



ORIGINAL PAPER

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Symptoms of menopause and health of women during perimenopause

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Abstract

Introduction. Perimenopausal age is the time in a woman's life, when her reproductive capacity declines. Characteristic symptoms in the majority of systems accompany this process.

Aim. The aim of the study was to determine the symptoms of menopause and investigate the most common health problems in perimenopausal women.

Materials and methods. The study involved 180 women in perimenopausal age (45-55 years). The subjects were mainly residents of rural areas (65%) and married (84%). Most of them declared secondary education (57%). A questionnaire developed by the authors was used in the study.

Results. Most women observed typical menopausal symptoms mostly between 45 and 49 years of age. Most often, these were hot flushes, the second place was night sweats, and the third place was insomnia. Almost 40% of women are treated for chronic diseases, most of them for hypertension, thyroid disease and diabetes.

Conclusions. The changes associated with perimenopausal age in the majority of respondents include genitourinary system, respiratory system, skeletal system and metabolic changes. Level of education influences the level of knowledge among women on the menopause. Women from rural areas used non-pharmacological methods to mitigate the symptoms of menopause to a greater extent.

Keywords. menopause, perimenopausal age, women, health

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Participation of co-authors: A – Author of the concept and objectives of paper; B – collection of data; C – implementation of research; D – elaborate, analysis and interpretation of data; E – statistical analysis; F – preparation of a manuscript; G – working out the literature; H – obtaining funds

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Introduction

Menopause or climacterium is a natural process resulting from declining ovarian function. During this period, numerous disorders appear, which are both of psychogenic and somatogenic character, and they are mainly the result of changes occurring due to the reduction of estrogen secretion, by the aging ovaries. Before menopause occurs, there are changes in the female body that are progressing. They usually last for 5-6 years and occur mostly at the age of 42-47. In Poland, this period is on average between 47 and 51 years of age.^{1,2}

The term menopause is used to describe the last menstrual period in a woman's life. According to the *North American Menopause Society* (NAMS), menopause is a physiological stage, defined as the last menstrual period in a woman's life and suppression of ovarian function. Natural menopause is diagnosed after 12 months without menstruation. It occurs on average in women aged 52, but may occur between 40 and 58 years.³ It is accompanied by characteristic ailments from most systems. These symptoms, known as fallout or climacteric syndrome, include: hot flushes, night sweats, palpitations, insomnia, mood swings, irritability and can be very annoying.^{4,5}

Menopause is divided into several periods. Pre-menopause is the time between the period of full fertility and menopause, occurring usually around 40 years of age. During this time, no hormonal disturbances are experienced. Only in laboratory tests an elevated level of FSH is found. Perimenopause is a period that begins shortly before menopause and lasts up to 12 months after its occurrence. Characteristic symptoms, the so-called fallout may occur then. In about 40% these cycles are anovulatory. The level of estrogen and progesterone decreases and the level of FSH and LH increases. The number of Graaffian follicles drops relatively quickly in the ovaries. In about 40% these cycles are anovulatory. Menopause means the last bleeding. The occurrence of the last menstrual period depends on the number of Graaffian follicles. Their greatest amount occurs in the fetal period and decreases as the years go by. Female fertility begins to gradually decline at the age of 35. It was also proved that in women who had menarche late, the climacteric period will appear relatively early. Lifestyle,

general health, genetic factors also affect the appearance of menopause. It is accelerated by: stress, poor diet, smoking, diabetes, drugs that lower estrogen levels, chemotherapy, immune system diseases, ovarian removal, radiation therapy. Postmenopausal period is the time when no monthly bleeding appear. In the woman's body significant hormonal changes occur - decreased progesterone and estrogen levels as well as high levels of FSH and LH.^{6,7}

In addition to physiological symptoms, somatic disorders including the circulatory system, skeletal system, skin, urogenital and mental systems from irritability and mood changes to depression often appear in this period.⁴ The aim of the study was to determine menopausal symptoms and health issues in women during this period.

Material and methods

The study covered 180 women in the perimenopausal period (45-55 years), residents of the Subcarpathian Voivodeship. The inclusion criterion was the age of women in the range of 45-55 years. Research carried out in the period from January to March 2015. The majority of women had secondary education (57.2%), 27.2% had higher education, and 15.6% had primary education. The city, as a place of residence, was indicated by 34.4% of women, and the countryside - 65.6% of the respondents. The majority of the respondents were married (84.4%), and 15.6% of the respondents were single (Table 1).

The diagnostic survey method, the survey research technique were used and the research tool was the questionnaire developed by the authors. The differences between variables were verified using the Pearson chi square test. The level of significance was adopted at $p < 0.05$. Statistica 2.0 was used for calculations.

Results

In 24.4% of women, menarche occurred between 11 and 12 years of age. The first menstrual period most often occurred in women between 13 and 14 years (52.8%), and at the age of 15 and over in 22.8% of women.

A group of 8.9% of women have never been pregnant. 22.2% of women had one pregnancy and 36.7%

Table 1. Socio-demographic data of the surveyed women

Age	45-47		48-50		51-55	
	56	31.1%	50	27.8%	74	41.1%
Education	primary		secondary		higher	
	28	15.6%	103	57.2%	49	27.2%
Place of residence	city		countryside			
	62	34.4%	118	65.6%		
Marital status	married		single			
	152	84.4%	28	15.6%		

Table 2. Obstetric and gynecological history

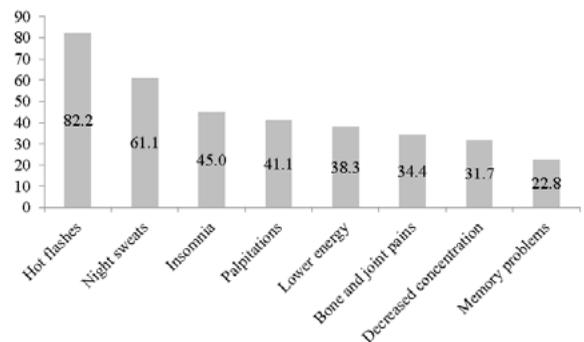
Age at menarche	11-12		13-14		15 and more			
	44	24.4%	95	52.8%	22	22.8%		
Parity	0		1		2		3 and more	
	16	8.9%	40	22.2%	66	36.7%	58	32.2%
Age at the first birth	<18		18-25		26-35		>35	
	18	10.0%	106	58.9	40	22.2%	2	1.1
History of gynecological conditions	yes		no					
	70	61.1%	110	38.9%				
Gynecological surgeries	yes		no					
	70	61.1%	110	38.9%				
Age at the first symptoms	35-44		45-49		50-54			
	44	24.4%	112	62.2%	24	13.3%		
Typical menopause symptoms	yes		no					
	178	98.9%	1	1.1%				
Ob.-gyn consultation	yes		no		I am planning			
		42.2%		42.2%		15.6%		
HRT using	yes		no		I am planning			
		12.2%		80.0%	14	7.8%		
Constant gynecological care	yes		no					
	146	81.1%	34	18.9%				
Comorbidities	yes		no					
	71	39.4%	109	60.6%				

were pregnant twice. A group of 32.2% of women were pregnant at least 3 times. 10.0% of women gave birth to their first child before the age of 18. The women surveyed most often gave birth to the first child when they were between 18 and 25. The group of 22.2% of women gave birth to the first child between 26 and 35 years old. The group of 7.8% of respondents never gave birth.

Most women (98.9%) observed typical menopausal symptoms. Almost a quarter (24.4%) of women had the first symptoms of menopause between 35 and 44 years of age. Most frequently the surveyed women observed such symptoms between 45 and 49 years of age (62.2%). A group of 13.3% women - between 50 and 54 years of age. More than half of women (61.1%) were diagnosed with gynecological disease (most often endometriosis and uterine fibroids) and the same percentage of women underwent gynecological procedures. Under the constant care of the gynecologist there were 81.1% of women. 39.4% of women are treated for chronic diseases, most of them for hypertension, thyroid disease and diabetes (Table 2).

All respondents observed the occurrence of typical menopausal symptoms. Most often, these were hot flushes (82.2%), the second place was night sweats (61.1%), and the third place was insomnia (45.0%). 41.1% of women reported heart palpitations and 38.3%

of subjects reported lower energy. To a lesser extent, women observed bone and joint pains, decreased concentration and memory problems. Fig. 1.

**Fig. 1.** Symptoms of menopause in the surveyed women

When analyzing the results of the study, it was not found that the incidence of somatic problems typical of the perimenopausal period depended on the place of residence of women. Statistically significant differences related to the occurrence of psychiatric symptoms in the study, which were more frequent in women living in the city (90.3%) than those living in the countryside (78.0%) and the use of means to mitigate the symptoms of menopause - 81.4% of rural women and 54.8% of urban residents (Table 3).

Table 3. The incidence of menopausal symptoms and the place of residence.

The menopausal symptoms and the place of residence		The place of residence				p
		City		Countryside		
		N	%	N	%	
The incidence of typical menopausal symptoms	Yes	62	100	116	98.3	0.3026
	No	-	-	2	1.7	
Problems within the reproductive system	Yes	32	51.6	54	45.8	0.4553
	No	30	48.4	64	54.2	
Problems within the urinary system	Yes	51	82.3	84	71.2	0.1031
	No	11	17.7	34	28.8	
Problems within the respiratory system	Yes	45	72.6	88	74.6	0.7721
	No	17	27.4	30	25.4	
Changes in the skeletal system	Yes	53	85.5	98	83.1	0.6731
	No	9	14.5	20	16.9	
Metabolic changes	Yes	54	87.1	102	86.4	0.9021
	No	8	12.9	16	13.6	
Problems within the cardio-vascular system	Yes	22	35.5	36	30.5	0.4973
	No	40	64.5	82	69.5	
Sexual dysfunctions	Yes	32	51.6	70	59.3	0.3213
	No	30	48.4	48	40.7	
Weight gain from the onset of menopause	No	23	37.1%	36	30.5%	0.3709
	Yes	39	62.9%	82	69.5%	
Psychiatric symptoms	Yes	56	90.3%	92	78.0%	0.0394
	No	6	9.7%	26	22.0%	
The use of means to mitigate the symptoms of menopause	Yes	34	54.8%	96	81.4%	0.0002
	No	28	45.2%	22	18.6%	

Table 4. Self-assessment of knowledge about menopause and education of the respondents

Self-assessment of knowledge about menopause	Education						p
	Primary		Secondary		Higher		
	N	%	N	%	N	%	
Very good	2	7.1	14	13.6	9	18.4	0.2044
Good	14	50.0	56	54.4	32	65.3	
Satisfactory	10	35.7	29	28.2	8	16.3	
Unsatisfactory	2	7.1	4	3.9	0	0.0	

13.9% of women assessed their state of knowledge about menopause as very good. A good level of knowledge in this field was declared by 56.7% of the respondents, satisfactory knowledge by 26.1% of people, and poor by 3.3% of the women. The analysis of the research showed that a higher level of knowledge about menopause and related problems was declared more often by women with higher education (18.4%). A good level of knowledge in this area was declared more often by women with higher education (65.3%). Satisfactory level of knowledge was most often indicated by people with primary education (35.7%), but these differences were not statistically significant (Table 4).

The respondents asked about the methods of alleviating the symptoms of fallout usually indicated a change in diet to easily digestible, which was declared by 13.9%. Most women, however, did not change their

diet (86.1%). 42.2% of the women declared active lifestyle. Among the used forms of physical activity, Nordic walking was the most frequently mentioned (36.1%). Running was on the second place (21.1%). To a lesser extent, women chose fitness (13.9%), Zumba (12.8%), swimming (12.2%) or gym (11.1%). Few women chose team sports (3.3%). However, almost every fourth respondent (23.3%) did not do any sport. Fig. 2.

The use of pharmacological or non-pharmacological agents to eliminate the symptoms of the fallout was indicated by 72.2% of the women. Among non-pharmacological agents, the respondents most often used soya preparations. The group of 27.8% of the respondents did not use any methods. Hormone replacement therapy (HRT) was used by 12.2% of women, and a group of 7.8% of the respondents declared using HRT in the future.

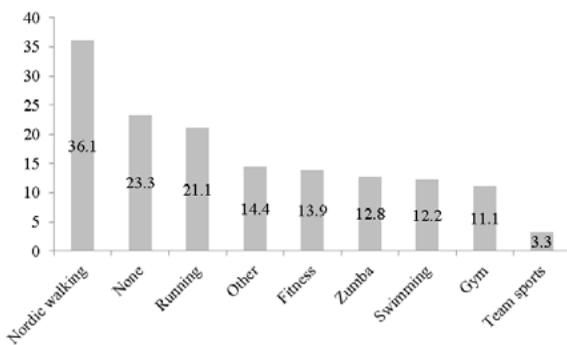


Fig. 2. Forms of physical activity

One of the aims of the paper was to identify health problems during menopause and many women confirmed in the study that apart from physiological symptoms, health problems also appear in this period.

Respiratory symptoms occurred in the group of 73.9% of women. The most common symptom indicated by the respondents was panting (66.9%). To a lesser extent, shortness of breath (22.6%), dyspnea (27.0%), chest pain (15.0%) were indicated.

Cardiovascular symptoms occurred in the group of 32.2% women.

Among cardiovascular ones, the most frequently mentioned were coronary heart disease or heart failure (31.0%). Some respondents also had a heart attack (6.9%).

The skeletal problems were indicated by 83.9% of women. The subjects most frequently mentioned back pains (66.9%). In the second place were sacral pain (47.0%), and the third place was pain between the shoulder blades (26.5%). To a lesser extent, the women experienced pain of the thoracic spine, decreased body

height, hump, susceptibility to fractures or changes in the spine.

The occurrence of metabolic changes was indicated by 86.7% of women. The respondents most often observed an increase in body weight from 2 kg to 20 kg (68.6%), followed by a slower metabolism (51.9%) and constipation (44.2%). To a lesser extent, women observed an increase in LDL cholesterol, an elevated level of fasting glycaemia or a decrease in LDL cholesterol.

Skin lesions appeared in most women (89.4%). In this group, skin dryness most frequently occurred (77.0%). To a lesser extent, discoloration (28.0%) or flaking (12.4%) appeared.

The incidence of genital problems was indicated by 47.8% of women. Most women (75.0%) stated that they had urinary symptoms. Nearly 40% of women had bladder infections and urinary incontinence. The group of 34.1% women indicated frequent urination, and a quarter of them urination at night (nocturia).

The occurrence of sexual dysfunction associated with menopause has been observed by over half of the respondents (56.7%). Most often it was a libido disorder (58.8%). To a lesser extent, dyspareunia (29.4%), lack of orgasm (23.5%) appeared. The group of 13.7% of the respondents did not notice such problems.

Psychiatric symptoms as a result of menopause were indicated by 82.2% of women. Most often, these symptoms were related to mood swings (71.6%), in every fourth woman appeared melancholy and fear of aging (25.7%). In addition, the respondents indicated the emergence of depressive moods, fear of losing femininity or loss of respect for oneself (Table 5).

Table 5. The most frequent conditions in women in individual systems

	N	%	N	%	N	%	N	%
Respiratory system	panting		shortness of breath		dyspnea		chest pain	
	120	66.9%	79	22.6%	66	27%	27	15%
Cardio-vascular system	coronary heart disease		heart failure		palpitations		heart attack	
	68	37.8%	48	37.0%	61	34.1%	45	25.2%
Skeletal system	pain in the spine		Sacral pain		back ache		thoracic pain	
	28	15.6%	103	57.2%	49	27.2%	31	17.2%
Digestive system and metabolism	increase in body weight		slower metabolism		constipation		elevated level of glycaemia	
	62	34.4%	118	65.6%	79	44.2%	35	19.9%
Changes on the skin	dryness		discolouration		flaking			
	138	77%	50	28.0%	22	12.4%		
Urinary system	bladder infections		urinary incontinence		frequent urination		nocturia	
	68	37.8%	66	37.0%	61	34.1%	45	25.2%
Reproductive system	libido disorder		dyspareunia		lack of orgasm		no change	
	105	58.8%	52	29.4%	42	23.5%	24	13.7%
Psychological realm	mood swings		lower mood		fear of aging		depression	
	128	71.6%	47	26.4%	46	25.7%	36	20.3%

Discussion

The perimenopausal period is a difficult stage in life for most women, because then numerous health problems occur associated with hormonal changes taking place in the body as a result of the decrease in the hormonal function of the ovaries. Almost all respondents observed typical symptoms of menopause, most often they appeared between 45 and 49 years, i.e. in the range indicated in Pertyński's study.⁸

In the study group, the most common symptoms associated with menopause were: mood swings, irritability, concentration disorders, sweating, skeletal changes (osteoporosis), weight gain, skin changes, bladder symptoms and problems in the vulva and vagina. In similar papers, the same symptoms appeared, for example in Stachoń study the most common symptoms were: irritation, hot flushes, sleep disorders, sudden mood changes.⁷ In turn in Makara-Studzińska's study low mood, problems in the joints and muscles, physical and mental fatigue and irritation were found.⁹

The most serious health problems of menopausal women are vasomotor symptoms, metabolic changes, insomnia and mood swings. The women observed hot flashes, night sweats, insomnia, palpitations and a drop in energy. To a lesser extent - bone and joint pain, decreased concentration or memory problems were observed. The most frequent symptoms of the menopausal period in the studies of Mroczek et al. were headache, excessive nervousness, while in the studies of Skrzy-pulec et al. - hot flushes and sweating.^{10, 11}

It is also worth citing the results of studies investigating the relationship between menopause and sleep disorders. Tao et al. in the study conducted in China, showed that sleep disorders are not related to menopause, in contrast to Polish studies in which Słopień et al. demonstrated such dependence.^{12, 13}

Analyzing in detail the disorders caused by menopause, almost the entire group of the respondents indicated the occurrence of metabolic changes. Most often it was an increase in body weight (68.6%), slow metabolism (51.9%), and constipation (44.2%). This could have been the cause of increased weight in some subjects, which since the appearance of menopause has been noticed by one-third of respondents, indicating that the weight gain ranged from 2 kg to 20 kg.

During this period, the probability of onset of somatic diseases increases significantly in women. Grzechocińska et al. indicates that many women are beginning to develop systemic diseases, for example obesity, hypertension, diabetes, ischemic heart disease, and in Pawlak's research respondents most often suffered from arterial hypertension, osteoporosis, arthritis, asthma and diabetes.^{4, 2} Our research has also shown that 40% of women were treated for chronic diseases, most often it was arterial hypertension, thyroid disease and diabetes.

Regarding the incidence of changes in the skeletal system, as much as 83.9% of women indicated them. Most often, these were spinal pains and sacral pain. The loss of bone mass is very rapid in women in the first years after menopause, due to estrogen deficiency. Hormonal therapy, regular physical activity and proper nutrition may delay bone changes.¹⁴

On the other hand, respiratory symptoms were most often caused by panting (66.9%). Symptoms of the cardiovascular system occurred in the group of 32.2% women. Among cardiovascular symptoms, the respondents most often mentioned coronary heart disease or heart failure. Only one third of the respondents did not have symptoms from this system. Skin changes (dry skin, discoloration) appeared in 89.4% of women. Three quarters of the studied women suffered from urinary problems. The most common symptoms were bladder infections (37.8%), urinary incontinence (37.0%) and frequent urination (34.1%). Noszczyk suggests that estrogen supplementation may reduce skin hardening to a certain degree, but it may have a lower impact on wrinkles that do not respond to estrogen therapy.¹⁵

The occurrence of sexual dysfunctions induced by menopause was observed by over half of the surveyed women (56.7%), the most frequently mentioned were libido disorders (58.8%) and dyspareunia (29.4%). The lack of orgasm during sexual intercourse was experienced by almost one quarter of the respondents. According to a study conducted by Johnson in England, 78.4% of the subjects between 45 and 59 years of age were sexually active.¹⁶ According to Lew-Starowicz, 64.2% of women between 50 and 54 years of age are sexually active in Poland.¹⁷ However, it should be emphasized that many women in this period of life are lonely due to breakup in relationship or widowhood.

Most of the respondents had psychiatric symptoms. Most often they were mood swings (71.6%). To a lesser extent, there were states of melancholy, fear of aging, depression of varying degrees or to a different degree fear of losing femininity. In the studies of Sakson-Obada et al., women also pointed to the occurrence of similar symptoms: mood swings, anxiety, psychological tension or attention deficit.¹⁸ M. Synowiec-Piłat's research showed that care of mental health in the menopausal age became evident in educated women who had regular physical activity. 81% of the respondents practicing physical exercises once a week, admitted stress reduction and better psychological well-being.¹⁹

Statistical analysis of the collected material showed that women with higher education assessed their knowledge about menopause and health related problems better. A good level of knowledge in this area was declared by over half of the respondents, and satisfactory knowledge was provided by over a quarter of the respondents.

It was found that women living in cities had more knowledge about HRT than women from the countryside. Among the respondents 81.1% were under constant supervision of the gynecologist. Women who were not under the care of a gynecologist were inhabitants of the countryside. Research of Kózka et al. shows that during menopause, women hardly ever control their health or do not follow the doctor's instructions. Only 42% of the studied population admitted that they regularly perform control tests, including breast self-examination.²⁰

At this stage of life, women are particularly vulnerable to cervical and ovarian cancer, which is why they need regular gynecological and cytological tests.¹⁶ The obtained results indicate that only 42.2% of women consulted the gynecologist with problems related to menopause. HRT was used by 12.2% of women - city inhabitants. The group of 7.8% of the respondents consider the use of HRT in the future, and 80% of the respondents have not used it so far, because they decided that they do not need it (32.9%), they were afraid of the harmful effects of hormonal agents (30.4%) and possible side effects (24.1%). In the studies of Pawlak et al., majority of the respondents did not use HRT (88.3%).²

In order to relieve menopausal symptoms, women use both pharmacological and non-pharmacological means, as indicated by 72.2% of women surveyed. Inhabitants of the countryside have a greater knowledge of non-pharmacological methods of dealing with the problems of menopause. On the other hand, conducting an active lifestyle as a way to minimize perimenopausal symptoms was declared by 42.2% of women. Among the used forms of physical activity, the inhabitants of the countryside preferred Nordic walking, and urban residents preferred running. Physical activity is one of the most important determinants of health condition in perimenopausal women.²¹ In the study by Pawlak et al., women chose the most frequently physical exercises and swimming and in the study Mędrała-Kuder, respondents to ease the relief of menopausal symptoms, they most often used HRT (90%), relaxation and avoidance of stress (76%), herbs (57%) and physical activity (33%).^{2,22}

The studies carried out indicate that among the women surveyed occurred typical menopausal symptoms and health problems. It would be necessary to undertake educational activities aimed at modifying the health behavior of women in the perimenopausal age.

Acknowledgments

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Conclusions

1. Hot flushes, sweating, insomnia and palpitations are the symptoms of menopause that most often occur in the studied group of women.

2. The respondents most frequently complained of the genitourinary, respiratory and skeletal symptoms as well as metabolic changes.
3. Women from the countryside more rarely declared psychiatric problems and more often used non-pharmacological methods to relieve menopausal symptoms.
4. The perimenopausal period is conducive to the occurrence of certain diseases such as diabetes, hypertension, cardiovascular diseases and obesity.

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