ORIGINAL ARTICLE

CONTENTS

# Levels of anxiety and depression in patients with endometrial hyperplastic processes and extragenital pathology in the perimenopausal period

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## ABSTRACT

**Aim:** The aim of the study was to determine the level of anxiety and depression in patients with endometrial hyperplastic processes and somatic pathology in the perimenopausal period.

**Materials and Methods:** Overall, 150 women who were split into 2 groups, participated in this study and answered on questionnaires that were conducted according to the Hospital Anxiety and Depression Scale (HADS) to assess the degree of anxiety and depressive symptoms in patients. PHQ-2 and PHQ-9 questionnaires were used to study the level of anxiety and depression.

**Results:** Analysis of the results obtained using the HADS scale revealed that both anxiety and depressive symptoms in patients of the main group were more pronounced than in women of the control group. Identification of psycho-emotional disorders is the result of adverse effects of somatic diseases and gynecological pathology.

**Conclusions:** The results of the study indicate the need to correct psycho-emotional disorders and take them into account when choosing a method of treatment in such patients

**KEY WORDS:** gynecological pathology, depressive symptoms, psycho-emotional disorders, perimenopause

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## INTRODUCTION

The results of our own research and data from scientific sources indicate that patients of the perimenopausal period make up 50.0–55.0% of all patients with pathology of the endometrium and myometrium, aimed at scraping the tissue lining the uterine cavity (endometrium). The frequency of combination of hyperplastic processes of the endometrium and adenomyosis in them is 40.0–46.6%. Such patients should be included in the risk group of endometrial cancer, as more than a third of them (33.0%) show a complex atypical form of hyperplasia (endometrial adenomatosis) and in 65.6% of cases of uterine polyps. In the presence of a clinical diagnosis of "uterine leiomyoma with hemorrhagic syndrome" during perimenopause there is a high coefficient of diagnostic load, as well as a high frequency of detection of severe atypical hyperplasia (adenomatous endometrial hyperplasia — 38.6%) and uterine polyps — 71.3% [1-4].

Perimenopausal period of a woman's life is quite complex in terms of physiological restructuring of the body, which in the case of pathological course is manifested by neurovegetative, psychoemotional and metabolic-endocrine symptoms [4-6]. The pathological course of physiological reorganization of the body of women in this period can be provoked by existing extragenital diseases (in 57.0–90.0% of women) and hyperplastic processes of the endometrium and myometrium (in 17.0–35.0%). That is why the attention of many researchers is drawn to the medical problems of these age groups and of particular importance are the issues of corrective therapy, which ensures the adaptation of a woman's body to the new metabolic balance after attenuation of ovarian function [6-8].

According to Kornienko et al. [6], hyperproliferative processes of the endometrium significantly worsened the full range of indicators of quality of life, subjectively assessing their psychological well-being, patients rated it lower than physical. Patients feel social activity disorders highly than the body dysfunction. The psychopathic personality structure of a woman with endometrial pathology is characterized by neuroticism, depression, emotional lability, and shyness. Moreover, neuroticism significantly reduced not only the psychological but also the physical component of patients' health and had a significant impact on all parameters of life quality [5, 6, 9-12].

By the period of perimenopause, the frequency of endometrial pathology increases significantly and is characterized by the appearance of somatoform disorders which significantly limit women's social and physical capabilities [8, 10, 14, 15]. Existing gynecological pathology has a negative impact on a woman's life-quality and unfortunately, this fact is rarely paid attention in choosing a treatment or rehabilitation methods [10, 16, 17].

Taking into account previously noted, we can sum up that timely, effective, un-recurrent, and safe cure of the uterus and endometrium combined pathologies in women of the perimenopausal period with somatic pathology is actual and has to be studied deeply. Moreover, timely diagnosis and adequate therapy, taking into account the existing somatic pathology in perimenopause patients, is the key to successful prevention of uterus cancer development.

Thus, the analysis of the literature data indicates the need to determine the level of anxiety and depression in patients with the endometrium hyperplastic processes in the perimenopausal period.

## AIM

The research aim was to determine the level of anxiety and depression in patients with endometrial hyperplastic processes and somatic pathology in the perimenopausal period.

## MATERIALS AND METHODS

3-5 days before the expected surgery, we conducted a survey of 100 patients of the perimenopausal period with hyperplastic processes of the endometrium and myometrium (main group). The survey data of 50 healthy women in perimenopausal period without disorders in myometrium and endometrium served as a control. The control and the main groups were representative by the age: the age was from 46 to 60; the average age was 54.2±6.7 in the main group and 53.1±5.9 in the control ($p>0.05$).

To study the anxiety and depression level in patients with endometrial hyperplastic processes in the perimenopausal period, we used questionnaires PHQ-2 and PHQ-9 according to the requirements of the Ministry of Health of Ukraine from 25.12.2014 No. 1008. Questionnaire PHQ-2 consisted of two points. If answered yes to at least one question, the survey was conducted using the PHQ-9 questionnaire, a nine-point depression self-assessment scale that is effective in diagnosing major depressive disorder (MDD). Criteria for assessing the severity of depression were performed in points: 0-4 points no depression; 5-9 points mild "subclinical" depression; 10-14 points moderate depression; 15-19 points moderate-severe depression; 20-27 severe depression.

In order to objectively assess of the anxiety and depressive symptoms' degree, a questionnaire was conducted according to the Hospital Anxiety and Depression Scale (HADS). The HADS scale [18] was subjective and designed to screen for anxiety and depression in somatic hospital patients.

Objectification of the results was achieved through statistical processing of materials using the Microsoft Excel analysis package and with the help of computer software products included in the Microsoft Office Professional 2000 package, Russian Akademik OPEN No Level license. The obtained results were processed by the methods of variation statistics: absolute values using Student's t-test, relative values (%) the non-parametric Fisher's test angular transformation (f). The probability level of an error-free forecast was limited by the t-criterion ($t\geq2$; $P\geq95\%$) or evaluated the probabilistic characteristics of the results of any of the used statistical methods $0.001 < p < 0.05$.

## RESULTS

The frequency of extragenital pathology in our examined patients is shown in Table 1.

We drew attention to the fact that the frequency of the main types of extragenital pathology in patients of the control group was a little lower. However, we have not found significant differences between the groups ($p>0.05$). This indicated the representativeness of the groups in terms of the frequency of extragenital pathology.

Analysis of the main types of extragenital pathology frequency in the examined patients showed that the structure of extragenital pathology was dominated by varicose veins in the lower extremities, arterial hypertension of the second and third stages; ischemic heart disease, angina pectoris; obesity, liver, gall bladder, and pancreas pathologies. It has been noted, that 78.0% of patients had somatic pathology represented by two or more diagnoses.

In our study, the following disorders were observed in the psycho-emotional state of the examined women according to the PHQ-9 questionnaire, of the main group: feeling of fatigue and exhaustion 64.0±4.8%; sleep disorders 64.0±4.8%; appetite problems 46.0±4.98%; depressed mood and low interest in ordinary affairs 54.0±4.98%; difficulty concentrating 33.0±4.7%; hypodynamia 26.0±4.4%; 4% of patients intended the possibility do to themselves (Table 2).

**Table 1.** Frequency of extragenital pathology in the examined patients, (P ± m)

| Extragenital pathology | Main group n=100 | Control group n=50 |
|---|---|---|
| Anemia | 25.0±4.36* | 2.0±1.98 |
| arterial hypertension of 2-3 stages | 46.0±4.98* | 20.0±5.66 |
| coronary heart disease | 8.0±2.7* | 4.0±2.8 |
| varicose veins of the lower extremities | 61.0±4.9* | 8.0±3.8 |
| Adiposity | 43.0±4.95* | 14.0±469 |
| diffuse euthyroid goiter | 17.0±3.76* | 6.0±3.36 |
| diseases of the gastrointestinal tract | 42.0±4.93* | 16.0±5.2 |
| Diabetes | 13.0±3.36* | 4.0±2.8 |

Note: * - p <0.05 between indicators in the main and control groups; difference is statistical valuable.

**Table 2.** The results of the survey on the questionnaire PHQ-9, (P ± m)

| Indicator | Main group (n=100) | Control group (n=50) |
|---|---|---|
| Very low interest or satisfaction from ordinary things | 54.0±4.98* | 10.0±4.2 |
| Bad mood, depression or feelings of helplessness | 52.0±4.99* | 18.0±5.4 |
| Difficulty falling asleep, intermittent or too long sleep | 64.0±4.8* | 28.0±6.3 |
| Feeling tired or exhausted | 64.0±4.8* | 14.0±4.9 |
| Poor appetite or vice versa - overeating | 46.0±4.98* | 18.0±5.4 |
| Bad thoughts about yourself | 5.0±2.2* | 0 |
| Difficulty concentrating | 33.0±4.7* | 20.0±5.6 |
| Your movements or speech are so slow that others may notice | 26.0±4.4* | 4.0±2.8 |
| Thoughts about harming yourself | 4.0±1.95* | 0 |

Note: * - p <0.05 between indicators in the main and control groups; difference is statistical valuable.

**Table 3.** Levels of anxiety and depression by the HADS scale (P±m)

| HADS scale | Control group (n=50) | Main group (n=100) |
|---|---|---|
| **The range of anxiety** | | |
| Norm (0–7 points) | 70.0±6.5* | 28.0±4.5 |
| Subclinical anxiety (8–10 points) | 22.0±5.8* | 50.0±5.0 |
| Clinical anxiety (over 11 points) | 8.0±3.8* | 22.0±4.1 |
| The depression level | | |
| Norm (0–7 points) | 84.0±5.2* | 26.0±4.4 |
| Subclinical depression (8–10 points) | 12.0±4.6* | 54.0±4.98 |
| Clinical depression (over 11 points) | 4.0±2.8* | 20.0±4.0 |

Note: *- p<0.05 between indicators in the main and control groups; difference is statistical valuable.

The results of the survey revealed a fairly high level of psycho-emotional stress in the surveyed women of the main group. Table 3 presents the results in assessment of the frequency rate and depression that was get in our research.

The analysis of the survey's data showed that anxiety symptoms were most often represented by complaints of a feeling of tension, inner anxiety, restlessness, and a feeling of panic. In patients with endometrial and myometrial pathology (main group), complaints were realized in subclinical (50.0±5.0) and clinical (22.0±4.1) anxiety. And the indexes of the main group were significantly higher (p<0.05) frequent than in women from the control group respectively, 22.0±5.8 and 8.0±3.8%. We have to note that pathological symptoms were found in 72.0% of patients with uterine pathology, which significantly exceeds this indicator in patients of the control group (30.0%).

The depressive syndrome was manifested by indifference, apathy, excitability, hypodynamia, negativism during the assessment of events, and complaints about the lack of perspective in the future. We have fixed both subclinical and clinical depression in both groups. So, for the main group, these indicators were established

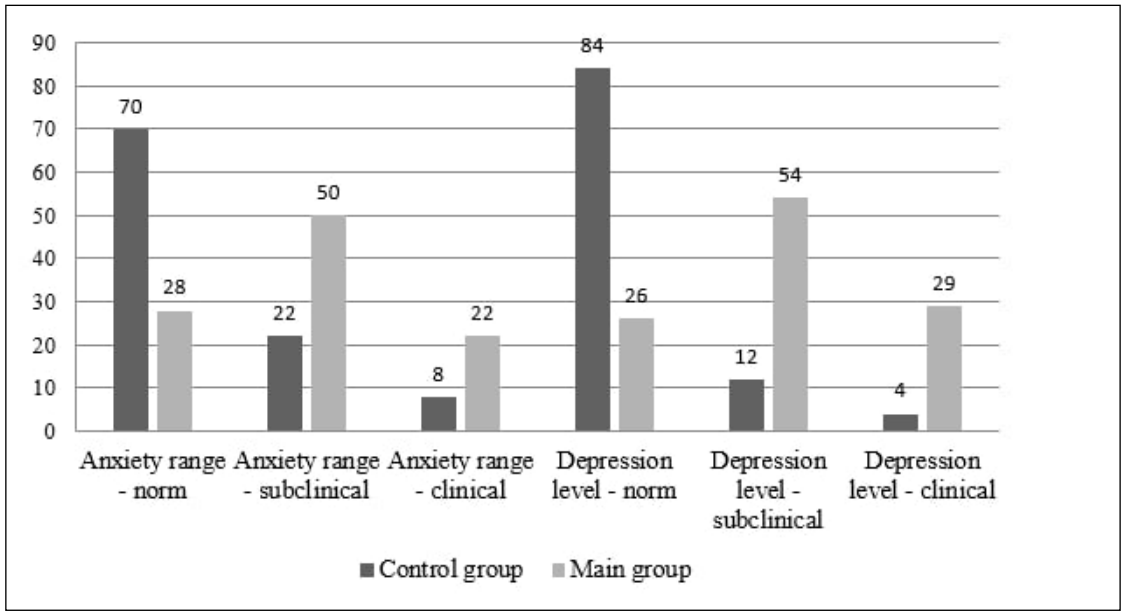


**Fig. 1.** The levels of anxiety and depression in the examined patients of the main and control groups.

in 54.0±4.98% and 20.0±4.0%. And for the control - in 12.0±4.6% and 4.0±2.8%. The differences between groups were significant ($p<0.05$). We can conclude that pathological symptoms, that were characteristic of the depressive syndrome, were found in 74.0% of patients in the main group and only in 16.0% of women in the control.

## DISCUSSION

Despite many studies on the endometrium inflammatory etiology and pathogenesis, the mechanisms of the process, the causes of its recurrence, and the lack of effecti0veness of conventional diagnostic, treatment-and-prophylactic measures are not fully understood. The high frequency of recurrences of endometrial pathology (29.5%) remains. It indicates the lack of effectiveness of the treatment-and-prophylactic and rehabilitation measures system for this category of patients [15]. It is an important task – to improve the effectiveness of the treatment and the life quality of premenopausal women with pathological endometrial processes. In this, we need to talk about taking care of the psychological state of the patients because of the impact of the behavior features on the treatment efficiency [14]. So, we were care of the task that remains an urgent problem in modern gynecology and its resolving makes it possible to improve the health of women in menopause.

As a result of our research, we can note that patients with the hyperplastic processes in the endometrium had a high level of concomitant somatic pathology and emotional stress. This indicates the presence of chronic stress, emotional instability, and anxiety. The obtained results on the frequency and combination of extragenital pathology in patients of perimenopausal age can show us a significant role of vascular and endocrine pathology in the development of hyperplastic processes of the endometrium [2, 3, 9].

We fixed, 78% of patients of this age had a combined extragenital pathology. In the analysis of literary sources according to our research topic, we need to note data from Kornienko (2017) [13, 19] regarding the frequency of extragenital pathology and pathological changes of the endometrium in the premenopausal period. According to the author's data, endometrium pathologies in the premenopausal period are accompanied by vegetative disorders, sleep disorders, and neuroticism, which correlated with our data.

Conducted research gives us possible to detect the character dysfunctional personal features of patients perimenopausal age with the endometrial pathologies [20, 21]. We had an opportunity to detect the neuroticism, decreased balance, and severe autonomic dysfunction syndrome manifested by various sleep disorders. The levels of anxiety and depression in the studied groups were compiled in Fig. 1.

These results may indicate the presence of constant stress in the examined patients, as well as emotional instability and anxiety. And our data is confirmed by Onya and Otorkpa [22] who note that the range of the depression disorders is 45.67% in the postmenopausal period. We noted that the range of depression behavior in women with extragenital pathology was over 70% and significantly higher than in control group of patients.

We can note that the preference in behavior disorders is in difficulties with sleeping and, as a result, in feeling tired or exhausted (Table 2). This significantly reduces immunity defense and lowers regeneration proprieties [23]. This fact is indirectly confirmed by the fact of low interest in life flowing (over 50% of persons with gynecological disorders) (Table 2).

The obtained by us results regarding the psychical and emotional state of women suffering from endometrial hyperplastic processes are confirmed by the research results of Boychuk, et al. [2, 9]. Also, our data is complement to the Gambadauro, et al. (2018) [12] research. The authors traced the relationship between endometrial pathology and depressive symptoms, which are mainly determined by chronic pain. Moreover, individual vulnerability factors for such patients were fixed in their research. According to Laganà et al. [20] as well as to Singh and Puckett [21], the presence of severe autonomic, anxiety-depressive, and neurotic disorders in patients with hyperplastic processes of the endometrium was due to disorders in the hypothalamic-pituitary-adrenal-ovarian axis of hormonal regulation. The increased secretion of gonadotropic, steroidal, and tropic was detected.

## CONCLUSIONS

In patients with hyperplastic processes in endometrium and myometrium against the background of extragenital pathology, a high level of somatic pathology and psycho-emotional stress is found, which indicates the presence of chronic stress, emotional instability, and anxiety.

We have fixed that the group of women with hyperplastic processes of the endometrium and myometrium had significant increased levels of clinical and subclinical anxiety and depression levels: 72% of patients in the main group had anxiety signs and 83% of this group had depressive signs. However, these parameters in the control group were 30% and 16% respectively. So, based on the results of our study, we can note the demand to manage and, if it is a requirement, correct psychological and emotional disorders in patients with hyperplastic processes of the endometrium and myometrium to improve treatment efficiency.

The obtained psychological and emotional disorders are the result of adverse effects of somatic diseases and gynecological pathology. However, the timely diagnostics and correct cure of fixed behavior disorders will affect the physiological state and can improve the treatment efficiency because of improving the psycho-somatic state of the patient's body.

Medicals can easily use the proposed scale for checking anxiety and depression. So, we can recommend using it in common practice for the initial detection of anxiety and depression in patients.

## REFERENCES


1. Papakonstantinou E, Adonakis G. (). Management of pre-, peri-, and post-menopausal abnormal uterine bleeding: When to perform endometrial sampling? Int. J. Gynecol. Obstet. 2022;158(2):252-259. doi: 10.1002/ijgo.13988. DOI
2. Vesco KK, Leo MC, Bulkley JE et al. Improving management of the genitourinary syndrome of menopause: evaluation of a health system–based, cluster-randomized intervention. Am. J. Obstet. Gynecol. 2021;224(1):62.e1–62.e13. doi: 10.1016/j.ajog.2020.07.029. DOI
3. Isnyuk NO, Boychuk AV, Begosh BM, Oniskiv BO. Characteristics of psychoemotional status and quality of life indicators in women with uterine fibroids and combined endocrine pathology. Current issues of pediatrics, obstetrics and gynecology. 2018;1:76–79.
4. Murji A, Whitaker L, Chow TL, Sobel ML. Selective progesterone receptor modulators (SPRMs) for uterine fibroids. Cochrane Database Syst Rev. 2017;4(4):CD010770. doi: 10.1002/14651858.CD010770.pub2. DOI
5. Kornienko SM. Endometrial pathology and personality traits in the late reproductive and premenopausal period. Reports of morphology. 2017;23(1):57–61.
6. Kornienko SM, Kvashenko VP, Akimova IK. Influence of extragenital diseases on the quality of life of women of late reproductive age and premenopausal period with endometrial pathology. J Womens Health. 2015;2:120–123.
7. Tatarchuk TF, Kosey NV, Zanko OV, Retunskaya IM. Prediction of hyperproliferative diseases of the endometrium in postmenopausal women. Collection of scientific works of the Association of Obstetricians and Gynecologists of Ukraine. 2018;2(42):179–183.
8. Chumak ZV, Zelinsky OO, Shapoval MV. Relationship between the development of endometrial hyperplastic processes and a woman's age. Collection of scientific works of the Association of Obstetricians and Gynecologists of Ukraine. 2018;1(41):166–170. doi: 10.12775/JEHS.2020.10.04.023. DOI
9. Boichuk AB, Shadrina VS, Vereschagina TV. Evaluation of the psychosomatic state in women with hyperplastic processes of the endometrium. Actual Iss. Pediat. Obstet. Gynecol. 2018;(1):48-51. doi: 10.11603/24116-4944.2018.1.8743. DOI
10. Doll KM., Barber EL, Bensen JT et al. The impact of surgical complications on health-related quality of life in women undergoing gynecologic and gynecologic oncology procedures: a prospective longitudinal cohort study. Am. J. Obstet. Gynecol. 2016;215(4):457.e1–457.e13. doi: 10.1016/j.ajog.2016.04.025. DOI

11. de Souza Duarte N, de Almeida Corrêa L, Assunção L et al. Relation between Depression and Hormonal Dysregulation. Open J. Depress. 2017;6:69–78. doi: 10.4236/ojd.2017.63005. DOI
12. Gambadauro P, Carli V, Hadlaczky G. Depressive symptoms among women with endometriosis: a systematic review and meta-analysis. Am. J. Obstet. Gynecol. 2019;220(3):230–241. doi: 10.1016/j.ajog.2018.11.123. DOI
13. Korniyenko SM. Neurotic disorders and pathology of the endometrium in women of late reproductive and premenopausal age. Scientific Light. 2017;1(3):39-46.
14. Laurentino S, de Souza S, Sougey E. The Neurophysiological Substrate of the Decision-Making Process in Depressed Patients. Open J. Depress. 2020;9:43–57. doi: 10.4236/ojd.2020.93005. DOI
15. Nicula R, Costin N. Management of endometrial modifications in perimenopausal women. Clujul Med. 2015;88(2):101–110. doi: 10.15386/cjmed-421. DOI
16. Giri SK, Nayak BL, Mohapatra J. Thickened endometrium: when to intervene? A clinical conundrum. J. Obstet. Gynecol. India. 2021;71(3):216-225. doi: 10.1007/s13224-020-01415-4. DOI
17. Krishnamurti T, Davis A, Quinn B, Simhan H. 941 Validation of a new app-embedded depression risk screening question in a real-world clinical setting. Am. J. Gynecol. Obstet. 2021;224(2):584-585. doi: 10.1016/j.ajog.2020.12.966. DOI
18. Singh G, Puckett Ya. Endometrial Hyperplasia. Treasure Island (FL): StatPearls Publishing, 2021.
19. Kornienko SM. Autonomic disorders on the background of endometrial pathology in the late reproductive and premenopausal period. Bulletin of scientific research. Ternopil. 2017;2:118–123.
20. Laganà AS, La Rosa VL, Rapisarda AMC et al. Anxiety and depression in patients with endometriosis: impact and management challenges. Int J Womens Health. 2017;9:323–330. doi:10.2147/ijwh.s119729. DOI
21. Krishnamurti T, Davis A, Quinn B, Simhan H. Validation of a new app-embedded depression risk screening question in a real-world clinical setting. Am. J. Obstet. Gynecol. 2021;224(2):584–S585. doi: 10.1016/j.ajog.2020.12.966. DOI
22. Onya O, Otorkpa C. Prevalence and Socio-Demographic Determinants of Depression in Women: A Comparison between Pre-Menopausal and Post-Menopausal Attendees of the General Outpatient Department in Fmc Lokoja. Open J. Depress. 2018;7:51–59. doi: 10.4236/ojd.2018.73004. DOI
23. Sanjida S, Kissane D, McPhail SM et al. Anxiety and depression in patients with early stage endometrial cancer: A longitudinal analysis from before surgery to 6-month post-surgery. J. Psychosocial Oncology Research and Practice. 2019;1(3). doi: 10.1097/OR9.0000000000000013. DOI

## CONFLICT OF INTEREST

The Authors declare no conflict of interest

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