

THE COMPOSITION OF HEALTH CONDITIONS IN YOUTHS AND TEENS AFFECTED BY OBESITY IN THE FERGANA REGION

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INTRODUCTION

Obesity has garnered significant attention for several compelling reasons [1-2]. Firstly, it is associated with an annual increase in the number of individuals grappling with excessive body weight [3-4]. Secondly, obesity consistently leads to the development of health conditions affecting various bodily organs and systems, including cardiovascular disorders (such as atherosclerosis, arterial hypertension, ischemic heart disease - IHD, and metabolic syndrome), musculoskeletal ailments (such as osteochondrosis and degenerative osteoarthritis), endocrine dysfunctions (including insulin-dependent diabetes mellitus and type 2 diabetes mellitus), immune-related diseases (such as colorectal cancer, breast cancer, and prostate cancer), reproductive challenges, among others [5-7]. It is undeniable that there is a genetic predisposition to obesity, as substantiated by epidemiological research [8]. Epidemiological studies reveal that the 25 member states of the European Union are witnessing the highest prevalence rates of obesity. In this context, 25% of adolescents struggle with excess body weight, and 15% are afflicted by obesity [1,9]. Consequently, the obesity epidemic poses one of the most pressing global public health challenges. Each year, diseases related to obesity contribute to over one million deaths in the region [10-11].

The aim of this study is to evaluate the occurrence and the pattern of obesity among children and adolescents residing in the Republic of Uzbekistan.

Materials and Methods: The medical-sociological study involved the retrieval of information from medical records (Form No. 025/u) and development histories (Form No. 030/u), followed by comprehensive medical examinations of children and adolescents. The analysis incorporated data from health check-ups conducted in educational institutions, as well as data from dispensary groups under the care of endocrinologists for obesity. The study spanned a three-year period from 2021 to 2023.

When reviewing the anamnestic data through questionnaires, particular attention was given to prior illnesses, the presence of chronic conditions, and sources of infection. The analysis of morbidity adhered to the international statistical classification of diseases and health-related issues.

To assess the health of children and adolescents with obesity, it is crucial to consider the pathogenesis of this syndrome, the characteristics of its progression, and the body's functional capacities, primarily influenced by living conditions, dietary habits, daily routines, rest, and various emotional states.

Using commonly accepted methods in sanitary statistics, intensity indicators were computed. Mean morbidity indicators (M) and the standard error (m) were calculated. The changes in obesity morbidity indicators were studied over a three-year period.

RESULTS

From 2021 to 2023, the Republic recorded 55,824 new cases of obesity among its adult population. Regions with notably high obesity rates included the city of Tashkent, the Khorezm Region, and the Tashkent Region. The onset of obesity in the population is characterized by an imbalance between calorie intake and energy expenditure, as well as disruptions in the functioning of the pancreas, liver, small and large intestines. Such elevated levels of obesity were not observed in other regions.

When examining the prevalence of obesity among children and adolescents in Uzbekistan, it was evident that obesity rates were increasing among individuals aged 11-15. Over the same period of 2021-2023, the Republic registered 54,228 new cases of obesity in this age group. The regions with the highest obesity rates among children differed from those in the adult population, with significant intensity noted in the city of Tashkent, the Tashkent Region, and the Khorezm Region. This gradual yet consistent increase, peaking in 2023, is attributed not only to factors such as diet and physical activity but also to the proactive efforts of pediatric endocrinologists, hygienists, and dietitians (see Table 1).

In this section, intensive obesity indicators are provided for various regions of Uzbekistan over a three-year period spanning from 2021 to 2023. These indicators are measured per 100,000 population.

Table 1. Intensive obesity indicators by region over 3 years.

<u>Region</u>	<u>2021 (per 100,000 population)</u>	<u>2021 (per 100,000 population)</u>	<u>2023 (per 100,000 population)</u>
<u>City of Tashkent</u>	304.1	314.1	327.1
<u>Andijan</u>	10.3	12.0	14.6
<u>Bukhara</u>	25.1	15.5	23.0
<u>Jizzakh</u>	1.2	3.7	6.1
<u>Kashkadarya</u>	0.5	0.5	3.9
<u>Navoiy</u>	44.2	41.6	46.6
<u>Namangan</u>	25.4	36.5	42.3
<u>Samarkand</u>	18.8	38.1	37.8
<u>Surkhandarya</u>	10.7	14.1	18.6
<u>Sverdarya</u>	26.2	17.4	21.4
<u>Tashkent Region</u>	122.4	155.7	167.0
<u>Fergana Region</u>	28.0	40.3	46.5
<u>Khorezm Region</u>	63.1	122.1	132.6
<u>Republic of Karakalpakstan</u>	31.8	23.2	35.8
<u>Republic of Uzbekistan</u>	45.9	56.4	62.0

Looking at the data presented in the table, it becomes apparent that obesity rates have experienced an upward trend in different regions of Uzbekistan during the three-year period. The most notable increase is observed in the Tashkent Region, with some other regions also demonstrating a rise in obesity prevalence, albeit to a lesser degree. On a

national scale, the Republic of Uzbekistan also demonstrates a consistent increase in intensive obesity indicators over the given timeframe.

An examination of the morbidity rates among children and adolescents with obesity in the Fergana Region, conducted through thorough medical assessments, revealed a higher incidence of various conditions in this age group (11-15 years). These conditions encompassed endocrine disorders, metabolic irregularities, pathologies related to the blood and hematopoietic system, gastrointestinal issues, conditions necessitating surgical evaluation (such as scoliosis and flatfoot), chronic infectious sources (like chronic tonsillitis and adenoids), as well as neurological disorders including autonomic nervous system disorders, asthenoneurotic syndrome, vegetative-vascular dystonia, various neuroses, and cardiovascular system disorders.

An examination of the illness patterns among children and adolescents with obesity in the Fergana region indicated that the most prominent health issues included endocrine disorders, eating problems, and metabolic irregularities, accounting for 29.6% of cases among obese children. Conditions related to the digestive system constituted 10.4% of cases, blood disorders and issues with hematopoietic organs were present in 13.0% of cases, neurological disorders were observed in 5.4% of cases, with mental health disorders and behavioral problems at 3.3%. Additionally, genitourinary system diseases accounted for 3.0% of cases, while injuries, poisonings, and other effects of external factors represented 3.4% of cases. Diseases affecting the skin and subcutaneous tissue, the circulatory system, and the musculoskeletal system were present in 4.1% and 2.5% of cases, respectively.

Table-2. Disease Structure in Children and Adolescents with Obesity in the Fergana region (as a Percentage of Total Diseases)

ICD-10 Class of Diseases	Percentage
I Infectious and parasitic diseases	3,0
III Blood and hematopoietic system diseases and certain disorders involving the immune mechanism	13,0
IV Endocrine disorders, metabolic disturbances	29,6
V Psychiatric disorders and behavioral disturbances	3,3
VI Diseases of the nervous system	5,4
VII Diseases of the eye and its adnexa	2,8
VIII Diseases of the ear and mastoid process	3,4
IX Diseases of the circulatory system	6,1
X Diseases of the respiratory system	11,0
XI Diseases of the digestive system	10,4
XII Diseases of the skin and subcutaneous tissue	4,1
XIII Diseases of the musculoskeletal system and connective tissue	2,5
XIV Diseases of the genitourinary system	3,0
XV Pregnancy, childbirth, and the puerperium	-
XVII Congenital malformations, deformations, and chromosomal abnormalities	1,8
XIX Injuries, poisonings, and other consequences of external causes	3,4
Total Disease Incidence	100

The increase in the aforementioned diseases may be attributed to a decrease in the protective properties of the children and adolescents' bodies due to excessive nutrition, non-compliance with a rational diet, daily routines, and other factors. When assessing the incidence rate of obesity among children and adolescents, despite its high prevalence, no severe forms of chronic pathology were registered among them.

Endocrinologists examined individuals who had the diagnosis of "obesity" in their outpatient medical records, and 50% of them were referred by primary care pediatricians specifically due to excess body weight concerns. Additionally, 5% of children's parents sought consultation with an endocrinologist independently, as they were concerned about their child's excess body weight.

We found that among the surveyed individuals, 56% of children with obesity did not have the diagnosis of "obesity" in their outpatient documentation, had not been consulted by an endocrinologist, and consequently had not received any preventive or therapeutic recommendations. In 25% of the examined children, there were no regular anthropometric data available. Children who had been diagnosed with "obesity" in the form of 112/u by an endocrinologist during an outpatient examination or by a hospital physician were also not subjected to further monitoring and the dynamics of their body weight were not controlled.

It is noteworthy that outpatient pediatricians do not consider obesity in children as a significant problem negatively impacting a child's health, which requires constant

monitoring and attention. They may also experience a lack of understanding from the parents of children with obesity.

Conclusion: The regional peculiarities of obesity incidence among children and adolescents identified in this study will aid in conducting targeted measures to further reduce this pathology in Tashkent city and in Uzbekistan.

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