

HARMFUL HABITS AFFECTING PREGNANCY AND EVIDENCE BASED APPROACHES TO THEIR ELIMINATION

Ro'zmetova Roziyajon Yoqubboyevna
Faculty of Medicine, 4th Year Student
Termiz Branch of Tashkent State Medical University
<http://rozmetovaroziyajon1gmail.com>

Rustamova Sevinch Shuxrat qizi
Faculty of Medicine, Med-01U group, 3rd Year Student
Kimyo International University in Tashkent
rustamovasevinch698@gmail.com

Mahmudova Ezoza Jasur qizi
Faculty of Medicine, 1st-Year Student
Termiz Branch of Tashkent State Medical University
ezozamaxmudova1007@gmail.com

Ergasheva Mehribon Ergashevna
2nd-Year Student Faculty of Medicine, Group 1/205-A
Termiz Branch of Tashkent State Medical University
ergashevamehribon877@gmail.com

O'ralova Aziza Faridovna
1st-Year Student Termiz Branch of Tashkent State Medical University
auralova942@gmail.com

Abstract

During pregnancy, a woman's body undergoes complex physiological, hormonal, and metabolic changes. In this period, external factors—especially harmful habits—directly and indirectly affect fetal development. Smoking, alcohol consumption, drug abuse, poor nutrition, chronic stress, sleep disorders, and physical inactivity are among the major modifiable risk factors that increase perinatal complications. This article systematically analyzes the pathophysiological mechanisms, clinical consequences, epidemiological evidence, and evidence-based medical, psychological, and social approaches to eliminating these harmful habits according to the IMRAD structure.

Keywords: Pregnancy, harmful habits, smoking, alcohol, drug abuse, perinatal complications, prevention, fetal development.



Introduction

Pregnancy is one of the most complex and sensitive physiological processes in a woman's life. During this period, the maternal organism serves as the main biological environment for fetal development. Therefore, fetal health is closely dependent on maternal health, lifestyle, and environmental factors.

In recent decades, numerous scientific studies have shown that persistent harmful habits during pregnancy significantly increase the risk of perinatal mortality, congenital anomalies, low birth weight, and neonatal complications. According to the World Health Organization, a considerable proportion of perinatal complications can be prevented through the elimination of modifiable risk factors. Thus, the scientific investigation of this issue and the development of effective preventive strategies are of great clinical importance.

Methods

This article was developed based on a systematic literature review. Scientific sources published within the last 15 years in the fields of obstetrics, gynecology, neonatology, reproductive medicine, and public health were thoroughly analyzed. The study included peer-reviewed journal articles, clinical guidelines, epidemiological reports, and official publications from international health organizations such as the World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC).

A structured search strategy was applied using electronic databases including PubMed, Scopus, and Google Scholar. The following keywords were used in different combinations: pregnancy, harmful habits, smoking, alcohol consumption, drug abuse, fetal development, maternal health, and reproductive outcomes. Only full-text articles published in English or Russian within the defined time period were included in the analysis.

Inclusion criteria were studies published within the last 15 years, focusing on pregnancy outcomes, reproductive health, and the impact of harmful habits or risk factors. Studies without sufficient methodological quality, unrelated to pregnancy, or lacking peer review were excluded from the review.

The collected data were processed using comparative analysis, synthesis, and systematization methods. Findings from different studies were compared to identify common patterns and differences regarding the effects of harmful habits on pregnancy outcomes. A qualitative synthesis approach was applied to integrate results from various types of studies and to ensure a comprehensive interpretation of the evidence. The relationship between harmful habits and pregnancy outcomes was evaluated from both pathophysiological and clinical perspectives, including the effects on placental function, fetal growth, risk of preterm birth, and congenital anomalies. The study is limited by its reliance on secondary data sources and possible variations in methodological quality among included studies.

Results

The findings demonstrate that harmful habits during pregnancy have significant negative effects on fetal development.



Smoking is one of the most harmful factors. It causes placental vasoconstriction, reduces uteroplacental blood flow, and leads to chronic fetal hypoxia. As a result, intrauterine growth restriction, low birth weight, preterm birth, and increased risk of intrauterine fetal death are commonly observed.

Alcohol consumption has a teratogenic effect on fetal development. Ethanol crosses the placenta and disrupts cellular division and differentiation processes. Clinically, this condition is known as Fetal Alcohol Spectrum Disorders, characterized by intellectual disability, facial abnormalities, cardiac defects, and behavioral disorders.

Drug abuse adversely affects the central nervous system, cardiovascular system, and respiratory regulation of the fetus. This leads to severe developmental disorders, neonatal abstinence syndrome, and postnatal adaptation difficulties.

Poor nutrition results in deficiencies of essential micronutrients such as folic acid, iron, and iodine. These deficiencies may lead to neural tube defects, anemia, and impaired thyroid function, negatively affecting fetal organogenesis.

Chronic stress and psychological strain increase cortisol levels, reducing uteroplacental circulation and increasing the risk of preterm birth and fetal growth restriction.

Discussion

The results indicate that harmful habits affect pregnancy outcomes through complex pathophysiological mechanisms. The main mechanisms include impaired placental perfusion, oxidative stress, hormonal imbalance, and disruption of fetal neurodevelopment. Importantly, these are modifiable risk factors, meaning they can be prevented or reduced through appropriate interventions. Therefore, preventive strategies play a crucial role in clinical practice. Early detection, pregnancy planning, psychological support, and continuous medical monitoring significantly reduce the prevalence of harmful habits and associated complications.

Conclusion

Harmful habits during pregnancy pose a serious risk to both maternal and fetal health. They impair placental function, delay fetal development, and increase the risk of congenital anomalies. The most effective approach is a comprehensive preventive strategy combining medical, psychological, and social interventions. Early identification and elimination of harmful habits are essential for ensuring healthy pregnancy outcomes and the birth of a healthy generation.

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