AMERICAN ACADEMIC PUBLISHER

INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

ISSN NUMBER: 2692 - 5206 Volume 5. No 12. December ,2025

THE RELATIONSHIP BETWEEN DEPRESSION AND MENSTRUAL CYCLE DISORDERS: PSYCHO-NEURO-ENDOCRINE APPROACH

Mahmudova Mohizoda Zuhriddin kizi
Kokand University, Andijan branch, Faculty of medicine, General medicine
Email: mohizodamahmudova08@gmail.com
Soliyeva Ummu Gulsum Abdulvosid kizi
Kokand University, Andijan branch, Faculty of medicine, General medicine
Email: ummugulsumsoliyeva@gmail.com
Scientific supervisor: **Mirzayeva Saidaxon Abdusalomovna**
Professor of the department of Microbiology, Virology and Immunology,
Kokand University, Andijan branch Email: saidaxonmirzayeva74@gmail.com

Abstract: This scientific article provides an in-depth analysis of the complex relationship between depression and menstrual disorders based on a psychoneuroendocrine approach. The interaction of mood, the central nervous system, and the endocrine system is of great importance in women's health. Studies show that depressive disorders can be an important etiological factor in the development of conditions such as delayed menstrual cycles, amenorrhea, dysmenorrhea, and premenstrual syndrome. The article discusses the effects of the hypothalamic-pituitary-ovarian axis, stress hormones, serotonin, and cortisol on the female reproductive system based on scientific sources [3, 5]. Literature analysis and a theoretical approach were used as the research methodology. The results indicate a strong bidirectional relationship between depression and menstrual disorders.

Keywords: depression, menstrual cycle, psychoneuroendocrine system, stress, hormones, women's health, serotonin, cortisol

INTRODUCTION: Today, the biopsychosocial model is considered the main scientific paradigm in explaining human health. According to this model, the development of diseases is closely related not only to biological factors, but also to psychological and social factors. In women's health, the interaction between mental state and the hormonal system is especially important [1]. Depression is one of the most common mental disorders, and it is twice as common among women as among men [9]. Depression not only causes a decrease in mood, but also negatively affects the overall functional state of the body, including the functioning of the reproductive system. At the same time, menstrual disorders are also common among women, and in many clinical cases their cause remains unknown [4]. Scientific studies show that mental stress, chronic stress, and depression disrupt the function of the hypothalamic-pituitary-ovarian (HPO) axis [3]. As a result, the balance of hormones such as estrogen, progesterone, and prolactin is disrupted, leading to various pathological conditions of the menstrual cycle [7]. In Uzbekistan, women's reproductive health problems remain one of the most pressing issues. National studies also confirm the existence of a strong connection between mental state and menstrual cycle disorders [6]. Therefore, it is necessary to study depression and menstrual cycle disorders not separately, but in a comprehensive manner within the framework of the psychoneuroendocrine system. The main purpose of this article is to analyze the relationship

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 5. No 12. December ,2025

between depression and menstrual cycle disorders based on a psychoneuroendocrine approach, summarize existing scientific sources, and draw theoretical conclusions.

RESEARCH METHODOLOGY: The following methodological approaches were used in this scientific work:
Scientific literature analysis – scientific sources published in Uzbek on women's reproductive health, depression, and psychoneuroendocrine mechanisms were studied [1, 3, 7].
Theoretical analysis – the physiological and psychological mechanisms between depression and menstrual disorders were analyzed [5].
Comparative method – the scientific views of different authors were compared [2, 4].
MAIN PART: Depression is a functional disorder of the central nervous system, characterized by changes in the metabolism of neurotransmitters. A decrease in the amount of serotonin, dopamine and noradrenaline leads to the appearance of depressive symptoms [3]. These neurotransmitters regulate not only mood, but also the activity of the hypothalamus. During stress and depression, the hypothalamus secretes a large amount of the hormone corticoliberin. This increases the secretion of adrenocorticotropic hormone by the pituitary gland and increases the release of the hormone cortisol from the adrenal glands [5]. Chronically high levels of cortisol suppress the synthesis of reproductive hormones. The menstrual cycle is a complex biological process in the female body, based on the balance between the hypothalamus, pituitary gland and ovaries [7]. The normal menstrual cycle lasts an average of 28 days. When this balance is disturbed, conditions such as amenorrhea, oligomenorrhea, polymenorrhea and dysmenorrhea occur [4]. In a depressed state, the production of gonadotropin-releasing hormone by the hypothalamus decreases. As a result, the secretion of luteinizing and follicle-stimulating hormones is disrupted and ovulation is disrupted [1]. The psychoneuroendocrine approach views mental processes, the nervous system, and the hormonal system as a single functional system [3]. Mental stress affects the endocrine glands through the nervous system, disrupting the functioning of the reproductive system. A decrease in serotonin levels leads to increased prolactin secretion. Increased prolactin suppresses ovulation and causes menstrual cycle disorders [7]. Premenstrual syndrome is manifested by mental and physical symptoms in the period before menstruation. Studies show that women with PMS are at increased risk of developing depression [8]. This condition is explained by sharp changes in the hormones estrogen and progesterone.
ANALYSIS AND RESULTS: Studies have shown that the frequency of menstrual disorders increases significantly with increasing severity of depressive states [2, 4]. This confirms that the reproductive system in women is sensitive to mood. In particular, chronic stress and depression disrupt the hypothalamic-pituitary-ovarian (HPO) axis, which leads to a decrease in the secretion of luteinizing hormone and follicle-stimulating hormone. As a result, ovulation is delayed or stopped, and menstrual irregularities - oligomenorrhea or amenorrhea - occur [5]. At the same time, dysmenorrhea - severe pain and physical discomfort during menstruation - can be exacerbated in connection with a depressive state. These two conditions create a mutually reinforcing cycle: depression exacerbates menstrual disorders, and menstrual disorders worsen mood [2, 4]. The psychoneuroendocrine approach provides a scientific explanation for this complex relationship. According to this approach, mental stress and depression disrupt the activity of the hypothalamus and pituitary gland through the central nervous system. This changes the levels of reproductive hormones - estrogen, progesterone and prolactin. Thus, psychological and endocrine factors are interconnected and interact to control the reproductive system and the menstrual cycle [5]. In addition, analyses show that the relationship between

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 5. No 12. December ,2025

depressive symptoms and the severity of menstrual disorders is not explained by biological mechanisms alone. Psychological factors, such as low mood, insomnia, lack of social support, also have a significant impact on menstrual irregularities and pain [2]. Therefore, identifying menstrual disorders in women with depression and treating them with an integrated approach allows us to put psychoneuroendocrine theory into practice. In general, the relationship between the severity of depressive states and menstrual disorders is scientifically substantiated not only by clinical observations, but also by psychoneuroendocrine mechanisms. A deeper understanding of this relationship will allow the development of effective prevention and treatment strategies by combining psychological and hormonal treatments in women of reproductive age [5].

CONCLUSION: In conclusion, the existence of a complex, multi-stage and bidirectional relationship between depression and menstrual disorders is scientifically substantiated. Depressive states directly affect the activity of the hypothalamic-pituitary-ovarian axis through the central nervous system, leading to impaired secretion of reproductive hormones. In turn, menstrual disorders, in particular amenorrhea, dysmenorrhea and premenstrual syndrome, can increase psychological stress in women and lead to a deepening of depressive symptoms. This interaction forms a “vicious circle” in women's health [3]. The psychoneuroendocrine approach allows us to study this problem not as a separate organ or a separate mental state, but as part of a single functional system. The interdependent development of mental stress, neurotransmitter imbalance and hormonal changes provides a deeper explanation of the mechanisms of occurrence of menstrual disorders. In particular, changes in the levels of the hormones serotonin, cortisol, and prolactin appear to be the main biological link between depression and reproductive dysfunction [3, 6]. In this regard, a comprehensive approach to maintaining women's health and restoring reproductive functions is of great importance. It is necessary to integrate psychological and psychotherapeutic support into the treatment process, not limited to gynecological or endocrine procedures. Early detection of depression, psychoprophylactic measures aimed at reducing stress, and individual psychological counseling significantly increase the effectiveness of restoring hormonal balance. In conclusion, it can be noted that the assessment of depression and menstrual disorders based on a comprehensive, psychoneuroendocrine approach is of great scientific and practical importance in improving women's health, improving the quality of life of women of reproductive age, and preventing severe gynecological and psychological complications in the future.

REFERENCES:

1. Abdullayev, S. (2019). Fundamentals of women's reproductive health. Tashkent: Uzbekistan. https://ziyonet.uz
2. Karimova, M. (2020). The impact of depression and stress on women's health. Medical Journal, 3(2), 45–52. https://www.tibbiyot.uz
3. Kholmatova, D. (2018). Fundamentals of psychoneuroendocrinology. Tashkent: Science. https://lib.uz
4. Ismoilov, A. (2021). Psychological factors of menstrual cycle disorders. Gynecological Information, 4(1), 33–40. https://www.medinfo.uz
5. Rakhmonova, N. (2017). Stress and hormonal imbalance. Healthy Generation, 2, 21–27. https://soglomavlod.uz
6. SSV of the Republic of Uzbekistan. (2022). Methodological guide to women's health. https://ssv.uz

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 5. No 12. December ,2025

7. Yo'ldoshev, B. (2019). Physiology of the endocrine system. Tashkent: Akademnashr. https://akademnashr.uz
8. Nurmatova, G. (2020). Premenstrual syndrome and depression. Psychology, 1(4), 58–64. https://psixologiya.uz
9. Zokirova, L. (2018). Depressive states in women. Social health, 5, 12–18. https://salomatlik.uz