Health Status and Morbidity Trends among Student Youth: Insights from Southern Kyrgyzstan

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Abstract: Students' health situation significantly influences their academic performance and general well-being, particularly since higher education can lead to major lifestyle changes that could lead to chronic health disorders. This study evaluated students' health using epidemiological, analytical, and statistical research techniques. The results showed a general decrease in health markers over their academic careers; almost half of the students examined had chronic diseases—69% in the main group and 56% in the control group ($p > 0.05$). The study revealed notable increases in the frequency of gastrointestinal ailments, ophthalmic conditions, and dental cavities. From 239.6 ± 6.0 per 1,000 persons in 2021 to 280.4 ± 8.3 per 1,000 in 2023, primary morbidity rates increased by 17.2% ($p < 0.05$). Six main nosological categories—that of illnesses of the digestive and respiratory systems, ophthalmic problems, viral and parasitic diseases, and disorders of the ear and mastoid process—also showed increases in morbidity. These results emphasize the great importance of early diagnosis and treatment of chronic illnesses and related risk factors as well as of preventative actions aimed at encouraging good lifestyle choices. Given the alarming health trends, higher education institutions must provide ideal settings that promote student health and slow down the development of chronic diseases.

Keywords: Student health, chronic diseases, morbidity trends, preventive measures, higher education.

1. Introduction

The widespread prevalence of socially important diseases—both infectious and non-infectious—among a large portion of the population has been greatly promoted by the degradation of socio-economic living conditions combined with environmental damage, insufficient sanitary and epidemiological measures, food safety concerns, and continuous lack of access to clean drinking water. Particularly evident in vulnerable populations, such as university students, these health issues emerge Especially for medical students who have an academic load and health burden almost twice as high as those studying in non-medical specialties, the dynamic interaction of these elements produces a complicated health terrain. The challenging requirements for medical education in Kyrgyzstan severely affect students' physical and mental health, so strong and flexible health support services are very essential [1].

Underfunding, unequal access to health services, and a lack of resources for preventative treatment and health education define Kyrgyzstan's healthcare system's multiple systematic problems. Notwithstanding these constraints, the importance of enhancing the integration of student health into more general public health plans is becoming more and more acknowledged. Although young people—including students—have basic understanding of good living, scientific data indicates that many of them fail to transform this information into persistent health-promoting activities [2]. This discrepancy emphasizes the crucial requirement of focused treatments to address the awareness-to- practice discrepancy. Characterized by their own socioeconomic and environmental dynamics, Southern Kyrgyzstan offers a particular set of health difficulties. One of the biggest universities in the area, Osh State University attracts a varied student body, which makes it perfect environment to investigate the junction of education, health, and the healthcare system. Research on the health and morbidity of students in this area is lacking, hence important knowledge gaps on the influence of these elements on their well-being remain open [3].

The aim of this study is to evaluate the health condition and morbidity trends of the population in Southern Kyrgyzstan, specifically targeting students at Osh State University. The study aims to connect its results to the current healthcare system in order to uncover practical ways for improving student health outcomes, augmenting preventative care measures, and tackling systemic healthcare issues. The findings will guide the formulation of targeted health interventions, policy suggestions, and strategies to enhance the incorporation of student health into the overarching healthcare system of Kyrgyzstan.

2. Materials and methods of research:

The Kyrgyz Republic's (KR) official statistical reports—more especially, the "Population Health and Education in the Kyrgyz Republic" report for the years 2019–2023—as well as report form No. 12, "Report on the Incidence and Preventive Work of CSM"—for the Osh, Batken, Jazhal-Abad, and Osh regions for 2020–2023. Furthermore included were medical examination data of Faculty of Medicine, Osh State University Medical Clinic, patients derived from medical exams of Osh State University (OSU) students carried out between 2021 and 2023. The study used a spectrum of analytical, epidemiological, sociological, and statistical research approaches. Using demographic and medical data taken from official state statistics reports, the study of health status and morbidity trends was undertaken. Examined were important variables for the southern Kyrgyz Republic from 2019 to 2023: birth rate, death rate, natural population growth, overall morbidity (per 100,000 people), and morbidity structure (given as percentages). The International Statistical Classification of Diseases, 10th version (ICD-10), guided the definition of morbidity. Under the direction of certified medical experts, a thorough medical examination was conducted for an evaluation of student health and morbidity. Standard statistical technique was used to ascertain the sample size, which came out to be 740 students—15% of the entire student population of the medical faculty—five thousand. Among them, 278 were men and 462 were women. 370 students from the second and third years registered in the programs "Dentistry," "Medical and Preventive Medicine," and "Pharmacy," made up the main study group. Students in third year majoring in "Medical Science" comprised the control group. Apart from these evaluations, the general morbidity of students was examined using the frequency of visits to medical facilities for each 1,000 students throughout the years 2021–2023. Moreover, morbidity connected to temporary disability per 100 students was assessed using total days of disability as well as case count.

Using MS Excel and Epi-Info tools, the morbidity data gathered as well as the results of sociological studies were statistically analyzed. Calculated were extensive and intense indicators using average values (M±m). The Student's t-test and P-value for error-free prediction allowed one to evaluate the dependability of the outcomes. This study was conducted in strict adherence to the ethical principles outlined in the Declaration of Helsinki, ensuring the protection of the rights, privacy, and well-being of all participants throughout the research process [4].

3. Results and Discussion:

With about 5,000 students registered in its medical programs now, Osh State University (OSU) has been known as a worldwide hub for higher medical education during the previous two decades. Of these pupils, 85–90% come from the southern parts of the Kyrgyzes Republic. Considering this demographic concentration, it is essential to assess the health situation of students by means of a thorough

investigation of medical and demographic health indicators as well as the morbidity trends of the population in the southern Kyrgyzstan.

Identifying possible health hazards arising from adolescence and guiding population-level as well as personal health choices depend on a methodical assessment of the overall health state of the society. With particular consequences for the student population, these findings are essential for guiding sensible public health policies meant to be preventive and promoting of health. Based on official figures supplied by the Ministry of Health of the Kyrgyz Republic, studies have been undertaken to evaluate the demographic health situation of the Kyrgyz Republic and its southern areas during a five-year period (2019–2023).

Any population's health state is set by a complicated interaction of environmental, socioeconomic, and anthropometric elements. As Table 1 shows, analysis of demographic trends for the period 2019–2023 indicates significant unfavorable changes in the health scene of the population of the republic. These patterns highlight the urgent necessity of focused public health campaigns meant to solve the growing health issues among the population, especially in relation to student health in the southern parts of Kyrgyzstan.

Table 1. Medical and demographice indicatorsof the population of the Southern regions of the Kyrgyz Republic for Year 2019 and 2023. (per 1000 population)

Indicators	of KR		Jalalabad. region		Osh region		Batken region		Osh	
	City 2019	2023	2019	2023	2019	2023	2019	2023	2019	2023
Birth	Rate 26,9	20,6	26,3	23,3	26,1	23,8	29,1	25,4	44,5	18,8
Natural growth, Natural population growth	21,7	16,2	21,7	17,9	21,8	17,2	21,7	20,6	39,2	19,5
Mortality	5.2	4.4	4.6	4.1	4.3	3.8	5.2	4.00	5.3	4,55

3.1 Analysis of Demographic and Health Indicators in the Kyrgyz Republic (2019-2023)

Table 1 shows that during the past five years, important demographic indices in the Kyrgyz Republic have clearly decreased. Showing an overall decrease of 23.6%, the birth rate, stated per 1,000 people, dropped from 26.9 in 2019 to 20.6 in 2023. Comparably, from 21.7 in 2019 to 16.2 in 2023, the natural population growth rate dropped dramatically as well, by 24.4%. The mortality rate declines in line with these trends; from 5.2 deaths per 1,000 inhabitants in 2019 to 4.4 in 2023.

Every area analyzed indicates an overall decrease in birth rate and natural population increase in line with this. Batken (25.4), Osh (23.8), and Jalal-Abad (23.3) had notably the highest birth rates in 2023. Osh city, where the birth rate dropped by more than two-fold, from 23.8 to 10.2, and the natural population growth rate halved from 21.7 to 10.9, showed the most significant declines in these metrics, nonetheless, compared to 2019. Particularly in the Osh area, this notable drop in demographic growth points to a slowing down in population expansion, a trend most likely related to continuous socio-economic changes in the nation including variations in fertility patterns, economic conditions, and migration trends [5].

Death still is a vital measure of public health in parallel. With 31,500 fatalities recorded overall in the Kyrgyz Republic in 2023, 2.2% less than in the year before. Reflecting some improvements in public health outcomes, the mortality rate, stated per 1,000 people, dropped from 5.2 in 2019 to 4.4 in 2023. Regionally, a modest drop in the death rate was also seen in Osh (from 5.3 to 4.5 per 1,000 people), Batken (from 5.2 to 4.0), and Jalal-Abad (from 4.6 to 4.1). These declines show an overall improvement in health conditions, however further research on the underlying reasons and regional variances is advised [6].

A vital mirror of public health condition and the efficiency of the healthcare system, morbidity rates indicate this A complex interaction of elements shapes primary morbidity, which is the first incidence of disease within a population: availability and quality of healthcare services, accuracy and comprehensiveness of health data reporting, demographic and medical activity levels of the population, and developments in medical science and healthcare infrastructure [7]. Understanding the demographic situation depends on knowing the main morbidity of the population, as Figure 1 shows; so, public health policy and the enhancement of the healthcare system depend on this knowledge as well.

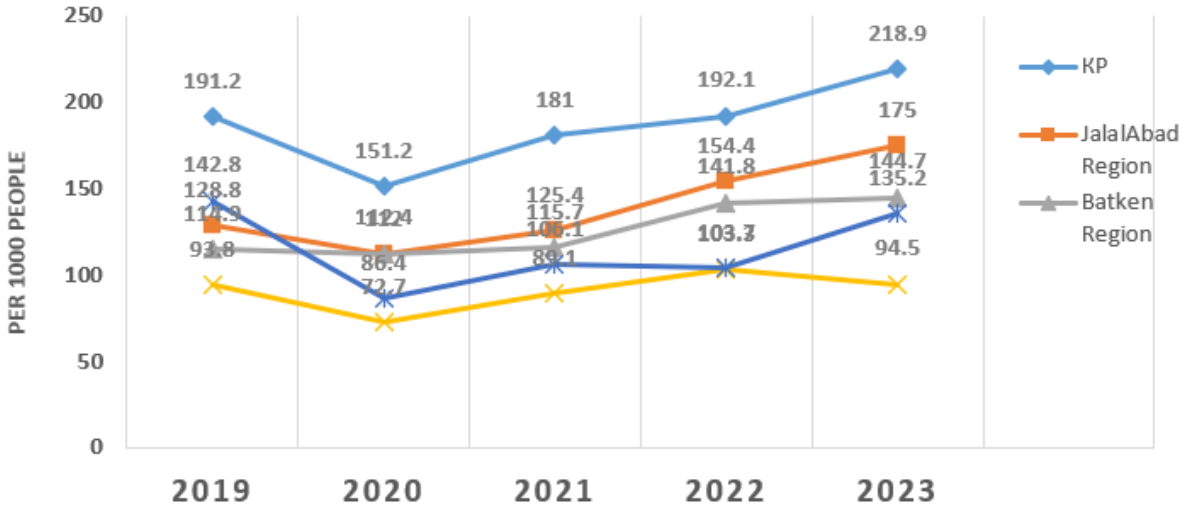

Figure 1. Dynamics of primary morbidity rates in the southern regions of the Kyrgyz Republic (per1000people)

3.2 Primary Morbidity and Health Assessment in Southern Kyrgyzstan: Trends and Student Health Analysis

Representing an upward trend of 14.5%, Figure 1 shows that in 2023 the main morbidity rate in the Kyrgyz Republic (per 1,000 people) was 218.8, compared to 201.2 in 2019. Two areas especially showed this increase in morbidity: Batken, with an increase of 25.8%, and Jalal-Abad, where the rate rose by 35.8%. Osh, on the other hand, saw a little decline in main morbidity—5.4%—which brought its rate to 209.5 per 1,000 persons. By a margin of 2.3, this statistic stays well below the national average. Particularly in terms of population increase and the escalation of urban migration, the socio-demographic scene in the southern Kyrgyzstan has changed significantly over the previous five years. This has put great strain on the infrastructure of metropolitan areas, which could help to change health indices [8].

The integration of family medicine into the healthcare system may be the reason for the observed rise in morbidity across the research period. Still, one cannot completely disregard the effect of socioeconomic elements [9]. These patterns point to the possible presence of undiagnosed or underreported health issues, therefore indicating an unmet need for medical treatment among the community even with a rise in main morbidity and a quite high death rate. Particularly university students are seen to be a high-risk population for the development of health problems, which emphasizes the need of using sensible and easily available preventative healthcare policies [10]. Students encounter several risk factors during their academic route that could affect their well-being: academic stress, sleep problems, poor diet, and social obstacles all of which might help to start different diseases [11].

Based on the findings of in-depth medical exams, two groups—the primary group (medical students) and the control group (students from other faculties)—were compared in order to more precisely evaluate the somatic health of students [12]. This study exposed quite comparable morbidity trends in both groups. Remarkably, during the medical assessment, 42.5% of main group students and 32.6% of control group members claimed no health issues. But a worrying pattern started to show: as students advanced through their degrees, their general state of health dropped. About half of the students questioned had chronic illnesses; of the main group, 69% and of the control group, 56% were afflicted This result implies that fewer students reported excellent health throughout their school years.

Every child had an average illness count of 1.2; some of them presented with up to three or more chronic disorders. Common ailments were dental caries, eye problems, and gastrointestinal issues, all of which exhibited increasing frequency as students progressed in their studies. Examining the students' health state closely showed a broad range of health aberrations; across both groups, stomach and respiratory disorders were the most often occurring. These results highlight the need of preventative care and health education in this vulnerable population as they underline the need of focused healthcare interventions to solve the increasing load of chronic diseases among university students.

Table 2. Intensive morbidity index for the main nosology classes of the examined students (per 100 examined students)

Disease class	Main group (n =370)	Control group (n =370)	t	P
	$P_{1\pm}$ m_1	$P_{2\pm}$ m_2		
Respiratory diseases	29.2±2.4	19.2±2.0	3.2	< 0.01
Diseases of the genitourinary system	12.77 ±1.7	6.5±1.3	2.9	< 0.01
Digestive diseases	30.3 ±2.4	20.0±2.1	3.2	< 0.01
Injuries and poisoning total	16.8 ±1.9	11.4 ±1.7	2.2	< 0.01
Diseases of the eye and its appendages	17.6±2.0	11.1±1.6	2.5	< 0.01
Diseases of the circulatory	system 11.4±1.7	3.8±1.0	3.0	< 0.01
Diseases of the skin and subcutaneous	tissue 18.1±2.0	11.4±1.7	2.6	< 0.01
Some infectionsDiseases of	the nervous system 15.7±1.9	10.5±1.6	2.1	< 0.01
Diseases of the nervous system	11.9±1.7	8.4±1.4	1.6	>0.05
Diseases of the ear and mastoid	process 14.3±1.8	8.9±1.5	2.6	< 0.01
Diseases of the endocrine system	3.8±1.0	1.6±0.4	2.0	< 0.01
Diseases of the blood, hematopoietic organs	12.7±1.7	7.8±1.4	2.2	< 0.01
Other	15.1±1.9	10.3±1.6	1.9	>0.05

3.3 Health Profile of University Students: A Detailed Analysis of Morbidity Patterns

Table 2 shows that students in the experimental and control groups had somewhat different rates of gastrointestinal problems. With a statistically significant difference (< 0.05), the experimental group (30.3 ± 2.4) had a clearly greater incidence rate of digestive disorders than the control group (20.0 ± 2.1. Gastritis and duodenitis (9.6%), functional problems of the stomach (6.9%), non-infectious enteritis and colitis (5.9%), biliary dyskinesia (5.2%), and other digestive diseases (5.0%) were the most common digestive illnesses. Our sociological research shows that bad eating habits among students might be connected to several intestinal problems. Just 52% of students had a hot meal once a day and only 32% of student followed a three-meal-per-day plan. While readily digested carbohydrates were eaten in abundance, people's diets also clearly lacked protein-rich items such meat, fish, dairy products, and eggs [13]. Alimentary-dependent disorders are well-known to be caused by this imbalanced diet, which perhaps helps to explain the increased morbidity in this population [14].

Second most often mentioned health concern among the students was respiratory disorders. With a morbidity rate of 29.2 ± 2.4, the experimental group had a much higher rate than the control group—which had a rate of 19.2 ± 2.0 (< 0.05). The most often occurring respiratory disorders were acute upper respiratory tract infections (26.7%), chronic tonsillitis (6.7%), allergic rhinitis (5.3%), and pharyngitis (4.6%). Environmental elements that aggravate these health problems might include inadequate temperature control in classrooms and dorms, a drop in student immunity with seasonal changes, and crowding in learning environments, therefore raising the transmission risk. With a greater detection frequency in the experimental group (18.1 ± 2.0) than the control group (11.4 ± 1.7), illnesses influencing the skin and subcutaneous tissue were also quite clearly detected and statistically significantly differed (< 0.05). The elements behind the rise in these diseases include poor hygienic standards and surroundings that support the spread of skin infections. Furthermore a major issue is the rising frequency of ocular TB, especially among young people. While the experimental group had a reduced rate of 11.1 ± 1.6 (< 0.05), the incidence rate of ocular TB was noted in the control group at 17.6 ± 2.0 per 100 students. One-third of the students also had vision problems; myopia was found in the experimental group at 19.6% and in the control group at 26.5% [15]. The pressures of the coursework and persistent ocular strain from intensive study highlight the need of preventative actions. To help to reduce these problems, preventative measures must be strengthened; good lifestyle choices must be encouraged; and appropriate lighting standards in educational settings must be guaranteed [16].

Among the experimental group (15.7 ± 1.9) infectious and parasitic diseases—including intestinal infections, acute viral hepatitis A, and helminthic infections—were also more often reported than in the control group (10.5 ± 1.6 (< 0.05). The great frequency of these illnesses emphasizes the necessity of focused public health campaigns among the student population, especially in the prevention of gastrointestinal and vector-borne diseases [17]. With the experimental group reporting a notably higher incidence (18.1 ± 2.0) than the control group (11.4 ± 1.7 (< 0.05), a worrying trend was also seen in the high rates of skin and subcutaneous tissue illnesses. In the experimental group (14.3 ± 1.8) disorders affecting the ear and mastoid process were also more prevalent than in the control group (8.9 ± 1.5).

These disorders highlight the necessity of better healthcare access and preventative care plans as they might be connected with environmental and hygienic elements [18].
Based on medical exams, an investigation of the morbidity structure among various illnesses indicated that a mix of socioeconomic, climatic, and hygienic elements shapes the general pattern of morbidity. Being the main industry in the economy of the area, agriculture helps a lot of people—especially the young people who work in crop and animal farming—have their living [19]. This occupational exposure increases the risk for both somatic and infectious illnesses, hence focused health interventions for this at-risk group are necessary.

Table 3. Morbidity structure of the surveyed students.

Disease class	Main grupppa (n =370)	The control group. (n =370)
Diseases of the respiratory	system 13.9±1.8	14.7±1.8
Diseases of the genitourinary system	6.1±1.2	4.9±1.1
Diseases of the digestive	system 14.5±1.8	15.3±1.9
Injuries and poisoning total	8.0±1.4	8.7±1.5
Diseases of the eye and its appendages	8.4±1.4	8.5±1.4
Diseases of the circulatory	system 5.4±1.2	2.9±0.9
Diseases of the skin and diseases of the skin	8.6±1.5	8.7±1.5
Some infectiousционные and parasitic diseases	7.5±1.4	8.1±1.4
Diseases of the nervous system	5.7±1.2	6.5±1.3
Diseases of the ear and mastoid	process 6.8±1.3	6.8±1.3
Diseases of the endocrine system	1.9±0.8	1.2±0.6
Diseases of the blood, hematopoietic organs	6.1±1.2	5.9±1.2
Other	7.1±1.3	7.8±1.4
Total	100.0	100.0

3.4 Morbidity Trends Among University Students: A Comparative and Socioeconomic Analysis
Table 3 shows the structure of morbidity among the investigated students split into the main and control groups, which reveals a clear trend of health problems common among university populations. With rates of 14.5 ± 1.8 in the main and control groups respectively, diseases of the digestive system were the most often reported ones. These digestive problems mostly consisted of colitis, enteritis, gastritis, and duodenitis. As previously mentioned, poor eating habits and irregular eating schedules are among the various reasons behind the great frequency of gastrointestinal disorders. With just 32% of students following a three-meal-a-day schedule and over half of the students not getting hot meals everyday, a significant fraction of pupils neglect a balanced meal plan. Especially gastrointestinal problems, these eating habits raise the risk for alimentary-dependent illnesses [20].
With rates in the main and control groups of 13.9 ± 1.8 and 14.7 ± 1.8 respectively, respiratory diseases—mostly acute respiratory virus infections—tonsillitis, and adenoids ranked second most often occurring illnesses. Particularly in winter, the rising frequency of respiratory disorders among students is related to elements like unsatisfactory indoor air quality, overcrowding in university classrooms, and inadequate heating in living and study spaces. Moreover, the great academic demands students experience can lead to impaired immunity, which increases their vulnerability to diseases. This more sensitivity along with environmental elements might aggravate respiratory problems, hence raising morbidity rates. With incidence rates in the main group of 7.5 ± 1.4 and in the control group of 8.1 ± 1.4, infectious and parasitic disorders came in third position. Often linked to gastrointestinal ailments, viral hepatitis A, and parasitic infestations including helminthic infections were these disorders. Given that university students may have compromised immune systems from stress, lack of sleep, and poor diet, the increasing prevalence of infectious illnesses raises very alarming implications. Furthermore aggravating the heightened vulnerability of the student population to illnesses is poor hygiene standards and restricted access to medical treatments, particularly in rural or underdeveloped locations [21].
Along with asthma, poisoning, blood loss, and hematological illnesses, the study also exposed a noteworthy frequency of diseases influencing the eyes, skin, and integumentary system. The experimental group had far more disorders of the skin, including acne and dermatitis, as well as ocular problems including myopia. The incidence of these diseases points to the growing influence of environmental and lifestyle elements like bad posture, prolonged screen time, and inadequate eye care, all of which are common among university students because of the nature of their academic and social activities. Reflecting the stress on visual organs by extended study hours and restricted breaks, myopia

was found in 19.6% of students in the experimental group and 26.5% in the control group [10]. This general rise in morbidity rates among students not only reflects the growing frequency of certain diseases in the student population but also reflects a larger public health trend seen generally across the population. Examining the pattern of morbidity in the population reveals that frequency and kind of illnesses that develop are much influenced by hygienic, environmental, and socioeconomic aspects as well as by economic ones. Young individuals, especially in rural areas, are more prone to have both somatic and infectious illnesses in places where agriculture dominates the economy. This is a result of the physical demands of agricultural employment and possible environmental risks like pesticides, unclean water, and poor sanitation [22].

In public health, particularly when assessing the health situation of certain groups, including university students, primary morbidity indicators have notably great relevance. These markers show the degree to which socioeconomic and environmental elements affect pupils' well-being as well as a direct assessment of the health issues they experience. In this research, the main morbidity indicators not only highlight the immediate health problems among students but also act as a mirror reflecting more general public health issues within the area. These morbidity patterns are shaped in part by changes in the health system, access to medical treatment, and regional socioeconomic situations as well as by other elements. Moreover, the accessibility and quality of healthcare facilities provided to students affect these markers. Directly affecting their health results are the availability of medical treatment at both their homes and at educational institutions. Key factors influencing the morbidity rates among students in university environments were the accessibility to medical institutions and the suitability of the healthcare infrastructure throughout the years 2021–2023. Comparative study of main morbidity rates during these years reveals, as Table 3 shows, restricted healthcare access, particularly in rural or underdeveloped areas, may have contributed to the greater occurrence of illnesses [23].

Table 4. Morbidity rate of students according to the data of visits to medical institutions for 2021-2023 (per 1000 people).

Disease class	2021 (n =645)	2022. (n =658)	2023. (n =690)
Diseases of the respiratory	system 49.6±3.1	54.0 ±3.2	58.0±3.3
Diseases of the genitourinary system	5.2±1.0	4.4±0.9	4.0±2.4
Diseases of the digestive	system 52.0±3.1	55.6±3.2	58.4±3.3
Injuries and poisoning total	5.6±1.1	6.0±1.1	6.4±1.1
Diseases of the eye and its appendages	10.0±1.4	11.6±1.5	12.4±1.6
Diseases of the circulatory	system 6.0±1.2	7.2±1.4	5.6 ±1.1
Diseases of the skin and subcutaneous	tissue 18.4±1.9	18.0±1.9	22.4±2.1
Some infectiousционные and parasitic diseases	24.8 ±2.2	29.2 ±2.4	32.4 ±2.5
Diseases of the nervous system	5.6±1.1	6.4 ±1.1	6.8 ±1.2
Diseases of the ear and	8,0 ±1,3	10,4± 1,4	10,8 ±1,5
Diseases of the endocrine system	7.2±1.2	6.8±1.2	8.0±1.3
Diseases of the blood, hematopoietic organs	8.0±1.3±1,3	6.0±1.1	7.2±1.2
Other	39.2±2.7	42.0±2.8	48.0±3.0
Total	239.6 ±6.0	257.6±8.1	280.4 ±8.3

From Table 4, it is certain that, with considering their access to medical facilities, the main morbidity rates among students indicate an overall rise of 17.2% (from 239.6 ± 6.0 per 1000 persons in 2021 to 280.4 ± 8.3 per 1000 individuals in 2023, $p<0.05$). For six illness categories—digestive system, respiratory system, eye and its appendages, certain viral and parasitic disorders, and diseases of the ear and mastoid process—especially, morbidity rates based on referrals climbed in 2023 compared to 2021. By contrast, the morbidity rates for other illness categories—that is, genitourinary system disorders, asthma and poisoning, circulatory system diseases, nervous system diseases, and endocrine system diseases—did not statistically significantly alter. From 8.0 ± 1.3 to 10.8 ± 1.5, diseases of the ear and mastoid process increased by 31.3%; from 10.0 ± 1.4 to 12.4 ± 1.6, diseases of the eye and its appendages increased by 12.4%; from 18.4 ± 1.9 to 22.4 ± 2.1, diseases of the skin and subcutaneous tissue increased by 21.7%; from 49.6 ± 3.1 to 58.0 ± 3.3, respiratory diseases increased by 16.9%; and from 52.0 ± 3.1 to 58.4 ± 3.3, respectively, an increase of 12.3%. On the other hand, genitourinary system diseases saw a 24.1% decrease in morbidity rates (from 5.2 ± 1.0 in 2021 to 4.0 ± 2.4 in 2023), blood diseases and

diseases of branching organs saw a 10.0% decrease (from 8.0 ± 1.3 to 7.2 ± 1.2), and circulatory system diseases saw a 7.7% decrease (from 2.5 ± 0.7 to 1.9 ± 0.6). These decreases were statistically insignificant (p>0.05).

Table 5. Structure of morbidity of students according to the data of visits to medical institutions for 2021-2023 (in%).

Disease class	2021 (n =645)	2022. (n =658)	2023. (n =690)
Diseases of the respiratory	system 20.7±2.0	20.9±2.0	20.7±2.0
Diseases of the genitourinary system	2.2±0.7	1.7±0.6	1.4±0.5
Diseases of the digestive	system 21.7±2.1	21.6±2.1	20.8±2.1
Injuries and poisoning total	2.3±0.7	2.3±0.7	2.3±0.7
Diseases of the eye and its appendages	4.2±0.9	4.5±0.9	4.4±0.9
Diseases of the circulatory	system 2.5±0.7	2.8±0.7	1.9±0.6
Diseases of the skin and subcutaneous	tissue 7.6±1.2	6.9±1.2	7.9±1.3
Some infectiousционныеdiseases. parasitic diseases	10.4±1.4	11.3±1.5	11.4±1.5
Diseases of the nervous system	2.3±0.7	2.5±0.7	2.7±0.7
Diseases of the ear and mastoid	process 3.3±0.8	4.0±0.9	3.9±0.9
Diseases of the endocrine system	3.0±0.7	2.6±0.7	2.8±0.7
Diseases of the blood, hematopoietic organs	3.3±0.8	2.3±0.7	2.6±0.7
Other	16.4±1.8	16.3±1.8	17.1±1.8
Total	100.0	100.0	100.0

Table 5 shows that, based on an analysis of the total morbidity among Osh State University (OSH) per 1000 students, diseases of the digestive system regularly ranked first in terms of the structure of registered diseases related to access to medical institutions over the study period. With these variations demonstrating statistical relevance (p<0.05), the percentage of digestive system disorders in 2021 was 21.7 ± 2.1%; in 2022 it was 21.6 ± 2.1%; in 2023 it was 20.8 ± 2.1%. Closely behind respiratory disorders, which accounted for 20.7 ± 2.0% in 2021, 20.9 ± 2.0% in 2022, and 20.7 ± 2.0% in 2023, once again show no notable variations (p=0.05). With 10.4 ± 1.4% in 2021, 11.3 ± 1.5% in 2022, and 11.4 ± 1.5% in 2023, the third most common group was various viral and parasitic disorders, which exhibited a little rise in frequency although this variance was not statistically significant.

On the other hand, the absence of significant changes in referrals for other nosological classes suggests that the pattern of morbidity for other illness categories did not change statistically across the research period from 2021 to 2023. A comparative analysis of the indicator of primary morbidity of the population of the Kyrgyz Republic and students in terms of access to medical institutions for 2021-2023 was carried out. (Figure 2).

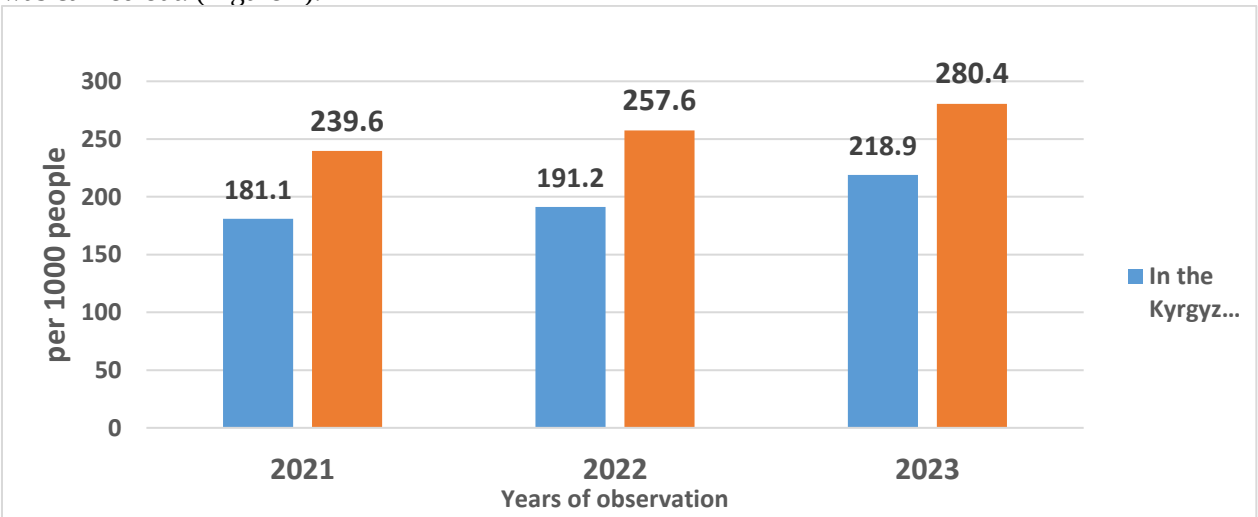

Figure 2: Comparison of morbidity rates of students and the population by access to medical institutions in 2021-2023 (per 1000 people)

Figure 2 shows, among both students and the general population in 2023 compared to 2021, a considerable rise in morbidity rates in terms of referrals. The morbidity rate among students specifically

increased by 17.0%, rising from 239.6 ± 6.0 in 2021 to 280.4 ± 8.3 per 1000 persons in 2023, a statistically significant trend ($p<0.05$). Though this rise was not statistically significant ($p>0.05$), the morbidity rate among the general population of the republic also rose by 20.0%, from 81.1 ± 0.25 to 218.9 ± 0.25. Significantly statistically speaking, the morbidity rate among students was found to be 1.3 times greater than that of the general population ($p<0.05$). Students' greater inclination to disclose health concerns during outpatient clinic or hospital visits might help to explain this difference [24]. One important measure of young people's health is morbidity linked with temporary impairment. Examining student temporary disability cases and days found a tendency increasing. From 30.5 in 2021 to 36.5 in 2022, the temporary disability cases per 100 students rose by 19.6%. Analogously, the total number of days of incapacity rose from 280.1 in 2021 to 380.3 in 2022, a 35.7% rise. From 9.1 days in 2021 to 10.4 days in 2022, the average length of one instance of temporary incapacity thus changed. Among students in 2021 and 2022, respiratory diseases (39.5%), digestive system diseases (26.5%), musculoskeletal system diseases (16.7%), allergic conditions (12.4%), circulatory system diseases (8.9%), and surgical conditions (6.5%), together representing the main causes of temporary disability among them. These results show the major influence these disorders have on students' academic performance and general state of health over the course of their studies [25].

4. Conclusions

From 2019 to 2023, the health and demographic trends in the southern parts of the Kyrgyz Republic show a complicated picture of transition and struggle. Although the population's general morbidity rate has decreased dramatically, the birth rate and natural population increase have dropped as well; the general death rate has stabilized. These changes draw attention to urgent public health concerns demanding more research and focused treatments. A thorough investigation exposes a clear frequency of health aberrations and a drop in important somatic health indices. Among students, the increase in morbidity rates is especially alarming as it significantly connects with the prevalence of risk factors for chronic non-communicative disorders (NCDs), which are very widespread in this population. Though the difference is not statistically significant ($p>0.05$), surprisingly about every second student questioned suffers from at least one chronic ailment; prevalence rates in the main group and the control group respectively stand at 69% and 56%. Moreover, throughout the academic years of the students, there has been a notable rise in certain health problems like dental caries, eye conditions, and gastrointestinal ailments. From 239.6 ± 6.0 per 1000 persons in 2021 to 280.4 ± 8.3 per 1000 in 2023 ($p<0.05$), primary morbidity indices reveal a significant increase of 17.2%. Dealing with these issues calls for a two-prangle approach to preventative medicine. First of all, reducing risk factors depends on encouraging among students a culture of good living. Second, it is important to use early diagnosis strategies for chronic illnesses and related risk factors, then follow with quick and suitable treatments. Such approaches seek to provide a basis for better future generations in addition to enhancing the health results of current ones. Finally, these results highlight the need of giving student health the highest priority within the wider structure of regional public health programs.

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Consent statement: Due to the retrospective nature of the study, informed consent was waived

Data availability statement: Data will be made available on request.

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