstan	3.03	3.00	3.23	2.56	2.54	0.92
Akmola region	3.57	3.41	3.88	3.13	2.76	1.25
Aktobe region	3.06	2.75	3.05	2.27	2.68	0.78
Almaty region	2.78	2.8	3.28	2.52	2.43	0.97
Atyrau region	2.39	2.38	2.32	2.05	2.11	0.72
BKO	3.64	3.35	3.45	2.9	3.06	1.47
Zhamby region	2.25	2.31	2.78	1.98	2.28	0.73
ЗКО	3.09	3.07	3.41	2.91	2.68	0.84
Karaganda region	3.81	3.74	3.91	3,33	3.43	1.43
Kostanay region	3.72	3.64	3.9	3.07	2.8	1.19
Kyzylorda region	2.23	2.17	2.59	2.02	2.08	0.44
Mangystau region	2.33	2.24	2.49	1.96	1.84	0.61
Pavlodar region	4.19	4.19	4.24	3.61	3.51	1.40
СКО	3.58	3.79	3.61	3.55	3.28	1.30
Turkestan region	1.55	1.59	1.76	1.31	1.2	0.32
Abay region	–	–	–	–	–	0.95
Region Zheticx	–	–	–	–	–	0.89
Region Улытах	–	–	–	–	–	1.00
Astana	3.66	3.84	4.11	3.61	3.54	1.12
Almaty	3.8	3.8	3.87	2.71	2.64	1.12
Shymkent	2.58	2.61	2.78	1.87	1.98	0.59

On average, 140,000 families are created annually in the country, of which 50,000 end in divorce. The reasons for this are varied, ranging from financial and material issues to emotional and personal problems. The divorce rate of all registered marriages was 34.4%.

It should also be noted that early marriages (up to 1%) are widespread in Kazakhstani society, although they are not legally permitted. Early marriages represent a very complex problem. The driving force and root cause of these marriages is a lack of understanding of the importance of education and the social role of girls, which should not be limited to housework and child-rearing. Combined with social isolation, "traditions," poverty, and other factors, including geographic isolation, early marriages of underage girls embody and perpetuate a vicious cycle of gender discrimination and the marginalization of women.

One important indicator of the effectiveness of family policy implementation worldwide is the reduction of maternal and infant mortality. According to the National System of Assistance to Children and Youth of the Republic of Kazakhstan, infant mortality rates, despite the measures taken, have been steadily increasing over the past five years, with the exception of 2020. The maternal mortality rate is also rising. While it was 14.8 in 2017, it reached 44.71 in 2021, representing a more than threefold increase.

This is certainly not a complete list of trends in marital relations in the country, but this brief overview is sufficient to understand that marital and family relationships are fluid and constantly evolving. Their development

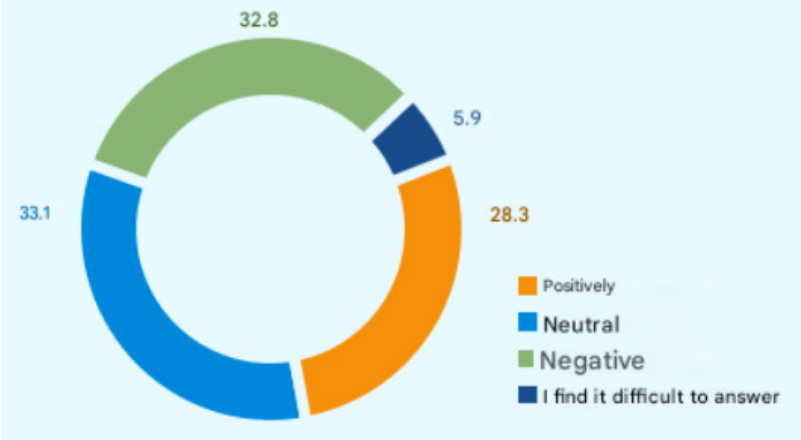
can be influenced by both socioeconomic and political-demographic factors.

In recent years, there has been a trend toward the prevalence of unregistered or so-called "common-law" marriages. Couples in these relationships do not formally share responsibilities between themselves or among family members. The results of a sociological study conducted by the Institute of Social and Economic Research (KIOR) showed that respondents were divided into three almost equal groups regarding their attitudes toward common-law marriage: positive, negative, and neutral.

It should be noted that with increasing age, people exhibit a more positive attitude toward this phenomenon, with the exception of those over 61 years of age. This is supported by the results of the sociological study, which found that the categories "young people" and "retirees" were more opposed to common-law marriage than those aged 29 to 60. On average, while approximately 25% of respondents expressed a positive opinion and more than 30% of respondents expressed a neutral opinion, the opinions of all respondents were negative.

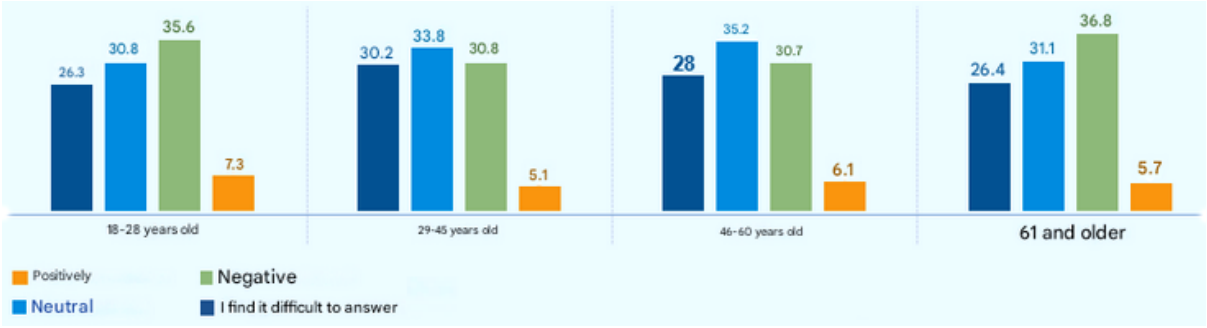
Attitude towards «civil» marriages

Figure 30. *Attitude of Kazakhstanis to "civil" marriages, %*



Souse: Sociological research KIOR

Figure 31. *Attitude of Kazakhstanis to the phenomenon "civil marriages", %*



Souse: Sociological research KIOR

Age groups are neutral about common-law marriage, meaning that in Kazakhstani society, one in five marriages may be unregistered.

Thus, as the survey data shows, common-law marriage is viewed positively among the respondents in the 29–60 age group. Adults of retirement or pre-retirement age have traditional attitudes toward family. This generation typically views a family as one registered with the Civil Registry Office (ZAGS) or the Civil Registry Office (RAGS), a so-called official marriage. As a rule, the older generation is oriented toward traditional family values – marriage between a man and a woman, choosing a partner from an endogamous group, and a complete family with a patriarchal orientation. In this context, variability in

attitudes toward common-law marriage, in addition to age, may depend on factors such as education, geographic location, ethnicity, and so on. Thus, according to the survey results, the negative attitude towards civil marriages among Kazakhs is twice as high as among Russians, and a quarter higher than among other ethnic groups.

Research Results

The analysis revealed that Kazakhstan's demographic development is characterized by several stages. In the 1990s, a population decline was observed due to migration outflow and declining birth rates. Subsequently, beginning in the 2000s, the population stabilized and grew.

Current trends include:

- population growth and positive natural increase;
- changing ethnic structure with an increasing share of indigenous people;
- active urbanization processes;
- declining birth rates in the 1990s followed by stabilization;
- high mortality rates among the working-age population and gender differences in life expectancy;
- transformation of marital and family relations, including a decline in marriage and an increase in divorce;
- the spread of alternative forms of family relations. Demographic processes are particularly influenced by socioeconomic conditions, healthcare levels, urbanization, and the COVID-19 pandemic, which has led to temporary changes in marriage and mortality rates.

Conclusion

Thus, the demographic development of the Republic of Kazakhstan is complex and multifaceted. Current trends indicate population stabilization, but challenges remain related to mortality, public health, the transformation of the family institution, and regional disparities. Effective demographic policy should aim to improve the quality of life of the population, support families and motherhood, develop the healthcare system, and regulate migration.

References:

National Demographic Priorities: Approaches and Implementation Measures. Series "Demography. Sociology. Economics". – Vol. 5. – No. 4 / edited by S. V. Ryazantsev, T. K. Rostovskaya. – Moscow: Ekon-Inform, 2019. – 558 p.

Borisov, V. A. Demography. – Moscow: NOTABENE, 2001. – 272 p.

Shcherbakov, A. I., Mdinaradze, M. G., Nazarov, A. D., Nazarova, E. A. Demography: Textbook / edited by A. I. Shcherbakov. – Moscow: INFRA-M, 2017. – 216 p.

National Development Plan 2029: Kazakhstan's Demographic Focus // DKNews.kz. – 2024. – Feb 22. URL: https://dknews.kz

Ethnic Composition of the Population of the Republic of Kazakhstan Based on the 2021 Census // Bureau of National Statistics of the Republic of Kazakhstan. URL: https://stat.gov.kz

Serikbayeva A. The World is Gradually Approaching the Highest Number of Young People // Kazakhstanskaya Pravda. 2024. – Feb. 14.

Kazakhstan's Population Has Noticeably "Grown Younger" // Turan Times. 2023. – May 31. URL: https://turantimes.kz

Kazakhstan's Population Announced Based on the Census // KT.kz. 2022. – Sept 1. URL: https://www.kt.kz

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Section 2. General pedagogy

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ENHANCING EMPATHY IN LEARNING ENVIRONMENTS THROUGH POWERFUL TED TALKS

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Abstract

The general concern of the article is that empathy is a crucial component of intercultural competence and an exemplary quality to cultivate in learners and educators in foreign language education. The specific problem addressed in the study was lack of attention to, and the limited research on, the incorporation of empathy into the academic curriculum of Uzbekistan State University of World Languages and the Tashkent State Pedagogical University for the training of English language specialists. The research analyzes approaches to and defines the nature of the phenomenon empathy together with the importance of its cultivation as presented in foreign pedagogic literature. The purpose of the investigation is to disclose the deficit of empathy and the reasons for this in Uzbek language educational programs.

Keywords: *education, empathy, empathic competence, emotional intelligence, ability, attitude, TED Talks, intercultural*

Introduction

In a world which is becoming more complex and diverse than ever, where cross-cultural hostility and intolerance is an overriding social problem destroying humanity globally, *empathy* has become a paramount need in society and a primary concern in education. Empathic competence should be given particular attention while training foreign language specialist (teachers, translators and editors) as they must be able to recognize and accept cultural diversity, to promote tolerant and empathic social environment within and outside the classroom. So, the main focus of the study is *empathy* as an essential but neglected aspect of intercultural elements in English language education in Uzbekistan and the failure to address adequately complex multilingual and multicultural environments (Makhkamova, 2017). The study discusses the beliefs, experiences and meanings associated with significance of empathic skills of teachers and students. It attempts to analyze the factors impeding the development of empathic ability and offers some advice on how to incorporate empathic strategies into the classroom, to create a more empathic envi-

ronment, and to encourage both teachers' and students' long-term empathy growth.

Empathy and the importance of its cultivation.

The concept of 'empathy' has various definitions. Empathy is commonly defined as imaginative intellectual and emotional participation in other peoples' experience (Bennett 1998, p. 207), or the act of perceiving, understanding, experiencing, and responding to the emotional state and ideas of another person (Eriksson & Englander, 2017). Imaginative intellectual activity can be obtained through informed presuppositions, in other words admitting others' national specificities of the world picture. As mentioned by Brown (1994), both learners and teachers of a second language need to understand cultural differences, to **openly acknowledge** that everyone in the world is not "just like me", that people are not all the same beneath the skin (p. 167). That is why empathy contains two distinct components: 1) from the cognitive view it is the ability to understand how other people may be affected by a situation, as well as understanding that there may be other perspectives on a situation, and 2) from emotional or affective position it is feeling compassion for another and having the motivation to understand that person in a new way (Galinsky & Moskowitz, 2000). Moreover, from pragmatic point of view an empathy is considered as a way of semantic organization of the interaction through verbal and nonverbal means. The empathic action itself performs emotional and sensual function, exactly, when someone wants to express concern, compassion, tolerance, or equality and balance with partner. That is why, it is dealt with as illocutionary and perlocutionary acts to have communicative effect for performing intention and achieving result of communication through certain verbal and behavioural patterns.

TED talks as an effective tool for cultivating empathic competence of future EL teachers

There is a course of "Teaching Intercultural Communication" in the curricula of Uzbekistan State University of World Languages and Tashkent State Pedagogical University which aims at the development of intercultural competence of the 2-year students, where the teachers focus on development of empathic competence in the attitudinal component. However, analysis of the reviewed data generated our keenness as English language teachers to explore possible practical strategies to integrate empathy into the module of "Integrated skills" (the practical course for language proficiency development at the C1 level). Setting in the 'Integrated skills' classroom itself has great potential to create conditions for personal and cultural development of students through the implementation of the well-known idea of 'dialogue of cultures. In the present study, we conducted empirical research to reveal the effectiveness and reliability of the renowned TED public talks related to empathy and compassion as technology for raising university students' empathic competence at English lessons as "Integrated skills".

Methodology of experimental research: implications and discussion

The study was carried out over two academic semesters (September-June 2022–2023). A total of 100 students, boys and girls of different nationalities (Uzbek, Russian, Tatar, Korean, Kazakh), took part in the study. All participants were the sophomores of the Uzbek State University of World languages, English philology faculty, within the age range of 19 to 23 years. They were informed that neither participation nor non-participation in the research would influence their grades; an informed consent being taken from each participant. The volunteers were also made aware that they could drop out as research participants at any stage of the study, without the need to explain.

The experiment consisted of 3 stages:

1. Empathetic awareness

At the preliminary stage, participants were asked to complete the following survey:

1. What is empathy?
2. Why is empathy important in society?
3. Why is empathy important in education?
4. What are the characteristics of empathic teachers?
5. Why is empathy particularly important in language education?
6. Is there an empathy deficit in language education? If yes, what might be the reasons for it?

7. Do you consider yourself an empathic person? Why?
8. Would you like to increase your empathy level?

Summarizing the obtained data, we traced a noticeable similarity in the responses for the first five items. This fact is probably due to homogeneity of respondents in terms of age, occupation and relatively similar cultural background. Only 35% of participants appeared to have awareness of empathy and considered it to be an important aspect in both society and education and particularly in language education, pointing out that communicative competence is a central goal in language classrooms while 'rapport' 'meaningful high-quality relationships', 'emotional security', 'psychological comfort', 'respect, trust and responsiveness' are vital for successful learning and personal development. The rest (65%) revealed little understanding of the notion of empathy as well as its role in society.

2. Methods of experimental teaching

At the first week of the experiment the students were introduced to a brief module on '*Empathic competence*' including the definition of the concept, and components of empathic competence**.** Further, throughout the semester the learners were exposed to a variety of tasks and activities developed by educators (Everhart et.al. 2016; Gray 2018) and those based on the watched 21 TedTalks intended to raise empathy awareness and develop empathic skills.

1) 'Emotional Vocabulary'. The first and foremost component of developing emotional intelligence in English lessons is working with emotion-related vocabulary. Students need to learn different words and expressions that will help them to accurately describe their feelings and understand the emotional state of others. Within three minutes students are asked to write down words, expressions, that allow them to precisely express their feelings in two columns: positive – negative. Once finished the instructor interprets their results. Students who wrote:

– more than 30 words are more likely to convey their feelings to others as well as to be understood by others;

– about 20–25 words – they can express their feelings in a variety of ways, but need practice;

– less than 10 words – they need to develop their ability in expressing their emotions.

Which column chosen, positive or negative, also characterizes an individual's personality, mindset and attitude to life. And finally, any volunteer students are tasked to imagine themselves being the narrator and express the emotions and describe COMMUNICATIVE BEHAVIOR they had while going through the experience they shared, i.e., to project the speaker's feeling into themselves.

2) Another activity that develops out sight is having students analyze and share with the class the speaker's performance on the following dimensions in terms of how these all contributed to creating a particular emotional and communicative behavior impact on the listeners:

1. Outfit
2. Mood
3. Eye contact and interaction with the audience
4. Tone of the speaker (passion)
5. Pace of speech.
6. Posture
7. Language

3) Besides this, students, in groups of ten, were tasked to make project works named "Empathy is our Superpower!" and present them at the conference 'Innovative and integrative problems of developing foreign languages in a multilingual environment" as well as submit their articles devoted to the topic.

3. Empathy assessment test

At the end of the semester, students took a test measuring a person's empathy across four domains: physical, cognitive, emotional, and intuitive. The IDRlabs What Kind of Empath Are You? (IDR-WKEY) is based on the work of Dr. Darrick Jolliffe and Dr. David P. Farrington, the designers of the Basic Empathy Scale – BES (https://www.idrlabs.com/4-empathies/test.php). They were also asked to reflect on paper on whether, how, and why their perspective on empathy and empathic skills had changed over the semester. The effectiveness of the experimental work was proved by means of comparative analysis of the data obtained at the initial and fi-

nal stages. The test scores, as expected, were significantly higher than those of the primary survey, particularly in cognitive and emotional domains. The results showed a positive growth of students' interest in the development of empathic competence, since at the beginning of the semester the level of awareness was in the range of 35%, while at the end of the course it reached 95%. In the self-reflective essays the students admitted that in the process of this work, they developed a set of such skills as 'creativity, co-operation, communication, mindfulness and information processing".

Conclusion

The current research carried out in the context of Uzbekistan language university, many of the issues that the teachers and students faced in this instance are relevant to other types of the educational establishments. Overall, the proposed TED Talks as a way of developing empathic competence of future FL specialists in this study proved to be tangibly effective. At the same time, the presented techniques for increasing empathy and assessing empathic competence of university students are not exhaustive, but rather, hopefully, provide a useful resource and manual for ourselves and others involved in related fields of study. We suggest that modules or courses related to empathy cultivating should become a standard part of curriculum of FL specialists training to improve FL education. The achieved results in evaluating and cultivating empathic competence have only strengthened our view of the need to broaden discussion and specification of structural elements of empathic competence, as well as to involve large scale groups from other language universities into empirical study.

References

Bennett, M.J. (1997). Overcoming the Golden Rule: sympathy and empathy. Bennett M. J. (ed.). Basic concepts of intercultural communication. Selected Readings. Intercultural Press, Inc.

Brown, H.D. (2007). Principles *of* Language Learning and Teaching. Pearson Education, Inc.

Byram, M. & Morgan, C. (1994). Teaching-and-learning-language-and-culture. Clevedon. Philadelphia, Adelaide: Multicultural matters Ltd.

Eriksson, K. & Englander, M. (2017). Empathy in Social Work. *Social Work Education,* – 53. – P. 607–621.

Galinsky, A. D. & Mosko- witz, G. B. (2000). Perspective-taking: decreasing stereotype expression, stereotype accessibility, and ingroup favoritism. *Journal of Personality and Social Psychology*, – 78. – P. 708–724.

Gerdes, K.E. & Segal, E. (2009). A Social Work Model of Empathy. *Advanced Social Work,* – 10. – P. 114–127.

Gray, D. (2018). Updated Empathy Map Canvas. The XPLANE Collection.

Mayer, J.D. & Salovey, P. (1997). What Is Emotional Intelligence? In: Emotional Development and Emotional Intelligence: Educational Implications. New York, NY, USA: Basic Books. – P. 3–34.

Makhkamova, G.T. (2010). Kontseptsiya formirovaniya mejkulturnoyi kompetentsii studentov fakultetov angliyiskogo yazika. Monograph. Tashkent: FAN.

Makhkamova, G.T. (2017). Intercultural communication. – Tashkent: Tamaddun.

Rogers, C. (2014). On becoming an effective teacher: person-centered teaching, psychology, philosophy, and dialogues with Carl R. Rogers and Harold Lyon. H. C. Lyon & R. Tausch (eds.). – New York: Routledge.

Succi, C. & Canovi, M. (2020). Soft skills to enhance graduate employability: Comparing students and employers' perceptions. *Studies in Higher Education,* – 45(9). – P. 1834–1847. Doi:10.10-80/030750-79.2019.1585420

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DIDACTIC POSSIBILITIES OF THE INTERNET IN TEACHING A FOREIGN LANGUAGE

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Abstract

The use of services provided by the global information and communication network Internet in the pedagogical process is undoubtedly an innovative technology. The emergence of the Internet as another powerful tool in education stimulates the desire of children to learn, expands the area of individual activity of each student, increases the speed of providing high-quality material in one lesson.

Keywords: *communicate knowledge, economic development, moral values of society, Internet, pedagogical process, innovative technology, teaching tool, information, environment, didactic tasks, features of cognitive activity*

Introduction

Today everyone understands that the Internet has enormous information capabilities and equally impressive services. But we must not forget that, no matter what properties a particular teaching tool, information and subject environment may possess, didactic tasks and features of cognitive activity of students determined by certain educational goals are primary. The Internet, with all its capabilities and resources, is a means to achieve these goals and objectives. Therefore, first of all, it is necessary to determine for which didactic tasks in the practice of teaching foreign languages the resources and services provided by the worldwide network may be useful.

The main goal is the formation of communicative competence, all other goals (educational, educational, developmental) are realized in the process of achieving this main goal. Communicative competence in its modern understanding provides for the formation of the ability for intercultural interaction (Vigotskiy L. S., 2002. p. 67). Nowadays, this goal is the most demanded by any category of students, students studying a foreign language. Even if the graduate's further specialization is not related to foreign trips or contacts with foreign specialists, the use of the worldwide Internet is becoming an increasingly necessary condition for receiving and transmitting information on any specialty. The main information on the web is in English. However, information and subject environments on the Internet and in other languages are rapidly developing. Modern means of communication with partners, access to information resources

on the Internet presuppose sufficient fluency not only in computer technology, but also in foreign languages.

Method

One more feature of the subject "foreign language" should be kept in mind. It is possible to teach speech activity only in communication, live communication. And for that, you need a partner. A computer program or CD–ROM disc, no matter how interactive they may be, can only provide quasi-communication (i.e., communication with a machine, not with a living person). The exception is computer telecommunications, when a student enters into a live dialogue (written or oral) with a real partner, a native speaker. In addition, communicative competence, as we have seen, is closely related to linguistic, as well as to cultural studies, in particular, to regional studies competence. Definitely, this task is partially solved by selecting the content in textbooks and textbooks. That is why, when preparing for the next lesson, planning a chain of lessons on the topic of oral speech and reading, it is important for the teacher to keep in mind the didactic properties and functions of each of the selected teaching tools, clearly imagining which methodological task a particular teaching tool may be most effective for.

All these are quite obviously different tasks, united, however, by a single learning goal – the formation of communicative competence. Based on the specifics of the subject, knowing the didactic properties and functions of the Internet, its capabilities and resources, we can determine for which didactic tasks certain services and resources on the network can be used. Only after that, it is possible to determine the methodology of their application in the classroom or outside of school hours, in full-time or distance learning.

Result

Direct Internet access in the classroom is practically excluded, since it is hardly possible to find any acceptable number of foreign language classrooms in our schools equipped with a sufficient number of computers with Internet access. Although it should be said that some teachers, having only one computer and Internet access in the classroom, try to use this small opportunity in the classroom. Therefore, we need to look for other ways here. By the way, especially in big cities, one should take into account the fact that many families already have home computers with real Internet access, and the teacher should take this opportunity into account. So, how can you use the opportunities provided by the Internet in foreign language lessons? Let us turn directly to the analysis of these possibilities. However, you will have to take into account the configuration of the computer used for this purpose:

– is the computer equipped with a sound card, sound speakers;

– whether the computer is equipped with a video camera for video conferencing with partners.

As for the sound card, the vast majority of modern computers have it in their configuration or can have it at the user's request. This is not a problem right now, and the cost of the sound card is not high. As for the video card or the recently appearing video phones connected to a computer, in our country it is still exotic, quite expensive and therefore little accessible to the mass of users. Therefore, theoretically (i.e. technically) the task of organizing oral communication with native speakers can be accomplished. In practice, for most users, such a network service is not yet available. From here, we can really rely on the Internet to provide us with text, graphic (static or dynamic) and audio information. It is these Internet capabilities that we will rely on when analyzing possible ways to use the resources and services of the network in foreign language lessons and in extracurricular activities of students (Mayer R. E., 2001.p.34). The rest should be solved by learning technologies. Thus, using the information resources of the Internet, it is possible, by integrating them into the educational process (subject to appropriate didactic interpretation), to more effectively solve a number of didactic tasks in the lesson.:

– develop reading skills and abilities by directly using online materials of varying degrees of complexity;

– improve listening skills based on authentic audio texts on the Internet, also prepared accordingly by the teacher;

– improve the skills of monologue and dialogic utterance based on a problematic discussion of the materials presented by the teacher or one of the students of the network;

– improve writing skills by writing answers to partners individually or in writing, participating in the preparation of essays, essays, and other epistolary products of the partners' joint activities;

– replenish your vocabulary, both active and passive, with the vocabulary of a modern foreign language reflecting a certain stage in the development of the culture of the people, the social and political structure of society;

– to get acquainted with cultural knowledge, including speech etiquette, the peculiarities of speech behavior of various peoples in the context of communication, the peculiarities of culture, traditions of the country of the studied language;

– to form a stable motivation for students' foreign language activities in the classroom based on the systematic use of "live" materials, discussing not only issues related to textbook texts, but also "hot" issues of interest to everyone. It is especially interesting to use Internet materials when working on a project. A teacher can search for various, sometimes even contradictory information on the Web on a problem that is subject to discussion and research in a given period of time.

If we are talking about a kind of generalizing lesson, we can offer short messages on different topics to different subgroups of students. For example, one group on the topic of "Medicine", another on the topic of "Sports", the third on the topic of "Weather", etc. If you plan to work with the text for introductory, viewing or search reading, then the teacher should also find suitable texts on the web in advance. You can use different texts or one for everyone. The texts should be photocopied so that each student in the group receives a copy. Therefore, all the guys and every student in the group are interested in the active activities of each of their fellow group members. Secondly, strong students are always ready to help the weak and help them if necessary. Tasks can be as follows: to draw up a plan of the read text, to come up with a title for the entire text or its individual paragraphs, to answer the questions posed (based on the text), to discuss the problem related to the content of the read text, etc. (Rogova G. V., 2000. p. 49).

Conclusion

Thus, it is only necessary to keep in mind that almost any text for listening needs some processing, adaptation due to its possible reduction. In addition, the text may contain a number of words unfamiliar to this group of students that are difficult to understand even from the context. It is better to write out these words in advance and, if they are significant for further work, combine them into phrases and record them on a tape recorder in the form of a two-stroke paused exercise so that the children can get used to their sound, learn by ear and pronounce correctly. Further work is organized in the usual way according to the teachers' plan. Using authentic Internet materials, it must be remembered that in any case, we are talking about the formation of a communicative competence that presupposes the possession of certain regional knowledge.

References

Andreeva N. V. Computer Technologies in Teaching Foreign Languages: A Textbook. – Kaliningrad: KSU Publishing House, 2002. – 102 p.

Bychkovskaya E. V., Goncharenko A. L. Developing Interest in Foreign Languages among Primary School Students // Foreign Languages at School. 2008. – No. 1. – P. 51–53.

Vygotsky L. S. Preschool Education and Development // Vygotsky L. S. – Moscow: Shalva Amonashvili Publishing House, 2002. – 224 p. (Anthology of Humane Pedagogy).

Gal'skova N. D. Modern Methods of Teaching Foreign Languages. A Teacher's Manual – 3rd ed., revised and enlarged. – M.: ARCTI, 2004. – 192 p. (Method. Library).

Leontiev A. A. Language and speech activity in general and educational psychology: Selected psychological works. – M.: Moscow Psychological and Social Institute, Voronezh: NPO "MODEK", 2001. – 448 p.

Malkina N. A. On the role of visual components of the situation in teaching communication in a foreign language to children of preschool and primary school age // Foreign languages at school. 2008. – No. 6. – P. 22–27.
Negnevitskaya E. I., Shakhnarovich A. M. Language and children. – M., 1981. – 111 p.
Rogova G. V., Vereshchagina I. N. Methods of Teaching English at the Elementary Stage in General Education Institutions. A Handbook for Teachers and Students of Pedagogical Universities. – 3rd ed. – Moscow: Prosveshchenie, 2000. – 232 p.
Hardisty D., Scott Windeatt. Computer Assisted Language (CALL): Resource Books for Teacher. – Oxford University Press. 1989. – 165 p.
Harmer J. The Practice of English Language Teaching. – London and New York: Longman, 1998. – 296 p.

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COMMUNICATIVE LANGUAGE TEACHING VERSUS CONTENT LANGUAGE INTEGRATED LEARNING IN THE FRAMEWORK OF EOP AND EAP

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Abstract

The Uzbek methodology of teaching foreign languages in the nonlinguistic higher schools has been continually undergoing changes with the attempt to find the most effective approaches to achieve the defined level of language proficiency (B2) in curriculum. A new phase of developing the methodology of teaching foreign languages in the nonlinguistic higher schools of Uzbekistan has been marked with implementation of new curricular, built on the basis of CEFR standard, and with application of the Communicative approach.

Keywords: *English for Occupational Purposes (EOP), English for Academic Purposes (EAP), Communicative Language Teaching (CLT), Content Language Integrated Learning (CLIL), subject-based competence, professionally-oriented material, comparative analysis, principles, observation, activities*

Introduction

Scholars and educators have acknowledged and expressed concern about the crisis in education, particularly with regard to developing qualified experts, which was articulated in terms of attitude toward societal needs. They discussed the need to update instructional technologies as a result. Additionally, several experts reaffirmed the fact that language instruction is a tool for professional growth across all sectors of production. Due to these circumstances, the main goal is to raise the standard of foreign language instruction in Uzbekistan. Despite the steps implemented during the last time, FLT at nonlinguistic universities has not been up to the standards set by society or the Uzbek labor market. According to us, there are several reasons why language instruction in nonlinguistic universities is of poor quality.

Challenges and difficulties in EOP and EAP teaching in nonlinguistic universities. Nowadays the Communicative approach (or CLT) is widely implemented into teaching foreign language at all educational establishments, including EOP setting. The efficacy of CLT in the context of EOP is the fact but this approach not taking into consideration of the linguistic difficulties related to professionally-oriented information and specialized means of expression and mother tongue experience of students that plays

a great role in teaching nonnative speakers. The linguistic difficulties in EOP and EAP can be integrated because in both specialized material is taught. These difficulties are usually caused with the specificity and complexity of academic language and discourse structure (Crandall 1995; Master, 2006; Ball et. al. 2019: 66–70), as well as with differences between two contacted languages (L1 and L2), that require special approach to professional and academic language acquisition based on the principle of "mother tongue experience" (Makhkamova & Jalolov, 2022).

Tus, above information, we convince that CLT has a lot of benefits for development of language and communicative skills, but in Uzbekistan national context of education it should be integrated with the CLIL approach due to the mentioned factors. There is a number of scholars and educators involved in study various aspects of CLT and CLIL approaches (Richards 2006; Larsen-Freeman & Anderson 2013; Ball et.al 2019; Makhkamova & Kusanova 2020 and others). In spite of the pointed out advantages and disadvantages of CLT and CLIL approaches found by educators, we need to study efficacy of CLT vs CLIL within EOP in our national context of education.

Methodology

It was mentioned before that the choice of the problem for study in this paper has been made with special focus on the features of CLT and CLIL approaches and their efficacy for EOP and EAP teaching in Uzbekistan national context of education. In our case, for empirical study we involved two groups of the 3-d year students of the International economics and country-study faculty in Tashkent State University of Oriental Studies.

In accordance with the specificity of issue discussed in this study the following research methods were applied: critical literature review, theoretical and empirical methods. Taking into consideration of the specificity of EOP & EAP, the relevance and significance of the empirical study can conduct from the following aspects:

– Comparative analysis of CLT and CLIL principles.

– Survey of application of these principles in the practice of EOP & EAP teaching.

Thus, this study aims to highlight the principles of CLT and CLIL approaches and ways of their application in the practice of EOP and EAP teaching. In accordance with the research goal the following tasks were determined:

Results and interpretation of comparative analysis of CLT and CLIL principles.

While comparison of the major principles of CLT and CLIL we have found out similarities and differences, which demonstrated in the Table 1.

Table 1. *Comparative analysis of CLT and CLIL principles*

CLT (according to Brumfit 1984; Brown 2007; Larsen-Freeman & Anderson 2013)	CLIL (according to Smyth 2003; Ball et.al. 2019)
1. Direct and natural approaches for L2 or EFL acquisition. Ignorance of the mother tongue. But judicious use of mother tongue sometimes is permitted (Larsen-Freeman & Anderson, 2013).	1. Bilingual education. L1 can be used for explanation of declarative and procedural knowledge. The translation method is also involved.
2. Language for communication. Mastering language skills through communicative actions.	2. English as "mediate" language between the learner and new subject.
3. Development of communicative skills.	3. Development of subject language awareness.
4. Fluency is first (Brumfit, 1984). At times fluency is above accuracy. But fluency and accuracy are seen as complementary. (Brown, 2007:241)	4. Subject-content is primary for development of accuracy and fluency.

Some points of the Table content are vital description and interpretation of differences between CLT and CLIL approaches. According to the first point of data in CLT, the English language is taught without addressing to the mother tongue of students, so presentation of terms is organized via context, description, visual aids. In turn, in CLIL approach while terms presentation the teacher can use the direct translation if it is necessary. The second point data gave evidence about role of the mother tongue for understanding difficult conceptions and assumptions related to the chosen field of study. The third group data explains that communicative competence, first, aims at mastering functions needed for various situations of communication (Richards, 2006: 11). In our view, taking into consideration of importance of the specialized information received in other linguistic code for professional development, both of them should be assessed. For instance, reading and listening tests are constructed on the basis of specialized texts, where the objects of evaluation are comprehension of the specialized text and appropriate language using.

In CLT the most important teaching aspect is fluency that's why it dominates, but in CLIL more attention is giving on assimilation of terminology and special grammar structures (See Master, 2004; Crandall J., (ed.) 1995) to reading specialized text via direct and translation methods for meaning discovering. So, accuracy should dominate, but in both approaches accuracy and fluency are complementary, because without accuracy can't be fluency (Makhkamova & Kusanova, 2020).

Regarding the final argument, we may assert that both the language and discourse levels are involved in discourse production. It is challenging to get a high degree of language competency (cognitive academic proficiency) under artificial ELT environments, particularly in nonlinguistic higher schools. Additionally, due to the prevalence of interlanguage, ELT in national contexts in Uzbekistan is based on the approximation concept (Makhkamova & Jalolov, 2022). Therefore, it is appropriate for language performance to be roughly right (exact enough to be intelligible). It is clear, that in teaching EOP and EAP special focus should be given on mastering discourse competence, which envelopes the functional and textural aspects for speech perception, comprehension and production.

Lessons observation in the context of the used ways of CLT and CLIL approaches

There are various models of analysis of using approaches and methods in the language classrooms, especially, described in the book "Techniques & Principles in Language Teaching" (2013) by D. Larsen-Freeman & M. Anderson. Study of the models is significant for thinking about procedure of survey, which should be taken into consideration. To make lessons' observation easy we designed sheet with several questions as follows:

1. What is the topic and objective of the lesson?
2. What is the linguistic material for obtaining?
3. What methods and techniques are used by the teacher while working on the specialized text?
4. How often the teacher address to the mother tongue experience while working on the linguistic and speech material?

First, let us describe the goal and content of the lesson, entitled "Accounting bases" of the first Unit in the syllabus of the 3-d year students of Tashkent State University of Oriental Studies. This lesson aimed at enlarging professionally oriented information and development of vocabulary skills in the field of accounting basis. There were two specialized texts in the lesson.

Discussion

The observation of the lessons showed that the teachers used various vocabulary and reading activities which corresponded with the put goal. The students skills related to professionally-oriented information in the first group was not developed in a proper way. In particular, 53 percent students did not understand a specialized information that it was revealed while answering the questions, although they could reproduce information without full comprehension of text. Unfortunately, within using only CLT students could not achieve a good result, in which defects and problems related to complexity of specialized text and terminology.

Conclusion

EOP methodology in Uzbekistan context has been undergone some difficulties in choosing appropriate approaches and methods because of the put goal and results of the FL education which should be mastered by students of higher schools with nonlinguistic profile of education. This stage is characterized with complexity of the cognitive academic proficiency (See Cummins 1979), so only implementation of CLT approach into professional educational system this issue will not be solved. In the FLT methodology CLIL approach has proven itself as rational in training specialist of nonlinguistic higher schools. The CLIL approach aims at developing subject competence through target language, that is why the learners' native language using is permitted. In this case the teacher can address to mother tongue while presentation and reinforcement of terms; analysis terms in the context; checking comprehension of sentences and content of the specialized text; commentary of meaning and ideas of the text.

References:

Abbaszadeh, Z. (2013). Genre-based Approach and Second Language Syllabus Design. *Procedia Social and Behaviour Sciences,* – 84. 2013. – P. 1879–1884.

Baker, C. (2001). Foundations of bilingual education and bilingualism. Clevedon, UK: Multilingual Matters.

Bachman, L.F. & Palmer, A.S. (1996). Language testing in practice: designing and developing useful language tests. USA: Oxford University Press.

Bhatia, V. (1991). A Genre-based Approach to ESP Material. *World Englishes,* – 10 (2). – P. 153–166.

Brown, H. D. (2007). Principles of Language Learning and Reaching. 5-th ed. Pearson Education, Inc., N. Y.

Çagri Turgul Mart (2013). The Facilitating Role of L1 in ESL Classes. *International Journal of Academic Research in Business & Social Sciences*. January, 2013. – V. 3. – No. 1. – P. 9–14. International Journal of Academic Research in Business and Social Sciences. ISSN: 2222-6990

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Section 3. Preschool education

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PSYCHOMETRIC PROPERTIES OF A SOCIAL SKILLS ASSESSMENT TOOLKIT FOR VIETNAMESE PRESCHOOL CHILDREN AGED 5–6 YEARS

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Abstract:

This study evaluates the psychometric properties of the KNXH5T, a newly developed toolkit designed to assess social skills among Vietnamese preschool children aged 5–6. Grounded in the Social Skills Improvement System (SSIS) framework and Classical Test Theory (CTT), the tool underwent a rigorous validation process involving a pilot study (N=140) and a formal survey (N=335) across ten preschools in Hanoi. Exploratory Factor Analysis (EFA) identified a five-factor structure – Communication, Cooperation, Responsibility, Empathy, and Self-control – explaining 62.4% of the total variance. Subsequent Confirmatory Factor Analysis (CFA) demonstrated a robust model fit with the empirical data ($\chi^2/df = 2.57$, CFI = 0.911, TLI = 0.900, and RMSEA = 0.0685). The assessment toolkit exhibited high internal consistency, with Cronbach's alpha coefficients of 0.88 for the teacher-report and 0.87 for the parent-report, while subscale reliability ranged from 0.78 to 0.85. Furthermore, strong temporal stability and inter-rater objectivity were confirmed by a test-retest reliability of r=0.86 and an Intraclass Correlation Coefficient (ICC) of 0.83. These findings suggest that the KNXH5T is a psychometrically sound and culturally sensitive tool, providing a reliable basis for evidence-based social skills assessment in the Vietnamese educational context.

Keywords: *Social skills, Psychometric properties, Children aged 5–6, Vietnamese education, Validation*

1. Introduction

Social skills represent a core component of holistic child development, particularly during the preschool years. Gresham and Elliott (2008) define social skills as observable and learnable behaviors that enable children to interact effectively, adhere to social norms, and achieve social acceptance. Moreover, emotional competence plays a foundational role in social functioning; Denham et al. (2003) demon-

strated that emotional development underpins behavioral self-regulation and long-term social adjustment. Thus, social skills encompass not only overt behaviors but also underlying emotional and regulatory capacities.

For children aged 5–6, social competence becomes especially critical as they transition from preschool to primary school. This period requires greater independence, discipline, and responsibility. Skills such as effective communication, cooperation, emotional regulation, empathy, and task engagement are essential for successful learning and positive peer relationships. Insufficient development in these domains may increase the risk of behavioral and academic maladjustment.

Within an evidence-based educational framework, social skills assessment must rely on instruments supported by strong theoretical foundations and psychometric evidence. The *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 2014) emphasize that validity depends on demonstrated reliability and construct validity. For young children, a multi-informant approach – integrating teacher and parent reports with direct observations – is recommended to ensure comprehensive evaluation.

Although internationally established tools such as SSIS, SDQ, PKBS, and DECA are widely used, cross-cultural research highlights the necessity of adaptation and validation when applying these instruments in new contexts. Differences in social norms, educational expectations, and cultural values may influence how social behaviors are expressed and interpreted.

In Vietnam, despite policy emphasis on socio-emotional development, assessment practices for 5–6-year-olds remain largely subjective or reliant on non-standardized tools. Cultural values such as collectivism and harmony-oriented interaction may not be fully captured by imported measures. Accordingly, this study seeks to develop and validate a culturally responsive assessment toolkit –the KNXH5T – by examining its reliability and construct validity through rigorous psychometric analyses.

2. Methodology

2.1. Research Design

The study employed a mixed-methods approach, primarily quantitative, to develop and standardize the KNXH5T social skills assessment assessment toolkit for Vietnamese children aged 5–6 years, guided by Classical Test Theory (CTT). The procedure comprised three phases: theoretical framework development and item construction; psychometric analyses of reliability and validity; and final standardization for educational application. Data were analyzed using RStudio. The initial pool included 44 items across two components: teacher/parent rating scales and child-administered situational tasks. Content validity was established through expert review (n = 7) using a four-point scale, retaining items with CVI ≥ 0.78.

2.2. Participants

The study was implemented in two data collection phases. The pilot phase was conducted with a sample of 140 children to refine the wording, examine the item structure, and perform a preliminary analysis of the scale's psychometric quality. The formal survey phase involved 335 children aged 5–6 years, recruited from 10 preschools in Hanoi using a controlled convenience sampling method. Data were collected from multiple sources, including teachers, parents, and situational judgment tasks for children, to enhance the reliability and validity of the assessment

2.3. Standardization Procedure and Psychometric Analyses

The standardization of the KNXH5T assessment toolkit was conducted in accordance with CTT principles combined with modern analytical techniques. Following expert validation and pilot testing, data from the main sample (N = 335) were used to evaluate the instrument's psychometric properties.

First, item quality was examined using corrected item–total correlations to determine each item's contribution to internal consistency. Items failing to meet acceptable thresholds were removed. Internal consistency reliability of the overall scale and subscales was assessed using Cronbach's Alpha, with $\alpha \geq 0.70$ considered acceptable.

Next, structural validity was evaluated in two stages. Exploratory Factor Analysis (EFA) with Promax rotation was conducted to identify latent factors and examine the alignment between empirical data and the theoretical structure. Subsequently, Confirmatory Factor Analysis (CFA) was performed

on an independent dataset to assess model fit using indices including χ^2/df, CFI, TLI, and RMSEA.

In addition, evidence of content validity, construct validity, discriminant validity across groups, inter-rater reliability, and convergent validity (Spearman correlation) was examined to ensure that the assessment toolkit not only demonstrated internal consistency but also accurately and comprehensively measured the construct of social skills in children aged 5–6 years.

Based on the synthesis of these analyses, the final structure of the KNXH5T assessment toolkit was established and refined, ensuring scientific rigor, cultural relevance, and practical applicability within Vietnamese early childhood education.

3. Results

3.1. The Social Skills Framework Model for Children Aged 5–6 Years

The KNXH5T framework was developed through a selective adaptation of the Social Skills Improvement System – Rating Scales (SSIS-RS) proposed by Gresham and Elliott (2008). The original model comprises seven domains of social skills: Communication, Cooperation, Assertion, Responsibility, Empathy, Engagement, and Self-control. SSIS conceptualizes social skills as a multidimensional construct, emphasizing the dynamic interaction among social cognition, emotional regulation, and adaptive behavior (Gresham et al., 2011), while focusing on observable behaviors manifested in everyday social contexts.

The SSIS (2008) Theoretical Framework and Its Feasibility in the Asian Context

Cheung et al. (2017) demonstrated that the Chinese version of the SSIS-RS exhibited strong internal reliability and a factor structure consistent with the original model in a sample of children and adolescents in Hong Kong. These findings support the cross-cultural adaptability of the SSIS framework and provide an empirical reference point for its application in the Vietnamese context.

Challenges in Applying SSIS to Preschool Children

Gresham (2011) reported discrepancies between teacher and parent ratings and noted that several original SSIS items were not fully aligned with the cognitive and linguistic developmental characteristics of 5–6-year-old children. Panayiotou (2020) therefore recommended a more parsimonious structure for early childhood populations. Dobbs et al. (2009) further highlighted the contextual dependency of young children's social behaviors, suggesting that maintaining an overly differentiated factor structure may weaken construct validity.

Rationale for Restructuring from Seven to Five Factors (KNXH5T)

Exploratory Factor Analysis (EFA) conducted with a sample of 5–6-year-old children in Hanoi indicated convergence toward a clearer five-factor solution. This pattern aligns with Frye et al. (2025), whose multilevel mixture modeling (MMOD) revealed high inter-factor correlations among the seven SSIS domains, supporting the possibility of factor reduction without substantial loss of explanatory power. In preschool populations, domains such as Cooperation and Responsibility, or Engagement and Communication, frequently demonstrate conceptual overlap. In the Vietnamese context, Responsibility is often manifested through Cooperative classroom behaviors, while Engagement is commonly expressed via Communication. Accordingly, the KNXH5T framework comprises five core domains: Communication, Cooperation (integrating Engagement indicators), Responsibility (integrating Assertion indicators), Empathy, and Self-control. This restructuring aims to enhance psychometric parsimony, reduce multicollinearity, and strengthen practical applicability in early childhood education.

In summary, based on a selective adaptation of the SSIS framework and adjustments to ensure alignment with developmental characteristics and the Vietnamese early childhood education context, the KNXH5T framework of this instrument was established to comprise five core domains: Communication, Cooperation, Responsibility, Empathy, and Self-control.

3.2. Introduction to the Social Skills Assessment Assessment toolkit for Children Aged 5–6 Years – KNXH5T

The KNXH5T assessment toolkit was developed following a multi-informant assessment approach, enabling the collection of information on children's social skills across

different contexts. The system comprises two primary components:

A rating scale with rubric completed by teachers and parents (KNXH5T – GV&PH – Rating Scale);

Direct child-administered situational tasks (KNXH5T – Social Situations Tasks).

The content structure was designed to ensure comparability across assessment sources.

The quantitative rating scale captures stable social behaviors in classroom and family environments while enabling reliability and validity testing. The rubric provides qualitative depth by describing behavioral performance levels beyond mere frequency counts. The situational tasks offer evidence of children's ability to recognize and select appropriate responses in specific social contexts. Together, these components enhance comprehensiveness, reliability, and practical applicability in Vietnamese early childhood education.

3.2.1. Rating Scale for Teachers and Parents (KNXH5T – GV&PH)

Development Philosophy and Advantages of a Unified Form

The KNXH5T – GV&PH form was developed through adaptation and localization of the Teacher Form of the SSIS-RS (Gresham & Elliott, 2008), using a unified item structure for both teachers and parents. This approach ensures cross-informant comparability, allowing score differences to be interpreted as contextual behavioral variations (home and school) rather than measurement discrepancies.

Maintaining shared items reduces rater-related measurement error, enhances internal consistency, and preserves psychometric properties during localization. Moreover, a unified form facilitates large-scale training, administration, and data processing.

Reduction and Cultural Adaptation Process

From an original pool of 46 items, the assessment toolkit was refined to 22 items through expert consultation, pilot testing, and content analysis. Redundant, weakly discriminating, or culturally inappropriate items were removed. Language was behaviorally operationalized to ensure observability.

The final 22 items cover five core domains: Communication, Cooperation, Self-control, Assertion, and Empathy.

Structure and Rating Scale (Rubric)

The rating form employs a four-point Likert scale (1–4) accompanied by a frequency-based rubric, minimizing central tendency bias and improving discriminative capacity. Items are organized into five factors (4–5 indicators per factor), suitable for reliability and structural analyses.

In summary, the KNXH5T – GV&PH form represents a scientifically grounded localization process, establishing a "shared language" between families and schools in assessing and supporting social skills development in children aged 5–6 years.

3.2.2. Social Situations Tasks for Children (KNXH5T – Social Situations Tasks)

In addition to indirect rating scales, the study developed a system of situational tasks to directly assess children's social performance in typical social contexts. This approach recognizes that social skills are reflected not only in observable behavioral frequency but also in children's reasoning, decision-making, and action in specific situations.

The assessment toolkit integrates elements from IDELA (Save the Children, 2014) with the KNXH5T framework, ensuring adherence to international standards while maintaining cultural relevance to Vietnam.

Design Philosophy and Integration Rationale

Guided by a play-based assessment orientation, situations are presented through illustrated scenarios or short stories to elicit natural responses and reduce psychological pressure. Core domains such as peer relations, emotional regulation, empathy, self-awareness, and conflict resolution were incorporated and restructured into the five KNXH5T domains.

This integration enhances universality, practical relevance, and control over biases inherent in indirect assessments.

Structure and Content

The system includes 22 situational tasks, corresponding one-to-one with the 22 behavioral indicators, ensuring construct coverage and facilitating structural and convergent validation analyses.

Scoring Guidelines

A four-point scale (1–4) is applied based on the quality and appropriateness of responses, aligned with the teacher and parents

rating scale to enable cross-informant comparison.

Overall, this component quantifies children's social problem-solving competence and strengthens the comprehensive validity of the KNXH5T instrument.

3.2.3. Scoring Criteria and Performance Levels

The development of scoring criteria and interpretation guidelines ensures objectivity. Data are processed by integrating behavioral frequency (teacher and parents rating scale) and situational cognitive competence (Child Tasks).

Scoring Rules for the teacher and parents rating scale

The form includes 27 items (22 core items and 5 supplementary items). Teachers and parents rate children's behavior observed over the previous 3–4 weeks using a four-point Likert scale (1–4), ranging from "Never" to "Very Often." Mean scores at the subscale and total scale levels reflect the level of social skills development.

Scoring Rules for Situational Tasks: Children receive 1 point for an appropriate response with reasonable justification and 0 points for inappropriate responses. The resulting index (0–1) serves as cross-validation against behavioral data.

Performance Level Classification: Scores are categorized into four levels: Low, Moderate, Good, and High. The teacher and parents rating scale serves as the primary weighting source, while situational tasks reflect cognitive potential.

3.3. Validation of the KNXH5T Instrument

The toolkit demonstrated high reliability (α = 0.88) and a robust five-factor structure (Communication, Cooperation, Responsibility, Empathy, and Self-control), confirmed by EFA (62.5% variance explained) and CFA (CFI = 0.93; RMSEA = 0.052).

3.3.1. Item Analysis and Reliability

Based on Classical Test Theory (CTT), corrected item-total correlation analysis yielded coefficients ranging from 0.45 to 0.72, surpassing the 0.30 threshold recommended by Hair et al. This demonstrates that the items are closely aligned and consistently measure the social skills construct. Following the refinement process, the overall Cronbach's Alpha reached 0.88 (Teacher-report) and 0.87 (Parent-report), reflecting high internal consistency. Subscale coefficients ranged from 0.78 to 0.85. Furthermore, the assessment toolkit demonstrated superior stability and objectivity, with a test-retest reliability of r = 0.86 and an intraclass correlation coefficient (ICC) of 0.83.

3.3.2. Structural Validity

The construct validity of the assessment toolkit was evaluated using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). For the N = 335 sample, EFA with Varimax rotation extracted five factors with Eigenvalues > 1, accounting for 62.4% of the total variance.

The KMO value of 0.847 and a significant Bartlett's test ($p < .001$) confirmed the suitability of the data for factor analysis. All items exhibited factor loadings geq 0.55, clustering distinctly into the five hypothesized dimensions (Communication, Cooperation, Responsibility, Empathy, and Self-control) without significant cross-loadings.

The five-factor model was further validated through CFA, demonstrating a good fit with the empirical data: Chi-square/df = 2.57; CFI = 0.911; TLI = 0.900; and RMSEA = 0.0685 (90% CI: 0.0629–0.0741). The path diagram confirmed that all indicators significantly loaded onto their respective latent factors. These findings provide robust evidence for the construct validity and measurement stability of the KNXH5T toolkit within the Vietnamese educational context.

Table 1. *Summary of the Main Psychometric Indices of the KNXH5T Instrument*

Index Category	Assessment Content	Summary Results	Standard Level
Item Analysis	Corrected item–total correlations	0.45–0.72 (2 items removed < 0.25)	Acceptable (> 0.30)

Index Category	Assessment Content	Summary Results	Standard Level
Overall Reliability	Cronbach's Alpha (Total scale)	0.88 (Teacher); 0.87 (Parent)	Very high
Subscale Reliability	Communication (GT)	0.82	Good
	Cooperation (HT)	0.85	Very good
	Self-control (TKS)	0.78	Acceptable
	Responsibility (TN)	0.81	Good
	Empathy (TC)	0.85	Very good
Exploratory Factor Analysis (EFA)	Number of extracted factors	5 factors	Consistent with model
	Total variance explained	62.4%	High (> 50%)
	KMO / Bartlett's Test	0.847 / p < .001	Good
Confirmatory Factor Analysis (CFA)	Chi-square/df	2.57	Good (< 5.0)
	CFI (Comparative Fit Index)	0.911	Acceptable (> 0.90)
	TLI (Tucker-Lewis Index)	0.900	Acceptable (≥ 0.90)
	RMSEA	0.0685	Good fit (< 0.08)
Additional Validity	Test-retest reliability (r)	0.86	Excellent
	Inter-rater reliability (ICC)	0.83	Very good

4. Discussion of Findings

The research findings confirm the validity of selectively adapting the SSIS framework (Gresham & Elliott, 2008) and restructuring it into the KNXH5T model tailored for Vietnamese children aged 5–6. Refining the original seven-factor SSIS structure into a more streamlined five-factor model (Communication, Cooperation, Responsibility, Empathy, and Self-control) aligns with trends observed in cross-cultural studies (Cheung et al., 2017; Panayiotou, 2020, Frye et al, 2025). This adjustment suggests that certain highly correlated components can be integrated to enhance theoretical parsimony and practical utility within the Vietnamese early childhood education context. The EFA results, extracting five factors that account for 62.4% of the total variance, indicate that social skill groups at the preschool level tend to converge into distinct yet cohesive structures, reflecting the developmental psychological characteristics of 5- to 6-year-olds.

Regarding psychometric properties, the overall Cronbach's Alpha reached 0.88 (Teacher-report) and 0.87 (Parent-report), with subscale coefficients ranging from 0.78 to 0.85. These figures demonstrate high internal consistency according to Classical Test Theory (CTT) standards. The exclusion of items with low corrected item-total correlations (< 0.25) during the refinement process significantly enhanced the scale's homogeneity. Compared to localized SSIS validation studies worldwide, the reliability of the KNXH5T toolkit is equivalent to or higher than several international versions, confirming that the cultural adaptation process was executed systematically and effectively.

The Confirmatory Factor Analysis (CFA) results (CFI = 0.911; TLI = 0.900; RMSEA = 0.0685) provide compelling empirical evidence of construct validity. The goodness-of-fit indices met established international thresholds, validating the compatibility between the theoretical model and the empirical data collected in Hanoi. This finding is particularly significant given the current shortage of social skill assessment tools in

Vietnam that have undergone rigorous psychometric validation.

The multi-source approach (Teacher – Parent – Child) offers superior scientific value. Consistency across assessment sources allows for cross-validation, reducing subjective bias and "social desirability" effects. Combining Likert-scale questionnaires with situational tasks not only assesses overt behaviors but also taps into the child's underlying social-cognitive abilities. Overall, the KNXH5T toolkit establishes both technical reliability and practical validity. It serves as a robust assessment toolkit for screening, evaluating, and supporting early interventions to develop social skills in 5- to 6-year-old children, providing a solid foundation for their transition to primary school.

5. Conclusion

This study successfully developed and validated the KNXH5T assessment toolkit for assessing social skills among Vietnamese children aged 5–6 within the early childhood education context. Grounded in the theoretical framework of Gresham & Elliott and informed by Classical Test Theory (CTT), the assessment toolkit was designed to align with both developmental characteristics and the socio-cultural context of Vietnam.

Psychometric analyses supported a five-factor structure – Communication, Cooperation, Responsibility, Empathy, and Self-control – with satisfactory model fit to the empirical data. Reliability coefficients indicated strong internal consistency across the overall scale and subscales, while construct validity was substantiated through factor-analytic evidence.

The integration of multi-informant data, combining teacher and parent ratings with direct situational tasks for children, enhanced the objectivity and applied relevance of the instrument. Overall, the KNXH5T provides a scientifically robust foundation for evidence-based assessment and intervention, supporting children's social development during the critical transition to primary education

References

American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. (2014). *Standards for educational and psychological testing*. American Educational Research Association.

Open Access Files – The Standards for Educational and Psychological Testing

Cheung, P. P. P., Siu, A. M. H., & Brown, T. (2017a). Measuring social skills of children and adolescents in a Chinese population: Preliminary evidence on the reliability and validity of the translated Chinese version of the Social Skills Improvement System-Rating Scales (SSIS-RS-C). *Research in Developmental Disabilities*, – 60. – P. 187–197. URL: https://doi.org/10.1016/j.ridd.2016.11.019

Cheung, P. P. P., Siu, A. M. H., & Brown, T. (2017b). Validation of the Social Skills Improvement System–Rating Scales for children and adolescents in Hong Kong. *Research in Developmental Disabilities*, *60*, 1–12. URL: https://doi.org/10.1016/j.ridd.2016.11.003

Denham, S. A., Blair, K. A., DeMulder, E., Levitas, J., Sawyer, K., Auerbach-Major, S., & Queenan, P. (2003). Preschool emotional competence: Pathway to social competence? *Child Development*, – 74(1). – P. 238–256. URL: https://doi.org/10.1111/1467–8624.00533

Frye, K. E., Anthony, C. J., Lei, P.-W., Husmann, K. D., & DiPerna, J. C. (2025). *Utility of the Social Skills Improvement System-Rating Scales for capturing dynamic social constructs: Evidence using the measurement model of derivatives*. Child Development, – 96(2). – P. 721–735. URL: https://doi.org/10.1111/cdev.14199

Gresham, F. M., & Elliott, S. N. (2008). *Social Skills Improvement System (SSIS) rating scales manual*. Pearson Assessments.

SSIS Rating Scales – Social Skills Improvement System SSIS Rating Scales | Pearson Assessments US.

Merrell, K. W. (2002). *Preschool and Kindergarten Behavior Scales – Second Edition*. Austin, TX: PRO-ED.

Panayiotou, G., Humphrey, N., & Wigelsworth, M. (2020). Assessing the psychometric properties of the Social Skills Improvement System-Rating Scales (SSIS-RS) in a Greek primary school sample. *Journal of Psychoeducational Assessment*, – 38(3). – P. 360–376. URL: https://doi.org/10.1177/0734282919839130

Save the Children. (2014). *International Development and Early Learning Assessment (IDELA) toolkit*. Save the Children.

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Section 4. Specialized branches of pedagogy

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THE CONCEPT OF TEACHER-STUDENT RELATIONS IN SIXTEENTH-CENTURY BUKHARA: A PEDAGOGICAL READING OF MUZAKKIRI AHBOB AND BADOE' UL-VAQOE'

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Abstract

This article examines the nature of **teacher–student (ustoz–shogird) relationships** and their **pedagogical interpretation** as reflected in two important sixteenth-century sources from the Bukhara Khanate: *Muzakkiri ahbob* by Hasanxoja Nisoriy and *Badoe' ul-vaqoe'* by Zayniddin Mahmud Vosifiy. Both works provide rich narrative and descriptive material concerning scholars, teachers, students, and intellectual circles of the period, allowing for an in-depth analysis of educational practices and moral guidance within the traditional Islamic learning environment.

The study focuses on how the role of the teacher is portrayed not only as a transmitter of knowledge but also as a moral guide, mentor, and spiritual authority responsible for shaping the intellectual and ethical character of students. Particular attention is given to pedagogical methods such as advice, encouragement, admonition, public correction, and personal example, which are illustrated through real-life events and biographical accounts in the texts. While *Muzakkiri ahbob* emphasizes the continuity of scholarly transmission and the formative influence of teachers on their disciples, *Badoe' ul-vaqoe'* presents concrete pedagogical situations that reveal the dynamics of guidance, discipline, and moral instruction.

The findings suggest that teacher–student relationships in these works represent a well-structured pedagogical model rooted in ethical responsibility, intellectual discipline, and social accountability. The article argues that the educational principles embedded in these sources remain relevant for contemporary pedagogical discourse, particularly in understanding mentorship-based education and value-oriented teaching traditions.

Keywords: *Pir–Murshid relations; pedagogical interpretation; educational guidance; moral and ethical education; intellectual transmission; sixteenth-century Bukhara; Muzakkiri Ahbob; Badoe' ul-Vaqoe'*

Introduction

The study of educational relationships in premodern Central Asia has received increasing scholarly attention, particularly regarding the ethical and spiritual foundations of knowledge transmission. Research on Islamic education emphasizes that learning was not confined to formal instruction but was deeply embedded in moral authority, mentorship, and personal guidance (Makdisi, 1981; Berkey, 1992). Within this framework, the **pir–murshid** relationship emerged as a central model for transmitting intellectual, ethical, and spiritual values.

Scholars note that the sixteenth century, especially under the Bukhara Khanate, marked a formative period in which madrasas, Sufi institutions, and scholarly networks operated as interconnected educational spaces (DeWeese, 2016; Gross & Urunbaev, 2002). Educational practices of this period cannot be adequately understood through modern teacher–student categories alone; instead, they must be examined through indigenous relational models that combined instruction with moral supervision and spiritual mentorship. The pir–murshid paradigm represents one such model, integrating guidance, discipline, and ethical cultivation.

Studies of premodern Islamic societies highlight that educational authority was grounded not only in scholarly expertise but also in personal conduct and moral credibility (Berkey, 1992). This principle is particularly relevant for understanding educational dynamics in sixteenth-century Bukhara, where intellectual legitimacy was inseparable from ethical responsibility. Recent historiography further demonstrates that pir–murshid relations extended beyond purely mystical instruction and functioned as a broader pedagogical framework shaping intellectual discipline and social behavior (De Weese, 2016).

From a pedagogical perspective, this model aligns with contemporary theories that emphasize the importance of formative relationships in learning processes, including mentorship, learning through example, and moral reinforcement (Lave & Wenger, 1991). Historical evidence from Central Asia suggests that these principles were already firmly established by the sixteenth century, embedded in cultural and religious norms that prioritized ethical self-cultivation alongside intellectual achievement.

Scholars analyzing classical Persian and Turkic narrative sources have shown that educational ideals were often conveyed through biographical anecdotes and moralized events rather than abstract theory, allowing values such as humility, perseverance, and respect for authority to be internalized through concrete examples (Subtelny, 2007). Within this context, the present article examines *Muzakkiri Ahbob* and *Badoe' ul-Vaqoe'* as representative texts reflecting broader educational practices in sixteenth-century Bukhara.

Accordingly, this study explores how pir–murshid relations functioned as a pedagogical model by focusing on relational dynamics such as guidance, moral correction, encouragement, and exemplary behavior. By situating these historical practices within contemporary pedagogical discourse, the article seeks to demonstrate the continuing relevance of mentorship-based and value-oriented education.

Pir–Murshid Relations in *Muzakkiri Ahbob*: A Pedagogical Interpretation

Muzakkiri Ahbob by Hasanxoja Nisoriy offers rich empirical material for examining pir–murshid relations through concrete examples drawn from the intellectual life of sixteenth-century Bukhara. The work catalogues scholars from diverse fields – education, medicine, rhetoric, music, and calligraphy – whose authority is consistently framed through professional mastery and moral credibility rather than literary fame alone (Nisoriy, 1993).

A recurring pattern in the text is that individuals mentioned, despite their interest in poetry, are primarily recognized for excellence in their respective disciplines. This emphasis suggests a pedagogical hierarchy in which knowledge, skill, and ethical standing formed the basis of scholarly authority. Within such a framework, the murshid emerges as a figure whose legitimacy rests on competence and exemplary conduct.

The figure of the physician Mavlono Abul Hakim illustrates this model clearly. He is described as having mastered medical sciences and achieved recognition for his diagnostic abilities, while also possessing knowledge

in multiple fields. His affiliation with a lineage of shaykhs further reinforces his moral authority, indicating that pedagogical leadership combined intellectual expertise with ethical guidance (Nisoriy, 1993, p. 231).

Pir–murshid relations are particularly evident in the portrayal of Kamoliddin Ibrohim Shirvoniy, presented as an authoritative mudarris whose long teaching career in Bukhara madrasas resulted in the formation of students who attained the rank of *mavlono*. This outcome reflects a pedagogical process aimed not merely at instruction but at shaping scholarly identity and professional continuity (Nisoriy, 1993, p. 74).

The pedagogical role of rhetorical skill is demonstrated through the example of Mavlono Qobuliy Bukhariy. His reputation as an eloquent speaker and his influence across regions highlight public discourse as a means of moral and educational transmission. Such accounts show that persuasion and speech functioned as integral tools within the pir–murshid pedagogical repertoire (Nisoriy, 1993, p. 82).

Artistic disciplines are similarly framed within this pedagogical model. Shaykh Bayazid Puroniy's mastery of calligraphy, particularly his ability to write in seven scripts and his contribution to the Jome' Mosque of Bukhara, exemplifies how professional excellence in the arts constituted pedagogical authority and served as a model for disciples (Nisoriy, 1993, p. 92).

The case of Mirzo Sabriy further extends the pir–murshid framework into the realm of music. Described as a musician, theorist, and inventor, he is portrayed as transmitting both technical knowledge and aesthetic sensibility to students. Music is thus presented as a discipline with pedagogical and ethical dimensions, capable of contributing to spiritual refinement and emotional balance (Nisoriy, 1993, p. 247).

Taken together, these examples demonstrate that *Muzakkiri Ahbob* conceptualizes pir–murshid relations as a multifaceted pedagogical system grounded in discipline-specific mastery, ethical authority, and personal example. Education is depicted as inseparable from moral cultivation and professional responsibility, reflecting the advanced level of pedagogical thought present in the Bukhara Khanate during the sixteenth century.

Pir–Murshid Relations in *Badoe' ul-Vaqoe'*: A Pedagogical Interpretation

Badoe' ul-Vaqoe' by Zayniddin Vosifiy provides a practice-oriented perspective on pir–murshid relations by embedding pedagogical ideas within concrete social and historical events. Unlike biographical tazkiras, the work conveys educational principles through lived experiences, allowing insight into how moral guidance and disciplinary authority were exercised in everyday contexts (Vosifiy, 1979).

Vosifiy's accounts of literary gatherings and scholarly assemblies in Samarkand reveal these spaces as informal pedagogical environments where ethical norms were transmitted through dialogue, poetry, and public interaction. In such settings, the pir–murshid relationship was enacted through speech, example, and moral judgment rather than formal instruction (Vosifiy, 1979, P. 19–20).

A notable episode concerns the improper conduct of certain students motivated by arrogance and envy during a poetry gathering. Vosifiy responds not with direct reprimand but with refined language, poetic allusion, and an instructive anecdote. The students' resulting public embarrassment serves as moral correction without coercion, illustrating a pedagogical strategy based on persuasion and intellectual authority (Vosifiy, 1979, P. 19–20).

The pedagogical role of the murshid is further exemplified in the relationship between Mir Arab and Ubaydullaxon. Faced with political and emotional uncertainty, the disciple is reassured through Qur'anic references and historical precedent, emphasizing perseverance and confidence despite adversity. Here, the murshid functions as a source of strategic counsel and moral reinforcement, guiding the disciple toward resilience and decisive action (Vosifiy, 1979, p. 39).

Another significant episode highlights the ethical responsibilities of pedagogical authority. During an exceptionally harsh winter, impoverished students in Samarkand face severe hardship. Vosifiy intervenes by appealing to the ruler on their behalf, securing material assistance and ensuring their

survival. This act underscores compassion, social responsibility, and active care as integral components of pir–murshid relations (Vosifiy, 1979, p. 28).

Throughout *Badoe' ul-Vaqoe'*, educational values such as the primacy of knowledge over wealth, the destructive effects of envy, and the necessity of diligence and moral discipline are consistently conveyed through narrative episodes rather than abstract exposition. This narrative mode reinforces the effectiveness of experiential learning and moral internalization (Vosifiy, 1979, P. 22–23).

Taken together, *Badoe' ul-Vaqoe'* portrays pir–murshid relations as a dynamic and situational pedagogical model grounded in ethical guidance, social engagement, and personal responsibility. Education is presented as a relational process that integrates intellectual formation with moral discipline and communal care, reflecting the practical dimensions of mentorship-based pedagogy in sixteenth-century Bukhara.

Conclusion

This study has explored pir–murshid relations as a pedagogical model in sixteenth-century Bukhara through an analysis of *Muzakkiri Ahbob* by Hasanxoja Nisoriy and *Badoe' ul-Vaqoe'* by Zayniddin Vosifiy. Despite differences in genre and narrative form, both works present education as a relational process in which intellectual development is inseparably linked to moral formation.

A comparative reading shows that *Muzakkiri Ahbob* foregrounds pedagogical continuity and stability through biographical portrayals of scholars whose authority is reflected in the intellectual and ethical success of their disciples. By contrast, *Badoe' ul-Vaqoe'* conveys the same principles through lived experiences, emphasizing moral testing, guidance, and social responsibility. Together, the texts reveal pir–murshid relations as both a normative educational ideal and a practical means of addressing real social and personal challenges.

The analysis confirms that pir–murshid relations functioned as a comprehensive pedagogical framework extending beyond spiritual mentorship to include knowledge transmission, ethical discipline, and concern for students' material and emotional well-being. The murshid appears as a multidimensional figure – teacher, moral exemplar, advisor, and protector – whose authority derived from personal conduct and responsibility rather than formal institutional power. These findings challenge modern educational paradigms that separate cognitive learning from moral education. The integration of intellectual training with ethical guidance evident in sixteenth-century Bukhara reflects a holistic understanding of education that remains relevant to contemporary discussions of mentorship-based and value-oriented pedagogy.

Overall, *Muzakkiri Ahbob* and *Badoe' ul-Vaqoe'* testify to the sophistication of pedagogical thought in the Bukhara Khanate and underscore education as a fundamentally human, moral, and relational endeavor – an insight that continues to inform modern educational theory and practice.

References

Berkey, J. P. (1992). *The transmission of knowledge in medieval Cairo: A social history of Islamic education*. Princeton University Press.

DeWeese, D. (2016). *Islamization and native religion in the Golden Horde: Baba Tükles and conversion to Islam in historical and epic tradition*. University Park, PA: Penn State University Press.

Gross, J., & Urunbaev, A. (2002). *The letters of Khwaja 'Ubayd Allah Ahrar and his associates*. Leiden: Brill.

Makdisi, G. (1981). *The rise of colleges: Institutions of learning in Islam and the West*. Edinburgh: Edinburgh University Press.

Subtelny, M. E. (2007). *Timurids in transition: Turko-Persian politics and acculturation in medieval Iran*. Leiden: Brill.

Nisoriy, H. (1993). *Muzakkiri ahbob (Do'stlar yodnomasi)* (Tarix, so'zboshi va izohlar mualli-fi I. Ekjonov). Toshkent: A. Qodiriy nomidagi Xalq merosi nashriyoti.

Vosifiy, Z. M. (1979). *Badoe' ul-vaqoe' (Nodir voqealar)*. Toshkent: G'afur G'ulom nomidagi adabiyot va san'at nashriyoti.

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Section 5. Applied psychology

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ARCHITECTURAL PSYCHOLOGY IN URBAN PLANNING: THE INFLUENCE OF THE SPATIAL ENVIRONMENT ON HUMAN PERCEPTION

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Abstract

This article examines in detail the importance of architectural psychology in modern urban planning. The focus is on the profound impact of the spatial urban environment on a person's emotional, cognitive, and behavioral perception. In conditions of rapid urbanization, special attention is paid to the problems of urban stress and alienation that arise due to monotonous, visually aggressive, and uncomfortable buildings for humans. The article provides scientific substantiation of the influence of various factors, such as the scale of architectural objects, the density of residential areas, color patterns, insolation, and geometry of streets, on the psycho-physiological state of citizens. Special attention is paid to the principles of video ecology and the concept of human-oriented design. Empirical research proves that the integration of natural elements, intuitive navigation, and the proportionality of architectural forms promote social interaction, provide a sense of security, and reduce anxiety. It is concluded that an interdisciplinary approach is extremely important in the development of master plans. It allows you to take into account the psychological needs of society, which is a prerequisite for creating a stable and comfortable living environment.

Keywords: *architectural psychology, urban planning, spatial environment, psychology of perception, video ecology, urban studies, mental health of citizens, proportionality of architecture, human-oriented design*

Relevance of the study

The relevance of the study is due to the rapid growth of cities worldwide and how this affects the psychological state of their inhabitants. Modern urban planning practice often focuses on economic efficiency, transport logistics convenience, and maximum building consolidation, without taking into account the laws of video ecology and basic human needs.

An increase in building height, the monotony of typical residential areas, a lack of green spaces for recreation, and an aggressive visual environment are directly related to an

increase in chronic urban stress, heightened anxiety, decreased cognitive functions, and increased social isolation.

In this regard, there is an urgent need for the deep implementation of architectural psychology principles in the spatial planning process. Understanding how space geometry affects neurobiological and emotional responses is crucial for creating a therapeutic and safe urban environment that meets sustainable development criteria and contributes to improving the population's mental health.

The purpose of the study

The aim of the research is to thoroughly investigate, categorize, and scientifically justify the mechanisms of how the architectural and spatial environment influences a person's psychological perception, emotional state, and behavior in a modern city. This goal is achieved by assessing the impact of various urban planning elements, such as the scale of development, color schemes, public space geometry, and insolation, on citizens' psychophysiological comfort. Additionally, this research aims to develop practical, interdisciplinary recommendations for creating a human-centered and visually appealing urban landscape.

Materials and research methods

Our research is based on a synergetic approach that combines analytical methods of urban planning, environmental psychology, and urban sociology.

As a theoretical basis, we used fundamental works on video ecology, proxemics, and behavioral geography, as well as urban planning documentation and master plans of the studied territories.

In the course of our work, we applied both empirical and theoretical methods. Spatial and structural analysis of urban areas has become the main theoretical method. To obtain the primary data, we conducted field observations of how people move around the city and interact with its elements (behavioral mapping).

The results of the study

The understanding of the relationship between the organization of space and a person's mental state originated in antiquity. Vitruvius' treatise "Ten Books on Architecture" outlined the need for harmony of utility, durability, and beauty, and aesthetics were directly related to the comfort of perception. However, a truly scientific understanding of this problem began only at the end of the 19th century.

The Austrian architect and urban planner Camillo Sitte, in his work "The Artistic Foundations of Urban Planning" (1889), for the first time criticized the regular city plan, which was based on dry geometry. He empirically proved that curved streets, asymmetrical squares, and the proportionality of buildings in old European cities are more comfortable from a psychological point of view, as they correspond to the natural physiology of visual perception.

At the beginning of the 20th century, Ebenezer Howard developed the concept of "garden cities," laying the foundations of environmental psychology in urban studies. He pointed out the need for a citizen's daily contact with nature to preserve mental health and prevent social exclusion.

In the middle of the 20th century, architectural psychology was finally formed as an independent scientific discipline that arose at the intersection of environmental psychology and urban studies. Its appearance was due to the desire to find a solution to the problem associated with the monotony and facelessness of modernist buildings.

In 1960, the book "The Image of the City" by American urbanist Kevin Lynch was published, which became a real revolution in the field of urban planning. Lynch introduced the concept of mental maps into scientific use and demonstrated that the clarity of landmarks, nodes, and boundaries in an urban environment are key factors for spatial orientation and reducing the level of basic anxiety.

Almost simultaneously with Lynch, in 1961, Jane Jacobs's work "The Death and Life of Great American Cities" was published, which destroyed the idea of rigid functional zoning. In this book, Jacobs proved that safety and psychological comfort depend on the density of social contacts, the versatility of neighborhoods, and the informal control provided by "eyes on the street." During the same period, anthropologist Edward Hall developed proxemics, the science of human spatial needs. He scientifically substantiated the concept of personal distances and their

direct impact on the design of squares, parks, and transit zones.

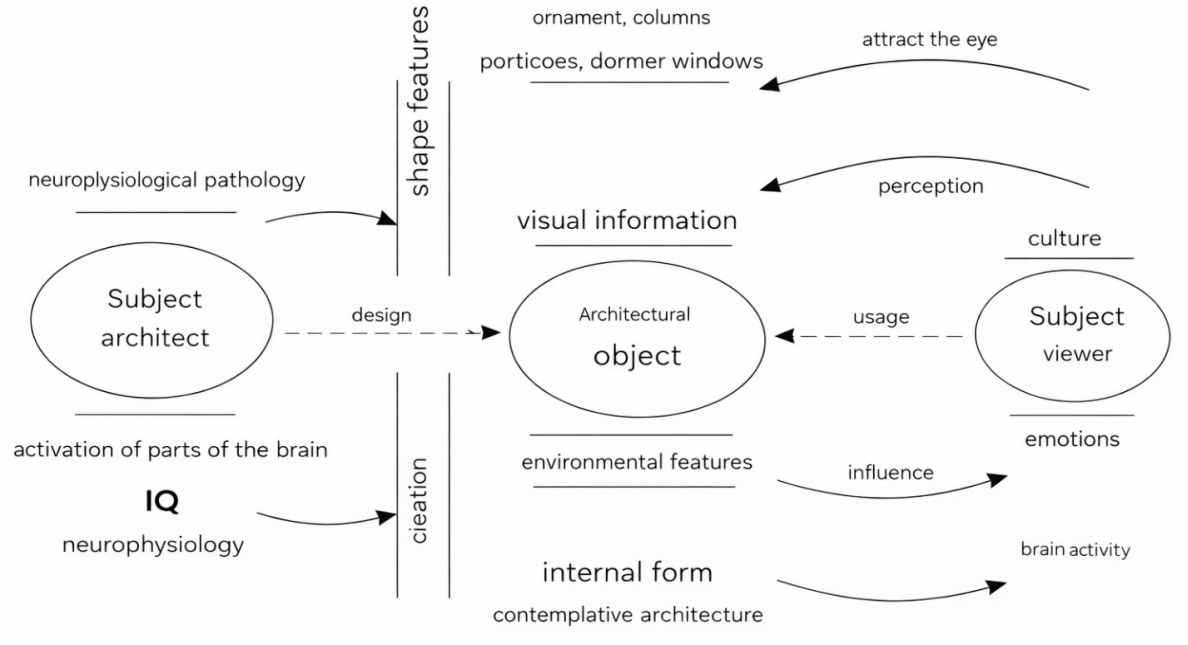
In the 1970s and 1980s, researchers focused on studying behavioral patterns. During this period, architect Christopher Alexander published his seminal work, The Timeless Way of Building, in which he proposed a humanistic approach to design. This approach is based on intuitive spatial archetypes that respond to people's deep emotional needs.

Sociologist William Whyte, who used the methods of hidden time-lapse photography to study social behavior in New York squares, made a significant contribution to the formation of the empirical database. His research revealed the genuine needs of townspeople, which are not limited to generally accepted norms, such as a convenient location for seating, sun protection, and the possibility of open space. At the end of the 20th century, the Danish architect Jan Gehl developed these ideas, popularizing the concept of "cities for people." He proved that buildings with a height of no more than 5–6 floors, active ground floors, and traffic restrictions are key factors contributing to the creation of a sense of belonging, security, and social integration.

Currently, research in this field is moving to a new level, covering neuroarchitecture and psychogeography. Researchers such as Colin Ellard are using innovative tools such as virtual reality (VR), wearable biometric sensors, mobile electroencephalography (EEG), and eye-tracking technologies (Shojazadeh H. R., Kazemi M., Shafizadeh A. A., 2014) to study a person's inner world and their interaction with the surrounding space.

This allows you to measure cortisol levels, heart rate, and brain activity of people in real time and with a high degree of objectivity when they interact with various elements of the urban environment. This step marks the final transition from an intuitive or philosophical understanding of architectural psychology to evidence-based design. The psycho-emotional well-being of the inhabitants of a megalopolis becomes a mathematically measurable quantity and the main criterion for the quality of the created spatial environment (Fig. 1).

Figure 1. *The scheme of studying architecture in relation to the human psyche (Vinogradova E. I., Kilimnik E. V., 2020)*



In recent decades, the influence of the urban environment on the human psyche has been actively taken into account in real projects. Many cities demonstrate how thoughtful architecture can change people's behavior and emotional state.

One of the most striking examples is the Superblock district in Barcelona. Here, traffic has been moved outside residential areas, and

the inner streets have turned into pedestrian spaces. As a result, noise and pollution levels have significantly decreased, and residents feel safe and in control of the environment. People began to go out more often, communicate more, and the space began to be perceived as "their own" rather than transit.

Another great example is the High Line Park in New York City, which was created on the site of a former railroad line. Its linear structure sets a calm rhythm of movement and creates a feeling of a "psychological corridor" where a person feels far from the urban chaos. Vegetation, city views, and alternating open and closed spaces help restore attention and reduce stress (Rakov A. P., Tankeev P. V., 2023).

The concept of a "city for people" is being actively implemented in Copenhagen. Narrow streets, a variety of facades, cafes on the ground floors and many places to relax create an atmosphere of comfort and safety. The human scale of the building helps to reduce anxiety and facilitate orientation, which is especially important for everyday comfort.

Singapore's experience is interesting, where skyscrapers blend harmoniously with vertical gardens and green terraces. This integration of nature into dense urban development reduces the feeling of space congestion. Studies show that even eye contact with greenery reduces stress levels and improves concentration (Nasar J. L., 2011).

In Tokyo, special attention is paid to the lighting and details of the streets. Soft, uniform light and active ground floors of buildings create a sense of security, even at night. A person perceives such an environment as predictable and "alive," which helps to reduce anxiety levels.

Modern medical centers in Scandinavian countries are a prime example of how color and materials can affect the perception of space. These centers use natural textures, soft shades, and plenty of daylight. This approach helps patients feel more relaxed, promotes speedy recovery, and reduces fear of the medical situation.

It is also worth noting how pedestrian zones have developed in Paris and Milan. Reducing car traffic and installing outdoor furniture have changed people's behavior. They began to stay on the streets longer, communicate with each other more often, and the streets themselves began to be perceived not as roads, but as public spaces.

Modern examples show that the spatial environment directly affects the perception of a city through scale, light, sound, greenery, and traffic management. When all these elements are taken into account, the city is perceived as comfortable, safe, and "humane." And people's behavior becomes more calm, open, and socially oriented (Table 1).

Table 1. – *The impact of the spatial environment on an individual's perception*

No.	The factor	Characteristic
1.	Physical characteristics of the space	The size, shape, lighting, and color of a room can significantly affect people's mood and behavior. For example, bright lighting can increase energy levels, while dark or too bright colors can cause discomfort.
2.	Acoustic environment	Environmental sounds, such as the noise of the city or calm music, can have a significant impact on our concentration and emotional state. Silence, on the contrary, promotes relaxation and concentration.
3.	Social aspects	The environment has a significant impact on the way people interact. Open spaces encourage communication and cooperation, while enclosed areas can create a sense of privacy or separation.
4.	Cultural values	Different cultures perceive and understand space in their own way. For example, in some societies, open spaces are valued for the opportunity to communicate, while in others they prefer privacy more.
5.	Psychological effects	Space can evoke various associations and emotions, which affects our perception. Familiar places can evoke nostalgia, while new and unusual spaces can arouse anxiety or curiosity.

No.	The factor	Characteristic
6.	Architectural features	The design of buildings and interiors also plays a significant role. Spaces designed with convenience and aesthetics in mind can improve overall well-being and increase productivity.

It should be noted that the study of the impact of the spatial environment on human perception involves a number of significant methodological and practical difficulties, which makes it difficult to obtain unambiguous and comprehensive results.

One of the main problems is the subjectivity of perception. People react differently to the same spaces depending on their age, cultural context, personal experience, and even their current emotional state. This makes it almost impossible to create a universal model that could accurately describe the reactions of all users of the environment.

The difficulty of studying the perception of the environment is because it consists of many components. Space affects a person simultaneously through many factors: lighting, sound, scale, density, color, materials, smells, and social activity. In real conditions, it is difficult to isolate the influence of each of these elements, as they interact with each other. Laboratory studies allow you to control variables, but at the same time, the realism of perception is lost. Field research, on the other hand, suffers from the impossibility of strict control.

Another difficulty is the limited methods that are used to measure perception. Most of the data obtained with their help is based on surveys, interviews, and self-reports, which can lead to distortions. People may not always be able to accurately understand and describe exactly how space affects them. Modern techniques such as eye movement tracking, neurophysiological measurements, and behavior analysis can help, but they require sophisticated equipment and ambiguous interpretation of results.

The time factor is equally important. The perception of space changes over time as a person gets used to a new environment. What seems uncomfortable or attractive at first may be perceived differently after weeks or months. This makes it difficult to assess long-term effects and requires lengthy studies, which are rarely carried out in full.

Another problem is the difficulty of applying the research results in practice. Even if certain patterns are identified, their implementation in real projects is often limited by economic, political, and technical constraints. Architects and urban planners have to make compromises, which reduces the accuracy of scientific recommendations.

In addition, there is a cultural and geographical dependence of perception. Solutions that are effective in one country may not be suitable for others due to differences in lifestyle, population density, and social norms. This makes it difficult to create universal design principles.

Finally, the rapid development of technology and lifestyle changes are also creating new challenges. The digital environment, remote work, and virtual spaces are changing the way humans interact with their physical environment, and science is not always keeping pace with these changes.

All these difficulties show that studying the influence of the spatial environment on human perception remains a difficult interdisciplinary task. It is difficult to draw accurate and universal conclusions in this area, and research requires a combination of different methods and approaches.

We believe that an integrated and interdisciplinary approach is needed to solve problems in studying the influence of the spatial environment on humans. It should include both qualitative and quantitative methods.

First, in order to overcome the subjectivity of perception, it is necessary to increase the sample of studies and take into account the diversity of users by age, culture and social experience. Comparative studies should also be conducted in different contexts. This will make it possible to identify not universal, but typical patterns that may be applicable to specific groups.

Digital modeling and virtual reality can be effectively used to study complex environments. These technologies allow you to change individual space parameters and track a person's reaction without losing the realism of perception. In addition, factor

analysis is used, which helps to identify the contribution of various environmental characteristics.

The limitations of measurement methods can be compensated by combining different data sources. Instead of relying solely on surveys, biometric metrics, motion tracking, behavior analysis, and neurophysiological methods are used. This allows you to get a more objective picture, especially if the data is compared with each other. The development of methods for interpreting these data also plays an important role.

The problem of the time factor is solved by conducting long-term studies in which perception is studied over a long period. Repeated measurements and monitoring of human adaptation to the environment are also used, which allows us to take into account the effect of habituation and identify stable perceptual features.

To improve the practical application of research results, it is necessary to strengthen the interaction between scientists, architects, and urban planners. This is achieved through the development of practical recommendations, standards, and design tools based on scientific evidence. In addition, scientists can participate in real projects at an early stage.

Cultural conditioning of perception is taken into account through local research and adaptation of solutions to a specific social and geographical context. Instead of universal models, flexible principles are being formed that allow for variability.

Finally, in the context of technological change, it is essential to integrate the study of the physical and digital environments, considering them as an interconnected system. This approach allows us to better understand the impact of hybrid spaces and new modes of human interaction with our surroundings.

Conclusions

The spatial environment surrounding a person significantly impacts perception, behavior, and emotional state. Urban space serves not only as a functional shell but also as an important psychological factor, forming a sense of comfort, security, identity, and social engagement. The quality of architectural solutions, construction scale, presence of natural elements, and the level of visual and sensory stress directly affect cognitive processes and a person's general well-being.

Modern urban planning requires considering these aspects at all design stages. Interdisciplinary research and user behavior data are used for this purpose. Implementing architectural psychology principles allows for creating more sustainable, humane, and adaptive urban spaces aimed not only at economic efficiency but also at improving the population's quality of life.

References

Vinogradova E. I., Kilimnik E. V. Analysis of architectural and psychological studies of the late 20 th – early 21 st centuries // Artikult. – No. 3 (39). 2020. – P. 137–148.

Rakov A. P., Tankeev P. V. Urban planning and architecture // Urban planning and architecture Founders: Samara State Technical University. 2023. – Vol. 13. – No. 4. – P. 171–176.

Nasar J. L. Environmental psychology and urban design // Companion to urban design. – Routledge, 2011. – P. 162–174.

Shojazadeh H. R., Kazemi M., Shafizadeh A. A. Environmental psychology in architecture and urban design // Research Journal of Recent Sciences, ISSN. 2014. – Vol. 2277. – 2502 p.

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