

## PREVALENCE OF OBESITY AMONG CHILDREN AND ADOLESCENTS IN UZBEKISTAN

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**Annotation:** *The aim of this study is to assess the prevalence of obesity among the children and adolescents in the Republic of Uzbekistan and analyze the associated health conditions and factors contributing to obesity. The study analyzed data from 2012 to 2014, including registered cases of obesity among children. The prevalence of obesity in different regions of Uzbekistan was examined. The results showed that among children and adolescents, 3,134 cases of obesity were registered during the same period, with high rates observed in Tashkent city, Tashkent, Khorezm, and Fergana regions. Analysis of medical examinations revealed that endocrine disorders, eating and metabolic disorders, blood disorders, gastrointestinal diseases, and neurological disorders were commonly associated with obesity. The study emphasizes the importance of regular monitoring and intervention by endocrinologists and pediatricians in addressing childhood obesity and its associated health risks.*

**Keywords:** *prevalence, obesity, children and adolescents, eating and metabolic disorders, intervention, health risks.*

## РАСПРОСТРАНЕННОСТЬ ОЖИРЕНИЯ СРЕДИ ДЕТЕЙ И ПОДРОСТКОВ В УЗБЕКИСТАНЕ

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**Аннотация:** *Цель данного исследования состоит в оценке распространенности ожирения среди детей и подростков в Республике Узбекистан и анализе связанных с ним здоровых состояний и факторов, способствующих ожирению. В исследовании были проанализированы данные за период с 2012 по 2014 год, включая зарегистрированные случаи ожирения среди детей. Была проведена оценка распространенности ожирения в различных регионах Узбекистана. Результаты показали, что в течение того же периода было зарегистрировано 3134 случая ожирения среди детей и подростков, с высокими показателями в городе Ташкенте, Ташкентской, Хорезмской и Ферганской областях. Анализ медицинских осмотров выявил, что эндокринные расстройства, нарушения питания и обмена веществ, нарушения крови, заболевания желудочно-кишечного тракта и нервные расстройства часто сопровождают ожирение. В исследовании подчеркивается важность регулярного мониторинга и вмешательства эндокринологов и педиатров в решении проблемы ожирения у детей и связанных с ним здоровья.*

**Ключевые слова:** *распространенность, ожирение, дети и подростки, нарушения питания и обмена веществ, вмешательство, здоровые риски.*

## O'ZBEKISTONDA BOLALAR VA O'SMIRLAR ORASIDA SEMIZLIKNING TARQALISHI

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**Annotatsiya:** Ushbu tadqiqotning maqsadi O'zbekiston Respublikasida bolalar va o'smirlar o'rtasida semizlikning tarqalishini baholash va ular bilan bog'liq sog'lom sharoitlar va semirishga ta'sir qiladigan omillarni tahlil qilishdir. Tadqiqot 2012 yildan 2014 yilgacha bo'lgan ma'lumotlar, jumladan, bolalardagi semizlik holatlarini tahlil qildi. O'zbekistonning turli hududlarida semirishning tarqalishiga baho berildi. Natijalar shuni ko'rsatdiki, xuddi shu davrda bolalar va o'smirlar o'rtasida 3134 ta semizlik holatlari qayd etilgan bo'lib, Toshkent shahri, Toshkent viloyati, Xorazm va Farg'ona viloyatlarida yuqori ko'rsatkichlar qayd etilgan. Tibbiy ko'riklar tahlili shuni ko'rsatdiki, semirishga ko'pincha endokrin tizim kasalliklari, ovqatlanish va moddalar almashinuvidagi buzilishlar, qon kasalliklari, oshqozon-ichak trakti kasalliklari va asab kasalliklari hamroh bo'ladi. Tadqiqot bolalardagi semizlik va u bilan bog'liq muammolarini hal qilishda endokrinologlar va pediatrlar hamkorligidagi muntazam monitoringni muhimligini ta'kidlaydi.

**Kalit so'zlar:** tarqalish, semizlik, bolalar va o'smirlar, ovqatlanish va metabolik kasalliklar, tibbiy aralashuv, sog'liq uchun xavflar.

**Aim:**

Currently, there are approximately 250 million people worldwide suffering from obesity, which accounts for 7% of the total adult population. WHO experts predict that the number of individuals with obesity will nearly double by 2025, compared to data from 2000, reaching 45-50% of the adult population in the United States, 30-40% in Australia and the United Kingdom, and over 20% in Brazil. Consequently, obesity has been recognized by the WHO as a new non-communicable "epidemic" of our time [1,2,3]. According to WHO data, there are around 22 million children under the age of 5 and 155 million school-aged children worldwide who are overweight. In economically developed countries, up to 25% of teenagers have excess body weight, and 15% suffer from obesity [4]. According to the International Association for the Study of Obesity, the annual growth rate of this condition, which was around 0.2% in 1970, increased tenfold by 2000, reaching 2% already [5,6].

It is known that one-third of adults develop obesity during childhood or adolescence, which is accompanied by a more significant weight gain and an increased frequency of associated diseases compared to obesity that develops in adulthood. 80% of overweight teenagers retain excess body weight in adulthood [7,8].

The adolescent period is a transitional phase between childhood and sexual maturity. It is during this period that a series of changes occur, leading to physical, psychological, and reproductive maturity of the body [9]. Biological changes during puberty are regulated by

neuroendocrine factors and hormones that accelerate somatic growth, the development of reproductive glands, and their endocrine and exocrine functions. Excessive adipose tissue can lead to dysfunction of the hypothalamic-pituitary-gonadal system in adolescence, which may disrupt the processes of reproductive function formation [10].

The wide prevalence of obesity in childhood inevitably leads to the development of complications and is an important medical and social problem that requires fruitful collaboration between specialists and patients [11]. Prevention of excess body weight in childhood, early detection, and treatment of obesity and metabolic disorders are the priority areas of modern medicine.

The aim of this study is to investigate the prevalence of obesity among children and adolescents in Uzbekistan, with a particular focus on the age group of 11-15 years. It aims to identify the regions with high obesity rates and understand the contributing factors, including diet, physical activity, and the active involvement of pediatric endocrinologists, hygienists, and dieticians.

**Materials and methods:**

The medical-sociological research included extracting data from medical records (form №025/y) and developmental histories (form №030/y), followed by in-depth medical examinations of children and adolescents. Data analysis from preventive check-ups in educational institutions, dispensary groups registered with endocrinologists for obesity, and reports from healthcare institutions in Uzbeki-

stan were also conducted. The study period lasted for 3 years (2012-2014).

When studying the anamnestic data through questionnaire surveys, attention was paid to past illnesses, the presence of chronic diseases, and foci of infections. The analysis of morbidity was conducted in accordance with the International Statistical Classification of Diseases and Related Health Problems.

To study the health of children and adolescents with obesity, it is essential to consider the pathogenesis of this syndrome, the peculiarities of its course, and the functional capacity of the body, as they mainly result from lifestyle conditions, dietary habits, living environment, rest, and various emotional states.

Using commonly accepted methods of sanitary statistics, intensive indicators were calculated. The average values of morbidity indicators (M) and the standard error (m) were determined. The dynamics of obesity morbidity indicators were studied over the course of 3 years.

#### **Results:**

When studying the prevalence of obesity among children and adolescents in Uzbekistan, it was noted that obesity increases in children aged 11-15 years. From 2012 to 2014, a total of 3,134 cases of obesity in children and adolescents were registered in the country. High obesity rates were observed in the city of Tashkent, Tashkent region, Khorezm region, and Fergana region. In other regions, there were no significant obesity rates identified among children, indicating a slow but steady growth with an increase in 2014. This trend can be attributed not only to factors such as nutrition and physical activity but also to the active work of pediatric endocrinologists, hygienists, and dieticians.

The analysis of morbidity among children and adolescents with obesity based on in-depth medical examinations showed a higher occurrence of endocrine disorders, eating and metabolic disorders, blood and hematopoietic system pathologies, gastrointestinal tract disorders detected by surgeons (scoliosis, flat feet), chronic foci of infection (chronic tonsillitis, adenoids), as well as nervous system pathologies, including disorders of the autonomic nervous system, asthenoneurotic syndrome,

vegetovascular dystonia, various neuroses, and changes in the cardiovascular system.

In the structure of morbidity among children and adolescents aged 11 to 14 years with obesity in Tashkent city, endocrine disorders, eating and metabolic disorders (20.6%) were the leading causes, followed by blood and hematopoietic disorders (14.0%), digestive system diseases (11.4%), nervous system diseases (9.4%), psychiatric disorders and behavioral disorders (5.3%), genitourinary system diseases (3.0%), injuries, poisonings, and other effects of external causes (2.4%), among others.

In the structure of morbidity among children and adolescents aged 11 to 14 years with obesity in Tashkent region, the leading causes were endocrine disorders, eating and metabolic disorders (24.6%), followed by blood disorders, hematopoietic organ disorders, and specific immune mechanism involvement (14.0%), digestive system diseases (11.0%), nervous system diseases (6.1%), psychiatric disorders and behavioral disorders (3.7%), injuries, poisonings, and other effects of external causes (3.4%), genitourinary system diseases (3.0%), among others.

The analysis of disease structure among children and adolescents aged 11 to 14 years with obesity in the Fergana Valley showed that the leading causes were endocrine disorders, eating and metabolic disorders (29.6%), followed by blood and hematopoietic disorders (13.0%), digestive system diseases (9.4%), nervous system diseases (5.4%), psychiatric disorders and behavioral disorders (3.3%), injuries, poisonings, and other effects of external causes (3.4%), genitourinary system diseases (2.7%), among others.

It should be noted that children and adolescents with obesity in the city of Tashkent, Tashkent region, and Fergana region lack sufficient healthy lifestyle skills.

Thus, the high prevalence of certain nosological forms is determined by their functional state, the body's resistance, living conditions, work and rest patterns, healthy nutrition, and living conditions.

The increase in the aforementioned diseases may be due to a decrease in the body's protective properties in children and adoles-

cents resulting from excessive food consumption, non-compliance with a balanced diet, daily routine, and other factors. When assessing the morbidity rate of children and adolescents with obesity, despite the high prevalence of various health deviations, no severe forms of chronic pathology were registered among them.

Children and adolescents diagnosed with "obesity" in their outpatient medical records were examined by an endocrinologist, with 50% of them being referred by their primary care pediatricians specifically due to excess body weight. Parents of 5% of children sought an endocrinologist independently because they were concerned about their child's excessive body weight.

It was found that among the examined children, 56% of those with obesity did not have the diagnosis of "obesity" in their outpatient documentation, were not consulted by an endocrinologist, and therefore did not receive any preventive or therapeutic recommendations. Regular anthropometric data were absent for 25% of the examined children. Children diagnosed with "obesity" in Form 112/u by an endocrinologist during outpatient or inpatient examination were also not further subjected to medical supervision and did not have their body weight dynamics monitored. It should be noted that outpatient pediatricians do not consider obesity in children as a significant problem negatively impacting a child's health, and therefore, they do not believe it requires constant control and attention. They may also face a lack of understanding from parents of children with obesity.

#### **Conclusions:**

In conclusion, the study highlights the increasing prevalence of obesity among children and adolescents in Uzbekistan, particularly in the 11-15 age group. The findings emphasize the importance of promoting healthy lifestyles, improving diet and physical activity, and enhancing collaboration between healthcare professionals and parents. It is crucial to raise awareness about the detrimental effects of obesity on children's health and ensure regular monitoring and management of

obesity-related conditions to prevent long-term health complications.

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