Evaluation of knowledge about diabetes among different population groups in the Kyrgyz Republic

Policy Brief

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HEALTH POLICY ANALYSIS CENTER

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1 │Introduction

Diabetes is one of the most common chronic diseases worldwide. According to the International Diabetes Federation (IDF), more than 537 million people currently live with diabetes, and about 90% of all cases are type 2 diabetes (T2D).

Diabetes is a serious public health issue at both global and national levels. Increasing public knowledge and awareness about diabetes, its risk factors, and preventive measures is a key component of public health strategies. Regular educational initiatives and information campaigns can reduce incidence, improve quality of life, and promote early detection.

Effective prevention and control of diabetes are possible only through timely implementation of preventive measures and adequate treatment. Public awareness of symptoms and risk factors plays an important role in increasing awareness of diabetes, motivating timely diagnosis and initiation of treatment, as well as reducing the likelihood of severe complications.

This policy brief represents key findings of the study evaluating the level of diabetes knowledge among population of the Kyrgyz Republic. It also examines awareness of existing outpatient drug provision and subsidized access to medicines for diabetes treatment.

2 │Methodology

The main objective of this study was to collect and analyze data to evaluate public knowledge about diabetes, including diagnosis, risk factors, possible complications, and awareness of medicine benefit programs.

To achieve this objective, a comprehensive methodology was applied. It included:

Collection and analysis of secondary data – review of global and national data on diabetes using open sources, scientific publications, and official statistics from the Ministry of Health of the Kyrgyz Republic, the Mandatory Health Insurance Fund, and other organizations.

Conducting a population survey – using a structured questionnaire distributed in person and electronically via Google Forms in Russian and Kyrgyz.

Data collection was conducted from August to October 2024. Microsoft Excel was used for data entry, processing, and primary analysis.

The survey involved 664 respondents aged 18 and older living in Bishkek and all other regions of Kyrgyzstan.

3 │General description of the situation with diabetes

According to the Electronic Health Center under the Ministry of Health of the Kyrgyz Republic (EHC), at the beginning of 2024, the number of registered patients with diabetes was 84,020. Of these, 3,560 had type 1 diabetes and 80,500 had type 2 diabetes. As in most countries of the world, the increase in prevalence of diabetes in Kyrgyzstan is mainly due to type 2 diabetes.

The number of cases of diabetes is growing every year. From 2015 to 2023, the number of registered patients increased by 1.7 times. The growth was driven by newly detected cases of type 2 diabetes. This is facilitated by national measures in the field of non-communicable diseases (NCDs) aimed at

identifying and registering patients with hypertension and type 2 diabetes. Each year, newly diagnosed cases account for more than 10% of the total number of registered patients with type 2 diabetes.

Figure 1. Number of registered patients with diabetes in the Kyrgyz Republic, 2015–2023.
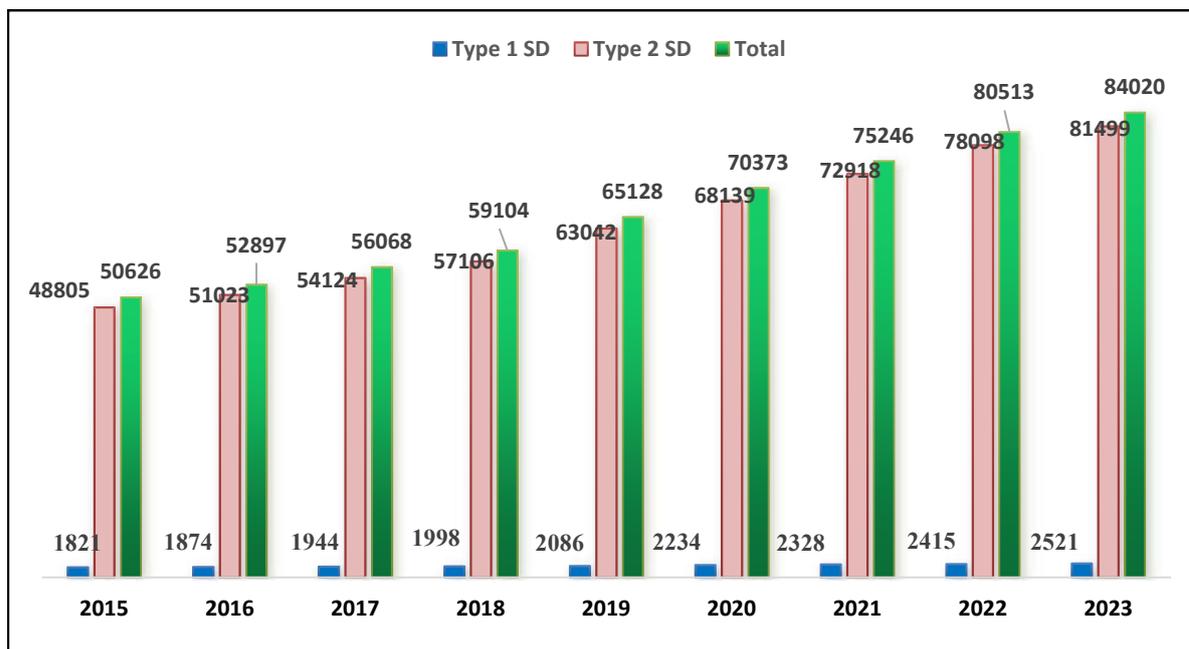
Source: Electronic Health Center, 2023.

Frequency of complications in type 1 and type 2 diabetes: neuropathy – 59.5% and 50.8%; nephropathy – 21.5% and 7.4%; retinopathy – 38.0% and 24.0%.

4| Key Findings

Sample

The survey covered 664 respondents aged 18 and older. The sample included both urban and rural areas, with a predominance of rural areas. The most active participation was from residents of Bishkek—120 respondents—and Naryn region—118 respondents.

By place of residence: rural areas – 408 people (61.4%), urban areas – 256 people (39.6%)

By gender: women — 529 people (79.7%), men — 135 people (20.3%). By age: 18–27 years old — 95 people (14.3%), 28–37 years old — 142 people (21.4%), 38–47 years old — 182 people (27.4%), 48–57 years old — 136 people (20.5%), 58–67 years old — 86 people (13.0%), 68 years old and older — 23 people (3.5%).

By level of education: higher education — 344 people (52%), secondary specialized education — 177 people (26.7%), secondary education — 143 people (21.5%).

Overall, the sample included a larger number of respondents from rural areas, with about 80% of participants being women and people aged 38–47. More than half of the respondents had higher education. This sample structure made it possible to assess the level of knowledge about diabetes among various demographic groups of the population in the Kyrgyz Republic.

Figure 2. Number of respondents by region and place of residence (n=664)
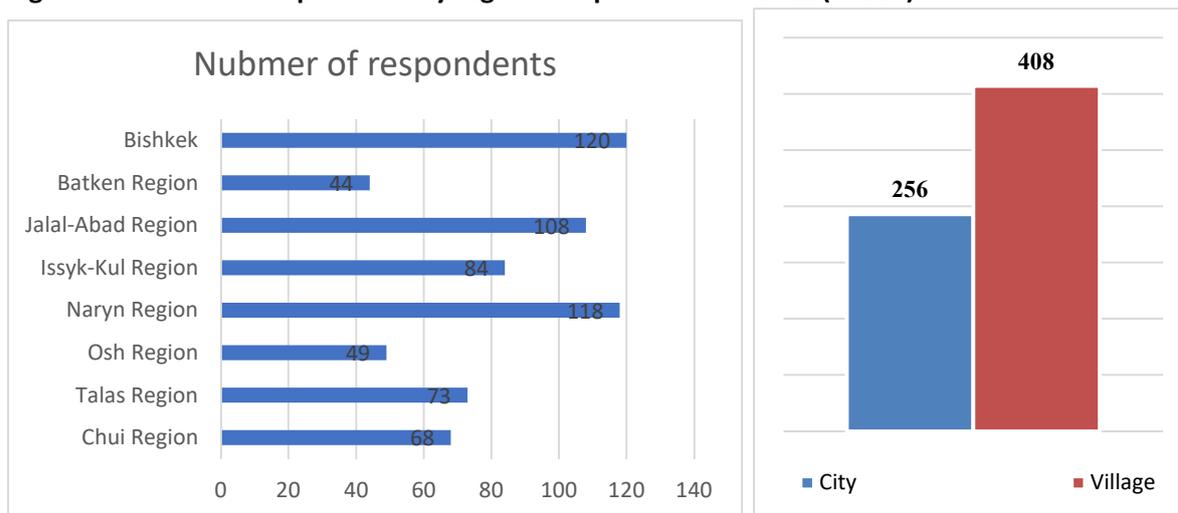
Level of knowledge about diabetes among population

Public awareness of the diabetes symptoms, risk factors, preventive measures, and prevention of complications plays an important role in developing strategies for the country's healthcare system, as well as in raising awareness and encouraging active participation of the population in disease prevention.

According to the survey results, more than 82% of respondents across the country answered "yes" to the question, "Do you know what diabetes is?" At the same time, 13.7% said they were unsure of their knowledge, and 4.1% said they did not know what diabetes was.

The highest level of awareness was demonstrated by respondents in Naryn region (16%), Bishkek (15.2%), and Jalal-Abad region (12.3%).

At the same time, Jalal-Abad region also had the highest percentage of respondents who answered, "I don't know about diabetes" (2%) and "I've heard of it, but I'm not sure" (2%).

For comparison, the percentage of respondents who answered "I don't know about diabetes" was 1.1% in the Naryn region, in Bishkek and Osh region – 0.9% each; in Batken and Issyk-Kul regions – 0.8% each; in Talas region – 0.6%; in Chui region – 0.2% (see Figure 3).

Figure 3. Evaluation of knowledge about diabetes by region of the Kyrgyz Republic, % (n = 664)
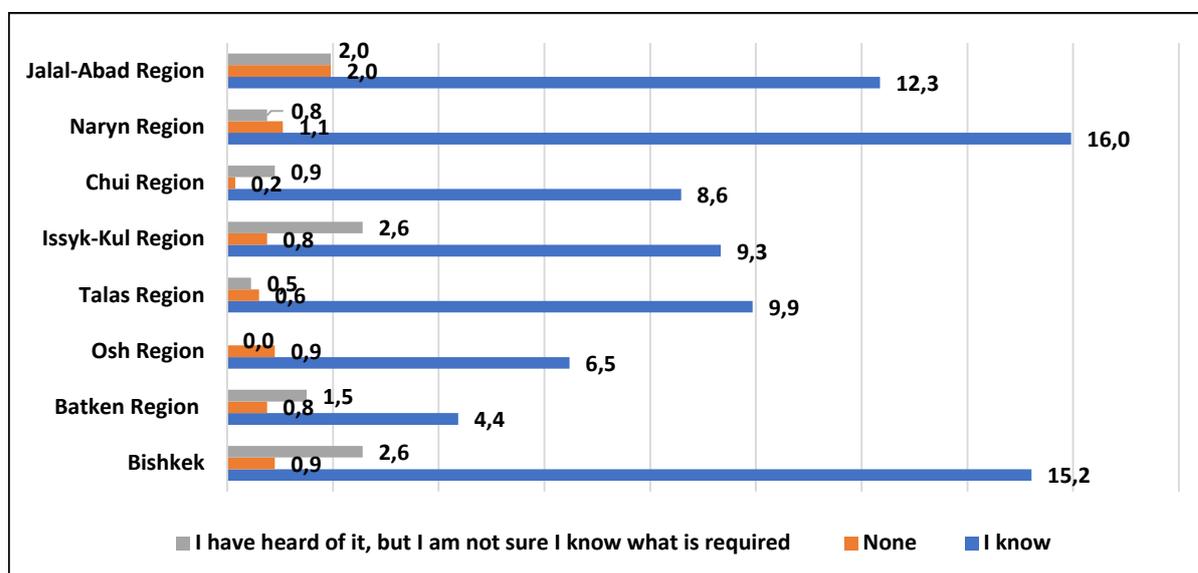
Knowledge level about diabetes by age and education

Since diabetes development risk increases with age, it was important to assess the respondents' level of knowledge about this disease, its symptoms, and risk factors in different age groups.

The survey results showed that the highest level of awareness was recorded among respondents aged 38–47 – 147 people (22.1%), following by age categories: 58 years and older – 117 people (17.6%); 48–57 years – 104 people (15.7%); 28–37 years – 96 people (14.5%); 18–27 years – 82 people (12.3%).

The 18–27 age group also had the lowest percentage of "don't know" responses – 0.5% (3 people). In the 38–47 age group, the percentage of "don't know" responses was 2.7% (18 people).

Awareness also varies significantly depending on the level of education: among respondents with higher education – 43%; with secondary specialized education – 24%; with secondary education – 16% (Figure 4).

The data obtained show that the level of knowledge about diabetes is uneven and depends on both age and level of education. The highest level of awareness is characteristic of middle-aged and older people, which may be associated with a higher risk of the disease and personal or family experience. At the same time, the younger age group (18–27 years), despite minimal percentage of "don't know" responses, demonstrates a relatively low level of general awareness, which indicates insufficient involvement in preventive programs.

High level of awareness among respondents with higher education indicates the significant role of the education level in shaping health knowledge. This highlights the need for targeted information and education campaigns among the population with secondary and vocational education, as well as among young people.

Figure 4. Data on evaluating knowledge about diabetes by age and education, % (n = 664)
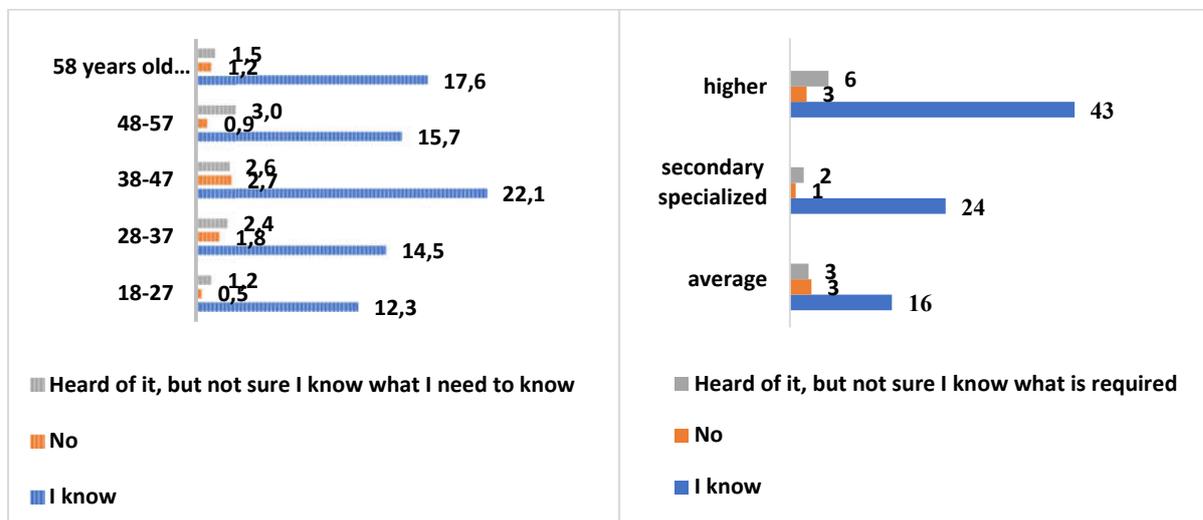
Awareness of risk factors

The survey results showed that population has a high level of knowledge about risk factors for diabetes. 86.9% of respondents said they were aware of diabetes risk factors. Only 3.1% of participants said they did not know any risk factors.

Major risk factors most frequently mentioned by respondents included overweight – 24.6%; sedentary lifestyle – 20.1%; heredity – 17.8%; arterial hypertension – 14.3%.

All five risk factors listed in the questionnaire were familiar to 11.5% of respondents (see Figure 5).

A high level of knowledge about risk factors indicates that there is a general understanding of the relationship between lifestyle and diabetes development. However, low proportion of respondents who are aware of all risk factors (11.5%) points to the need for more targeted information campaigns. It is particularly important to focus on a comprehensive overview of risk factors rather than fragmentary knowledge so that population is more aware of the multifactorial nature of the disease.

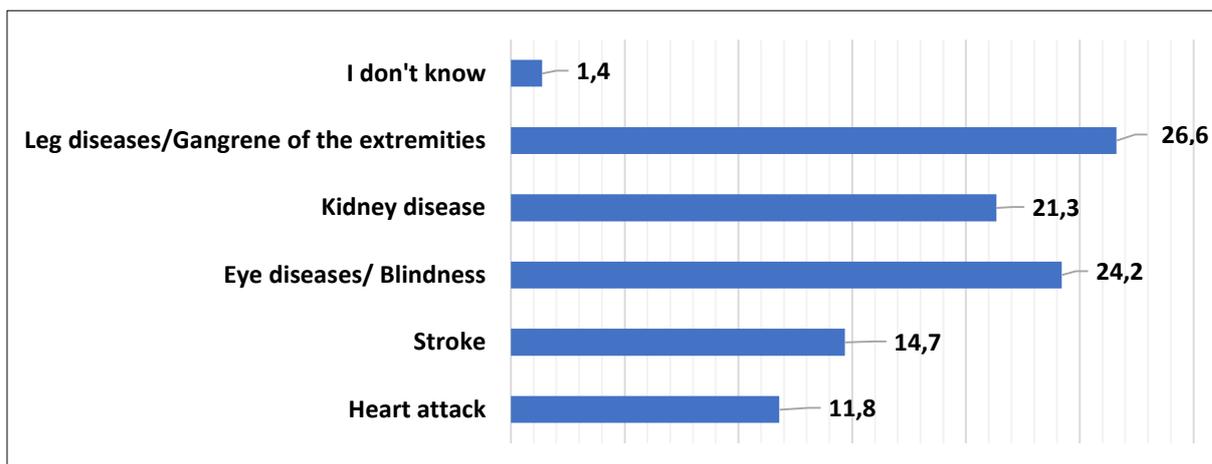**Figure 5. Respondents' knowledge of diabetes risk factors, % (n = 664)**
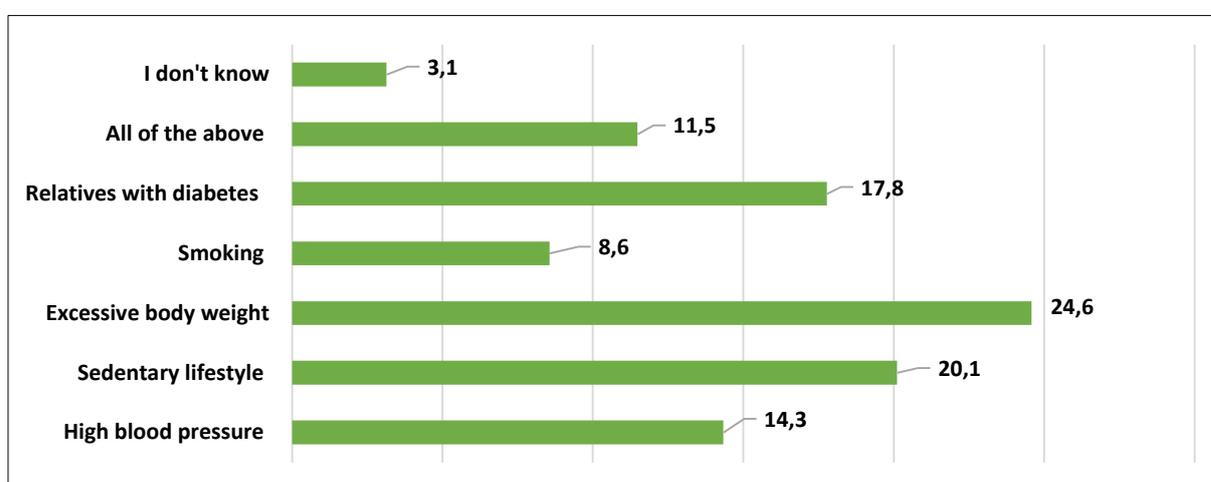
Awareness of complications

Almost all respondents noted that they were aware of possible diabetes complications. The most frequently mentioned complications were: foot disease/gangrene of the extremities – 26.6%; eye disease/blindness – 24.2%; kidney disease – 21.3%; stroke – 14.7%; heart attack – 11.8%. At the same time, only 1.4% of respondents said they were unaware of possible complications (Figure 6).

The results show that population largely associates diabetes complications with damage to the limbs, eyes, and kidneys, i.e., complications that have more pronounced clinical manifestations and a noticeable impact on quality of life. At the same time, cardiovascular complications (heart attack, stroke), which are the leading causes for death among people with diabetes, were mentioned less frequently.

This indicates the need to focus information and awareness campaigns on the relationship between diabetes and cardiovascular disease and to raise awareness of "hidden" complications that often lead to disability and premature death (Figure 6).

Figure 6. Respondents' knowledge of possible diabetes complications, % (n = 664)
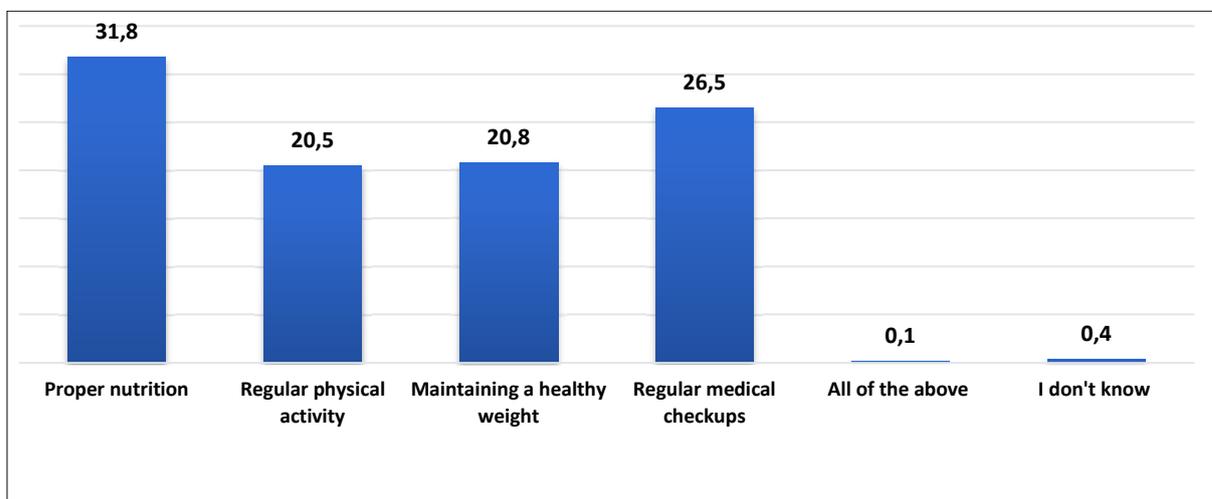

Knowledge of prevention measures

Analysis of the population's knowledge about diabetes prevention showed that most respondents are aware of some specific aspects of disease prevention. Thus, 31.8% of survey respondents noted the importance of proper nutrition, 26.5% noted regular medical examinations, 20.8% noted maintaining a normal weight, and 20.5% noted regular physical activity. At the same time, only 0.1% of respondents pointed to a comprehensive combination of all the measures listed, which indicates inadequate understanding of a holistic approach to prevention. At the same time, only 0.4% of participants reported a complete lack of knowledge about prevention.

The results emphasize the need to improve information and educational activities and integrate educational programs at the primary health care level aimed at raising understanding of diabetes prevention among general population (Figure 7).

Figure 7. Respondents' knowledge of diabetes prevention measures, % (n = 664)

The analysis of knowledge about diabetes prevention by age group shows certain differences in the perception and priorities of disease prevention measures. Among young respondents (aged 18–27), the greatest attention is paid to non-medical measures – proper nutrition, regular physical exercise, and maintaining a normal weight (45%). However, only 14% of this group noted all preventive measures, and only 15% recognized the need for regular medical examinations. In contrast, respondents over 57 years of age showed the highest level of awareness of a comprehensive approach to prevention, with 31% naming all of the measures listed. The 28–37 (33%) and 38–47 (26%) age

groups tend to focus on regular medical check-ups, which may be related to mandatory annual examinations as part of their work. These data indicate that perceptions of the prevention importance change with age: young people focus on lifestyle, while older generations focus on medical monitoring, Figure 8.

Figure 8. Respondents' knowledge of diabetes prevention by age, % (within each age group)
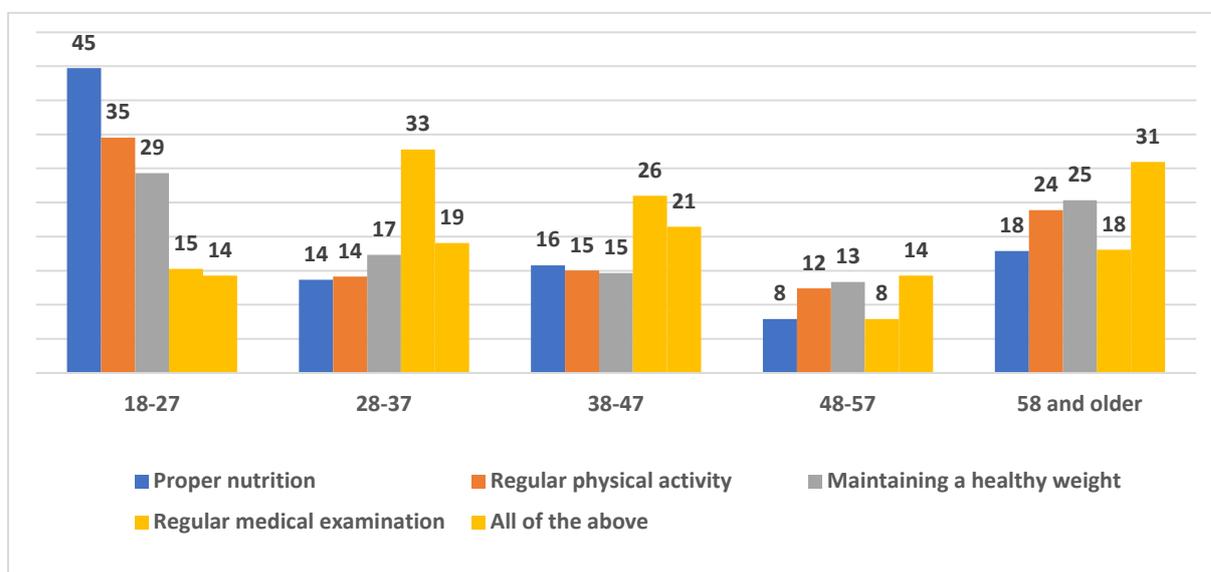
Respondents diagnosed with diabetes

Measuring blood glucose levels is one of the basic laboratory tests provided for in the State Guaranteed Benefits Program of the Kyrgyz Republic. All citizens registered in their health facilities have the opportunity to undergo this test free of charge.

According to the survey results, only 45% of respondents had their blood glucose levels measured in the last year, with 11% of them diagnosed with type 1 or 2 diabetes or prediabetes.

These data reflect both limited coverage of the population by screening tests and a significant proportion of individuals with identified carbohydrate metabolism disorders. Given the increase in the incidence of diabetes, the results indicate the need to expand preventive measures and improve the availability of screening services at the primary health care level.

Table 1. Data on the number of respondents diagnosed with diabetes (n=664)

Question	Yes	No
Have you had your blood glucose measured in the last year?	300 (45%)	364 (55%)
Have you been diagnosed with type 1 or type 2 diabetes or prediabetes in a health facility?	72 (11%)	592 (89%)

Most survey respondents (71%) expressed interest in receiving information about diabetes, its symptoms, methods of diagnosis and prevention, which indicates a high demand amongst population for education. At the same time, 29% of respondents said they did not need additional information on this topic. Analysis of preferences shows that the most popular form of information provision is free medical examinations (34.6%), which combine both an educational component and practical benefits. A significant proportion of respondents also support the use of traditional media resources, such as

television and public campaigns (20.1%), while 11.9% are in favor of introducing modern digital tools, such as mobile applications and specialized chats about diabetes. These results indicate the need for a comprehensive approach to shaping information policy, with an emphasis on combining mass communication channels and interactive forms of engagement with population (Figure 9).

**Figure 9. Proposed measures to raise awareness of diabetes, %**
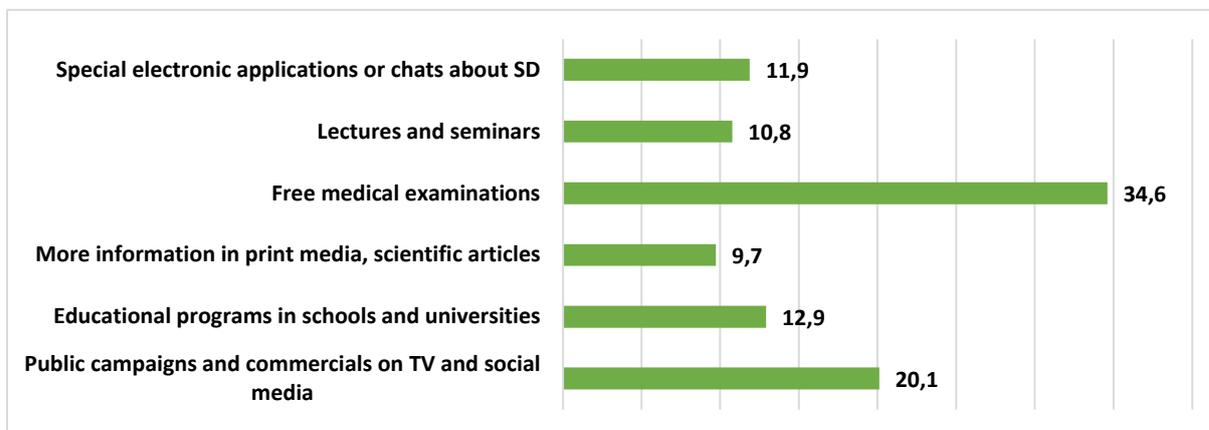
Awareness of Medicine Benefit Programs

The survey results show that out of 664 respondents, 311 (47%) are aware of the available subsidized medicines. The level of awareness ranges by region from 58% (Naryn region) to 32% (Batken region).

Respondents aged 58 years and older are more aware of possible receiving a subsidized prescription (13%) as compared to younger generation (6.9%).

Figure 10. Awareness of subsidized pharmaceutical provision by age, %
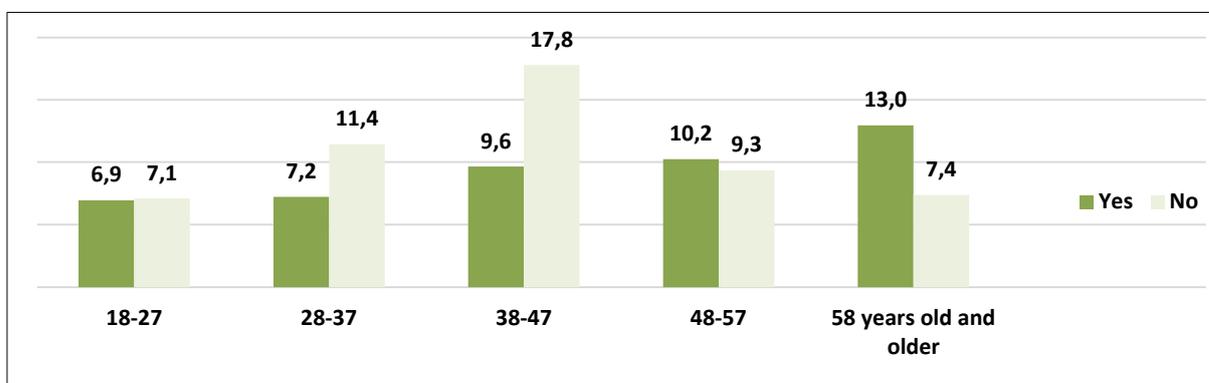
5|Conclusion

The objectives of this study were to identify the level of public awareness regarding the symptoms, detection methods, risk factors, complications, and preventive measures of diabetes.

According to the study results, overall level of knowledge about diabetes amongst population of Kyrgyzstan is moderate: symptoms of hyperglycemia and a need for glucose monitoring are well known, but there are gaps in understanding risk factors, complications, and preventive measures.

Inadequate awareness of subsidized programs limits patients' access to medicines, while high public interest in educational initiatives creates potential for successful awareness campaigns.

Scale of the problem, rapid increase in prevalence, and risk for severe diabetes complications require systemic measures at both governmental and societal levels. Awareness raising, early diagnosis,

prevention of complications, and promotion of healthy lifestyle are key tools for enhancing patients' quality of life and reducing the economic burden of diabetes.

Practical recommendations

Develop a system for preventive measures using digital technologies among the population on health issues, designed for different social and age groups.

Education and awareness:
- Regular campaigns about symptoms, risk factors, complications, and prevention of diabetes.
- Inclusion of diabetes education in primary health care programs and awareness-raising initiatives.

Access to subsidized medicines:
- Informing the population about subsidized programs and the procedure for obtaining them.
- Creation of accessible instructions and online resources for patients.

Development of digital technologies:
- Development of a health management system using digital platforms for all age and social groups.

Creation of electronic applications with the possibility of:

- access to regulatory documents and educational materials;
- receiving information about benefits and subsidized medicines;
- online consultations with health professionals through a personal account.

Prevention and Healthy Lifestyle

- Implementation of diabetes prevention programs within families, communities, and educational institutions.

- Promotion of physical activity, healthy nutrition, and prevention of smoking and alcohol consumption.

- Raising awareness of the benefits of consuming vegetables and fruits.

Early Diagnosis and Complication Control

-Regular glucose monitoring for high-risk groups.

-Ensuring access to preventive check-ups and consultations for timely detection of complications.

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