

# Assessment of pain, acceptance of the disease, adaptation to life and strategies of coping with the disease in patients with endometrial cancer

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## Summary

Diagnosis of cancer reduces the quality of patients' life and results in diverse attitudes towards the disease. The aim of the present study was to evaluate the strategy for coping with pain, acceptance of the disease and adaptation to life in endometrial cancer patients. The study was conducted among 119 women. The applied research technique comprised of four questionnaires: The Beliefs about Pain Control, The Pain Coping Strategies, Approval Illness Scale and Mental Adjustment to Cancer. The highest mean score affecting pain control was pointed on the influence of physicians, but depended on the respondents' education and professional status. The most common strategy for coping with the disease was hoping/praying and included fighting spirit and positive reevaluation. The adopted strategies were differentiated mainly by the patients' age. The level of acceptance of the disease was not differentiated by any socio-economic variable.

**Key words:** Endometrial cancer; Pain control; Strategies for coping with pain; Acceptance of illness.

## Introduction

Endometrial cancer constitutes 7.7% of women cancers. In 2016 in Poland endometrial cancer was the fourth most prevalent cancer among women – 6,266 cases were registered (standardized ratio – 16.4/100,000). For comparison – in 2010, the number was less than 3,500 (12.0/100,000 women). The incidence of endometrial cancer in Poland is much higher than the average in the European Union, where the incidence rate per 100,000 women is around 10.8 [1-3].

A significant majority (approx. 90%) of endometrial cancer occurs in women over 50 years of age, with a maximum incidence at 65-69 years of age [1]. In the emergence of endometrial cancer, a significant role is played by excessive stimulation of the body with female hormones – estrogens. Other factors affecting endometrial cancer development include: obesity, hypertension and genetic factors. Among women diagnosed with endometrial cancer, the 5-year survival rate is about 77%. In Poland each year approx. 1,600 women die of endometrial cancer (standardized ratio – 3.2/100,000), with the risk of death due to endometrial cancer systematically increasing with age [2, 3].

Diagnosis of cancer and the related treatment process is a source of stress for patients, affecting their family, social and professional life. In addition, pain associated with

cancer reduces the quality of life assessed by patients. Attitudes towards the disease, including strategies for coping with pain, may influence treatment outcomes as well as the level of feeling the discomfort associated with the disease.

The aim of the present study was to evaluate the strategy for coping with pain and its control, acceptance of the disease and adaptation to life with cancer in patients with endometrial cancer. The analysis also comprised the influence of socio-economic factors (education, professional status, income, place of residence) and radiotherapy on the above-mentioned issues.

## Materials and Methods

The study was conducted among 119 endometrial cancer patients, after completed oncological therapy, under outpatient control at the Center of Oncology-Maria Skłodowska-Curie Institute in Warsaw in 2017-2018. Metastases were diagnosed in 33 patients (27.7%). 12 (10.1%) of the respondents underwent radiation therapy.

The applied research technique comprised of a questionnaire interview, including questionnaire questions asked by the interviewer and four questionnaires to measure the struggle with the disease:

The Beliefs about Pain Control Questionnaire (BPCQ), intended to study people suffering from pain [4];

The Pain Coping Strategies Questionnaire (CSQ), used to study people who complain about pain [5];

Approval Illness Scale (AIS), evaluating the level of acceptance of the disease [6];

Mental Adjustment to Cancer (Mini-MAC), assessing the level of mental adjustment to the disease [7].

The obtained results were subjected to statistical analysis using Student's t-test for independent samples, ANOVA one-way analysis, Kruskal-Wallis H test and U-Mann Whitney test. The assumed level of statistical significance was  $p < 0.05$ .

The test results were compared with the socio-economic characteristics of the respondents: age, education, professional status, the size of the place of residence and net income per household member, as well as the fact whether or not patients underwent radiotherapy in the past year.

## Results

### Pain control

The questions contained in the Beliefs about Pain Control Questionnaire (BPCQ) evaluate the strength of individual beliefs concerning personal pain control (internal factors) through the influence of physicians (strengths of others) or through random events.

In the case of patients with endometrial cancer the highest mean score of the test was obtained by the influence of physicians ( $M = 16.51$ ;  $SD = 4.47$ ), and the lowest – by random events ( $M = 14.74$ ;  $SD = 4.28$ ) (Table 1).

Among patients with endometrial cancer, age, education and professional status constituted the differentiating variables.

A statistically significant positive correlation was obtained between the patients' age and the locus of pain control in random events (Pearson's  $r = 0.183$ ). Older patients attributed greater importance to random events.

Education of the respondents differentiates the results obtained in the area of attributing the influence to physicians ( $p = 0.001$ ) and random events ( $p = 0.041$ ). The mean values of the locus of pain control in the influence of physicians were higher in the group of people with basic or vocational education ( $M = 17.54$ ,  $SD = 3.99$ ) and in the group of people with secondary education ( $M = 17.32$ ,  $SD = 4.52$ ) than in the group of people with higher education (14.03,  $SD = 3.93$ ), while the mean value of the locus of pain control in random events was higher in the group of people with secondary education ( $M = 15.72$ ,  $SD = 3.62$ ) than in the group of people with higher education ( $M = 13.71$ ,  $SD = 4.54$ ) (Table 2).

It turns out that respondents who are pensioners assign greater influence on pain to physicians and random events ( $M = 17.59$ ,  $SD = 4.59$  for the influence of physicians and  $M = 15.72$ ,  $SD = 4.36$  for random events), while working patients assign smaller influence on pain to physicians and random events ( $M = 15.56$ ,  $SD = 4.08$  for the influence of

Table 1. — Results of BPCQ for patients with endometrial cancer.

Area of BPCQ	Mean (M)	Standard deviation (SD)
Internal factors	15.38	5.55
Influence of physicians	16.51	4.47
Random events	14.74	4.28

M - average value; SD - standard deviation.

physicians and  $M = 14.06$ ,  $SD = 4.01$  for random events) ( $p = 0.019$  for the influence of physicians and  $p = 0.046$  for random events) (Table 3).

The place of residence, income and undergoing or not undergoing radiotherapy in the last year do not differentiate the pain control results (in all cases  $p > 0.05$ ).

### Strategies for coping with pain

The CSQ questionnaire is designed to assess strategies for coping with pain used by patients. Methods of coping with pain reflect six cognitive strategies and one behavioral strategy, which in turn are part of three factors: cognitive coping, distraction and taking substitute actions, and catastrophizing and seeking hope [8]. In the present study we refer only to behavioral strategy as a method of fighting pain (according to the CSQ questionnaire, Rosenstiel & Keefe). Increased behavioral activity in this context according to questions from the questionnaire is related e.g. to leaving home, being around other people, doing housework, etc.

The highest mean score for respondents suffering from endometrial cancer was observed in the area of praying/hoping ( $M = 21.40$ ,  $SD = 9.79$ ), while the reevaluation of pain reached the smallest value ( $M = 12.37$ ,  $SD = 8.64$ ) (Table 4).

Among respondents in the case of whom the area of the primary lesion is the uterine body, results of the test are differentiated by age and the place of residence.

Age of patients positively correlated with the area of praying/hoping (Pearson's  $r = 0.185$ ) and increased behavioral activity (Pearson's  $r = 0.204$ ). In both cases, older patients obtained higher CSQ scores in the above areas.

The areas of praying/hoping ( $p = 0.047$ ) and increased behavioral activity ( $p = 0.045$ ) are differentiated also by the patients' place of residence. Higher results in these areas were obtained by patients living in smaller towns (< 100,000 residents) ( $M = 22.69$ ,  $SD = 10.40$  for praying/hoping and  $M = 21.35$ ,  $SD = 9.42$  for increased behavioral activity). The mean for praying/hoping for patients living in larger cities was  $M = 18.95$  ( $SD = 8.08$ ), and for increased behavioral activity  $M = 17.63$  ( $SD = 9.68$ ). We assumed that people from smaller towns may show greater faith in the influence of doctors or accidental events. Smaller towns have a lower employment rate, patients are less educated, they may have different beliefs, and they are usually more attached to religion. All these elements can affect the pain control.

Table 2. — Locus of pain control vs. education of patients with endometrial cancer.

Area of BPCQ	Education							
	vocational/primary		secondary		higher		F	p
	M	SD	M	SD	M	SD		
Internal factors	14.96	6.19	16.07	5.78	14.42	4.36	1.00	0.370
Influence of physicians	17.54	3.99	17.32	4.52	14.03	3.93	7.17	0.001
Random events	13.79	4.94	15.72	3.62	13.71	4.54	3.27	0.041

*Average values of pain control dimensions in the group of people with basic or vocational education, in the group of people with secondary education and in the group of people with higher education. M - average value; SD - standard deviation; F - value of one-way analysis of variance; p - statistical significance.*

Table 3. — Locus of pain control vs. professional status of patients with endometrial cancer.

Area of BPCQ	Professional status							
	working group		pensioners		t	df	p	
	M	SD	M	SD				
Internal factors	15.36	4.52	15.78	6.04	-0.40	97.76	0.689	
Influence of physicians	15.56	4.08	17.59	4.59	-2.38	102	0.019	
Random events	14.06	4.01	15.72	4.36	-2.02	102	0.046	

*M - average value; SD - standard deviation; t - value of the Student's t test; df - number of degrees of freedom; p - statistical significance.*

Education, income per household member, professional status or undergoing radiotherapy do not differentiate the results of the CSQ test among the patients with endometrial cancer (in all these cases  $p > 0.05$ ).

#### Acceptance of the disease

The AIS questionnaire is used to measure the level of acceptance of the disease. The questionnaire consists of eight statements, constituting one scale. Possible results for each respondent are in the range of 8 to 40. The lower the score, the greater the severity of negative reactions and emotions associated with the current disease, and thus its lower acceptance. The higher the score, the better the adaptation and the lesser the sense of mental discomfort.

The mean AIS score for patients suffering from endometrial cancer was  $M = 27.08$  ( $SD = 7.48$ ), and none of the socio-economic variables studied significantly affected the degree of acceptance of the disease by the studied patients.

Analyzing education, the average value of acceptance of the disease in the group of people with primary or vocational education was  $M = 26.71$  ( $SD = 7.51$ ), in the group with secondary education it was  $M = 26.85$  ( $SD = 6.99$ ), and in the group of people with higher education it was  $M = 27.84$  ( $SD = 8.50$ ) ( $p > 0.05$ ).

The mean value of acceptance of the disease in the group of people living in towns with a population of up to 100,000 residents amounted to  $M = 26.41$  ( $SD = 7.91$ ) and it was close to the mean value obtained in the group of people who live in cities with a population over 100,000 residents of  $M = 28.34$  ( $SD = 6.64$ ) ( $p > 0.05$ ). As with pain control,

patients with different beliefs may respond to the disease differently.

In the group of patients with a net income per household member  $<$  PLN 1,500, the mean value of acceptance of the disease was  $M = 26.69$  ( $SD = 7.38$ ), and for people with higher income it was  $M = 27.41$  ( $SD = 7.60$ ) ( $p > 0.05$ ).

The mean value of acceptance of the disease in the working group was  $M = 27.42$  ( $SD = 7.05$ ) and it was close to the mean value obtained in the group of pensioners amounting to  $M = 26.74$  ( $SD = 7.49$ ) ( $p > 0.05$ ).

The mean value of acceptance of the disease in the group of people who were treated with radiotherapy was  $M = 26.08$  ( $SD = 8.59$ ) and it was also close to the mean value obtained in the group who were not treated with radiotherapy –  $M = 27.19$  ( $SD = 7.38$ ).

Table 4. — Results of CSQ for patients with endometrial cancer.

Area of CSQ	Mean (M)	Standard deviation (SD)
Distraction	19.15	9.06
Catastrophizing	12.51	8.45
Reevaluation of pain	12.37	8.64
Ignoring sensations	14.16	9.71
Praying/hoping	21.40	9.79
Declaring hoping	20.03	9.36
Increased behavioral activity	20.07	9.63

*M - average value; SD - standard deviation.*

**Table 5. — Results of the Mini-Mac test for patients with endometrial cancer.**

Area of Mini-Mac	Mean (M)	Standard deviation (SD)
Anxiety	17.10	5.03
Fighting spirit	22.87	3.73
Hopelessness-helplessness	12.74	4.55
Positive reevaluation	21.66	2.88

M - average value; SD - standard deviation.

### *Mental adjustment to the disease*

The Mini-Mac questionnaire measures four ways of mental adjustment to the disease: anxiety, helplessness-hopelessness, fighting spirit and positive reevaluation, whereas anxiety and hopelessness-hopelessness constitute part of a passive (destructive) style of coping with the disease, the other two dimensions refer to an active (constructive) style of struggling with the disease [9].

Patients suffering from endometrial cancer obtained the highest result of the Mini-Mac test in the area of fighting spirit ( $M = 22.87$ ,  $SD = 3.73$ ) and positive reevaluation ( $M = 21.66$ ,  $SD = 2.88$ ), and the lowest in the area of helplessness-hopelessness ( $M = 12.74$ ,  $SD = 4.55$ ) (Table 5).

Differences between particular categories, differentiated due to socio-economic characteristics, were very small. Statistical significance was obtained only in the area of positive reevaluation (for age and professional status) and anxiety (in relation to education).

The area of positive reevaluation positively correlated with the age of patients (Pearson's  $r = 0.245$ ), which means that older patients attributed greater importance to this area. Similarly, positive reevaluation was a strategy of more importance for pensioners ( $M = 22.20$ ,  $SD = 3.25$ ) than for working people ( $M = 20.78$ ,  $SD = 2.12$ ) ( $p = 0.021$ ).

Anxiety was statistically significantly higher in the case of people with lower education (primary/vocational  $M = 17.04$ ,  $SD = 4.61$ , secondary  $M = 18.10$ ,  $SD = 4.89$ ) than in the case of people with higher education ( $M = 15.23$ ,  $SD = 5.26$ ) ( $p = 0.034$ ).

The place of residence, income, or undergoing radiotherapy do not affect the patients' strategy of adaptation to cancer (for the analyzed variables  $p > 0.05$ ).

### **Discussion**

Modern medicine more and more often begins to pay attention not only to the therapeutic effects of treatment of chronic diseases, but also to the impact of applied therapies on the quality of life of patients, their daily functioning, well-being, and professional activity. The level of pain experienced by patients, strategies for coping with pain and the disease, their acceptance or psychological adaptation to the disease also constitute important matters [8].

Endometrial cancer is one of the most prevalent can-

cers in women. Cancer of the reproductive system constitutes one of the main causes of death in women at the post-menopausal age, which is a significant social problem. The quality of life of patients with cancer of the reproductive system is quite low, which is confirmed by many scientific studies [9, 10]. Barnas E. *et al.* (2013) estimate that 75% of women treated for cancer of the reproductive system were dissatisfied with their health and quality of life, and these results are not differentiated by the type of cancer [10]. Data from studies on women cured of trophoblastic disease, lymphoma or uterine cancer show that a high level of thoughts about reproduction is related to worse physical and mental functioning, a greater distress resulting from cancer and experiencing less social support [11].

The level of perception of quality of life is affected by factors such as acceptance of the disease and mental adjustment to the experienced discomfort, particularly pain [12]. The studied patients with endometrial cancer control pain mainly through the influence of physicians ( $M = 16.51$ ,  $SD = 4.67$ ) and random events ( $M = 14.74$ ,  $SD = 4.28$ ). They attribute the lowest value in influencing pain control to internal factors. Patients with breast also attributed the crucial role in pain control to physicians ( $M = 17.4$ ,  $SD = 4.04$ ) [13]. Both the author's study and the study of patients with breast cancer indicate that the influence of physicians decreases with an increase in education and is also lower in the case of professionally active people.

Similarly, patients with endometriosis obtained the highest result in the BPCQ test in the area of influence of physicians ( $M = 13.52$ ,  $SD = 3.94$ ), followed by random events ( $M = 13.17$ ,  $SD = 3.81$ ); the smallest role was assigned to internal control ( $M = 11.78$ ;  $SD = 3.96$ ) [14].

The strategy for coping with pain which obtained the highest value in the CSQ test among the studied endometrial cancer patients was praying/hoping ( $M = 21.40$ ,  $SD = 9.79$ ). Among breast cancer patients the strategy of declaring coping ( $M = 21.81$ ) prevailed [13], which among endometrial cancer patients in the author's study also reached a high mean ( $M = 20.03$ ,  $SD = 9.36$ ).

An analysis of 102 oncological patients using the CSQ test indicates that these patients usually cope with pain through praying/hoping, less often by declaring coping and distraction. The mean value of acceptance of the disease according to the AIS test among cancer patients in the study of Kózki M. *et al.* was  $M = 24.9$  ( $SD = 6.35$ ) [15]. A study of cancer patients over 60 years of age indicates that the average acceptance of the disease in these patients is  $M = 19.15$  ( $SD = 7.95$ ). Acceptance of cancer remarkably depends on age, and after 75 years of age it is clearly lower [16].

Endometrial cancer patients investigated in the present study are characterized by a higher level of acceptance of the disease, i.e.  $M = 27.08$  ( $SD = 7.48$ ). Acceptance of the disease in patients does not depend on the socio-economic variables studied or the fact of undergoing radiotherapeutic treatment.

In the study of patients with breast cancer it was indicated that they are characterized by a similar level of acceptance of the disease (at the level of  $M = 27.21$ ,  $SD = 8.96$ ) compared to the author's study [17, 18].

Adaptation to cancer involves coping with the disease itself and its consequences, and in the long term - the necessary adaptation to the broadly understood changes in the quality of life. Typically, after cancer diagnosis, patients take two approaches to cope with their new situation: active (fight and mobilization) or passive (anxiety and resignation). These attitudes significantly affect the quality of life of patients and, moreover, they contribute to the results of treatment. Studies show that adoption of active strategies is much more beneficial for patients [19].

The strategies for mental adjustment to the disease that achieved the highest results in the MiniMAC test among patients with endometrial cancer are fighting spirit ( $M = 22.87$ ,  $SD = 3.73$ ) and positive reevaluation ( $M = 21.66$ ,  $SD = 2.88$ ). Similarly, Rogala D. *et al.* (2016) indicate that constructive strategies prevail among women with cervical cancer: fighting spirit ( $M = 22.63$ ,  $SD = 2.88$ ) and positive reevaluation ( $M = 21.10$ ,  $SD = 2.64$ ). The area of anxiety obtained values of  $M = 16.07$  ( $SD = 4.42$ ), while helplessness-hopelessness  $M = 12.63$  ( $SD = 3.76$ ). Women with cervical cancer being in relationships achieved higher levels of helplessness-hopelessness and positive reevaluation, and a worse financial situation was associated with a more frequent choice of destructive strategies [20]. In the author's study, the level of destructive strategies (anxiety) was influenced only by the patients' education. Patients with lower education were characterized by anxiety to a greater extent.

Also, the study of patients with cancer of the reproductive system indicates that constructive strategies prevailed in the study group: positive reevaluation ( $M = 22.97$ ,  $SD = 2.77$ ) and fighting spirit ( $M = 22.95$ ,  $SD = 3.25$ ). Age, education, place of residence, marital status or material conditions did not affect the result of the Mini Mac test [21].

Kupcewicz E. *et al.* (2017) also indicates that in the study of women with cancer of the reproductive system, the highest values of the Mini Mac test are obtained in the areas of positive revaluation ( $M = 21.9$ ,  $SD = 301$ ) and fighting spirit ( $M = 21.6$ ,  $SD = 3.47$ ). Thus, the mean for the constructive style ( $M = 43.5$ ,  $SD = 5.76$ ) in these patients was much higher than for the destructive style ( $M = 21.7$ ,  $SD = 5.28$ ). The study conducted by Kupcewicz E. *et al.* (2017) indicated that older patients obtained lower values in the area of fighting spirit and higher in the areas of helplessness-hopelessness and anxiety than the younger patients [22, 23].

Juczyński Z. (2001) in the standardized sample of the MINI-MAC questionnaire carried out among 266 patients with cancer of the reproductive system, prostate cancer, breast cancer, stomach cancer, intestinal cancer, pancreatic cancer and laryngeal cancer indicate that women use destructive strategies less frequently in comparison to men.

He confirms that in the case of cancer of the reproductive system the prevailing strategies include fighting spirit and positive reevaluation, in contrast to patients with stomach or pancreatic cancer, where anxiety and helplessness-hopelessness prevail [24]. Similar conclusions were drawn by Szczepańska-Gieracha J. *et al.* (2010), who indicates that constructive strategies prevail among women with cancer of the reproductive system and breast cancer [25]. Also Kozak G. (2012), studying five groups of patients: patients with stomach cancer, pancreatic cancer, colon cancer, prostate cancer and patients with cancer of the reproductive system, indicates that positive reevaluation and fighting spirit were most often selected by women diagnosed with cancer of reproductive organs. Furthermore, the more the patients accept their disease, the more intense the strategy of fighting spirit, and the less intense the destructive strategies [26]. A study of 325 patients with various types of cancers confirms that patients are most often characterized by fighting spirit ( $M = 44.94$ ,  $SD = 6.13$ ) and anxiety ( $M = 18.27$ ,  $SD = 3.80$ ) [27].

Strategies for coping with pain and disease, as well as the level of the quality of life are associated with both the emotional state and the stage of the disease. A study of 50 patients under palliative care indicates that almost half of them experience pain of significant severity. About 30% of patients suffered from depression or states close to depression. When analyzing strategies for coping with the disease, patients obtained average results for constructive and destructive strategies. Very high results, amounting to almost 44%, were observed for anxiety, and only 20% for fighting spirit [28]. In the case of patients with severe pain, higher values for anxiety, fighting spirit and a destructive style of coping with the disease were reported [12].

Patients with cancer are often anxious [29]. Women diagnosed with cancer of the reproductive system experience a much higher level of stress. During that period, they apply various kinds of methods to fight stress, emotions, pain and disease. The adopted strategy often differs depending on the patients' situation (diagnosis, severity, treatment results) [30].

It should be noted that the level of satisfaction with information received by patients with endometrial cancer during treatment is insufficient. More than half of the patients in the study conducted by Nicolaije K.A *et al.* (2012) declare that they did not receive information about the causes of their disease, and every third patient did not know about the possible side effects of therapy. In particular, the patients lacked information about the possibility of obtaining additional help during their disease, rehabilitation, psychological support or information about the impact of the disease on social life and sexuality [31].

Yilmaz S.D. *et al.* (2015) indicates that in the case of women with gynecological cancers, socioeconomic factors have a significant influence on coping strategies. Patients with a good financial situation, better educated patients and professionally active patients usually use active strategies

for coping with the disease, wanting to effectively support the treatment process with their attitude [32]. In the author's study, education and professional activity of the patients were of primary importance.

## Conclusions

Regarding endometrial cancer patients, the highest mean score affecting pain control was obtained in the area of the influence of physicians, although the results vary depending on the respondents' education and professional status.

The highest result among the strategies for coping with the disease was obtained by hoping/praying. The adopted strategies are differentiated by the patients' age and place of residence. The area of praying/hoping reached a higher value in the case of older people and people living in small towns.

The level of acceptance of the disease among endometrial cancer patients is not differentiated by any socio-economic factor.

Most common methods to cope with the disease declared by patients suffering from endometrial cancer include fighting spirit and positive reevaluation.

## Ethics approval and consent to participate

The work described in this article has been carried out in accordance with the Code of Ethics of the World Medical Association (Declaration of Helsinki) on medical research involving human subjects; the ethical principles defined in the Farmington Consensus of 1997. The study was approved by the Bioethics Committee of the Medical University of Warsaw.

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## Conflict of Interest

The authors declare no conflict of interest.

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