

THE IMPACT OF IRON DEFICIENCY ANEMIA ON THE MENSTRUAL CYCLE IN ADOLESCENTS AND YOUNG WOMEN

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Abstract

Based on a literature review, this article examines the impact of iron deficiency anemia—prevalent during adolescence and young adulthood—on the course of the menstrual cycle, specifically parameters such as cycle length, amount of blood loss, and dysmenorrhea. It highlights the bidirectional relationship between anemia and menstrual disorders: on one hand, chronic blood loss during menstruation deepens anemia, and on the other hand, cycle disorders worsen against the background of anemia. Recommendations regarding the indirect impact of the problem on academic performance and methods for its prevention are also presented.

Keywords: iron deficiency anemia, hemoglobin, menstrual cycle, dysmenorrhea, adolescent health, ferritin

O'SMIRLAR VA YOSH AYOLLARDA TEMIR TANQISLIGI ANEMIYASINING HAYZ SIKLIGA TA'SIRI

Annotatsiya

Ushbu maqolada o'smirlik va yosh ayollik davrida keng tarqalgan temir tanqisligi anemiyasining hayz siklining kechishiga, xususan sikl uzunligi, qon yo'qotish hajmi va dismenoreya kabi ko'rsatkichlarga ta'siri adabiyotlar tahlili asosida ko'rib chiqilgan. Anemiya va hayz sikli buzilishlari o'rtasidagi ikki tomonlama bog'liqlik, ya'ni bir tomondan hayz davridagi surunkali qon yo'qotish anemiyani chuqurlashtirishi, ikkinchi

tomondan anemiya fonida sikl buzilishlarining kuchayishi masalasi yoritilgan. Shuningdek, muammoning o'quv faoliyatiga bilvosita ta'siri va uni oldini olish yo'llari bo'yicha tavsiyalar keltirilgan.

Kalit so'zlar: *temir tanqisligi anemiyasi, gemoglobin, hayz sikli, dismenoreya, o'smirlar salomatligi, ferritin*

Introduction

Iron deficiency anemia is the most widespread micronutrient deficiency globally, and it occurs significantly more frequently among girls and women of reproductive age compared to other groups. Several factors contribute to this: during the rapid growth phase of adolescence, the body's demand for iron increases, dietary habits are often unbalanced, and concerns about physical appearance lead girls to follow various restrictive diets. Added to all of this is regular blood loss during menstruation.

Main Body

Studies conducted in Uzbekistan also show the critical relevance of this issue. In particular, according to analyses conducted with the participation of UNICEF and national experts, nearly half of adolescents suffer from iron deficiency, and various types of anemia have been recorded in more than a quarter of adolescents. These rates can be even higher, especially in rural areas and in families with limited dietary variety. At the same time, the link between anemia and the menstrual cycle is often viewed as a secondary issue, whereas these two conditions can turn into a vicious cycle that mutually reinforces one another. The goal of this article is to systematize this connection based on scientific literature and to develop practical recommendations. Iron is an essential structural component for hemoglobin synthesis, and its deficiency reduces the oxygen-carrying capacity of red blood cells. As a result, symptoms such as fatigue, dizziness, decreased concentration, and pale skin occur. In adolescent girls, this condition is often misattributed to "ordinary fatigue" or a "characteristic of the growth period," leading to a delay in seeking medical advice. From a physiological perspective, a woman's body regularly loses a certain amount of blood—and consequently iron—during menstruation. If the dietary intake of iron fails to compensate for this loss, iron stores (ferritin levels) diminish over time, eventually leading to a drop in hemoglobin levels. Conversely, against the background of anemia,

altered blood supply to the endometrium and hormonal imbalances can result in menstrual cycle disturbances, such as changes in cycle length, increased bleeding, or prolonged duration. Thus, both conditions form an mutually aggravating vicious circle. Several clinical observations note that in severe cases of anemia, the frequency and intensity of dysmenorrhea (painful menstruation) increase. The cause cited for this is the disruption of uterine muscle contractions due to insufficient tissue oxygenation. Simultaneously, the general weakness and reduced concentration characteristic of anemia indirectly impair school and university students' academic performance and exam preparation.

A three-tier approach is effective in preventing this problem: first, enriching the daily diet with iron-rich foods (meat products, legumes, green leafy vegetables); second, establishing periodic medical examinations and hemoglobin monitoring among adolescent girls; and third, administering a course of iron supplements under medical supervision in severe cases. Such a comprehensive approach serves to prevent not only anemia, but also the associated menstrual cycle disorders.

Conclusion

The link between iron deficiency anemia and menstrual disorders holds special scientific and practical significance, as these two conditions together significantly affect the overall health of adolescent girls and young women, including their academic performance. Through early detection, proper dietary management, and regular medical monitoring, it is possible to prevent this issue or significantly reduce its severity.

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