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Factors Influencing Mental Adaptation in Women with Gynaecological Cancer

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Abstract

Introduction. Cancerous disease has specific dynamics and requires the patient to be able to cope in a constantly changing situation.

Indexed keywords: psychological adaptation, stress, gynaecological cancer

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Aim of the study. Differentiation analysis of the influence of selected sociodemographic and medical variables on the degree of mental adaptation to disease in the group of women treated for gynecological cancer.

Material and methods. The study covered 102 women after hysterectomy due to gynaecologic cancer. Mean age of patients was 56.1 (SD=10.75) years. Data was collected using the Mini-MAC Mental Adaptation to Cancer Scale and the questionnaire of own design. The p level of <0.05 was considered significant.

Results. Significant differences were observed between the age of the respondents and the anxiety absorption strategy (H=10.19; p<0.02) and the fighting spirit strategy (H=10.95; p<0.02). The extent of hysterectomy significantly differentiated (H=8.10; p<0.04) the intensification of the strategy of impotence, confusion and passive disease. Larger differences in ways to deal with the disease have been revealed by women who, in addition to hysterectomy, have also been treated for other comorbidities. The differentiation was related to the strategy: fighting spirit (H=14.33; p<0.0008), helplessness/hopelessness (H=16.54; p <0.0003) and positive revalidation (H=10.98; p<0.004).

Conclusions. Surveyed women showed a more constructive style of coping with cancer and more frequently used a strategy of fighting spirit and positive revalidation. Familiarity of factors differentiating the level of mental adaptation to cancer can influence the modification of the behavior of patients and be useful in the work of the therapeutic team.

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INTRODUCTION

Gynaecological malignancies contribute to 10% to 15% of cancers in women internationally [1]. The dynamic development of knowledge on oncological gynecology and the introduction of new, modified diagnostic and surgical techniques have contributed to the reduction of mortality rates in the female population due to gynaecological cancer [1-2]. In the United States, a hysterectomy is one of the most commonly performed surgical procedures, particularly for the treatment of gynecological malignancies. A similar situation is observed in Poland [2]. In the case of cancer, the degree and extent of surgery depends on the clinical stage of the condition. The scope of medical interventions is related to the immediate consequences of the disease, which may be cognitive, emotional and behavioral, and may affect mental adaptation to cancer [2-3]. In the face of disease, people behave in an individual way called the style of coping [3-5]. It is believed that the important cause of these differences are individual characteristics (properties) of a person who exhibits a relatively constant, specific tendency to cope with stress [3-5]. Coping is a dynamic process. This is a constantly changing way of working and making decisions in response to stressful situations, and undoubtedly life-threatening cancer is such a stressful situation [3]. According to Watson *et al.*, the ways in which a person copes with difficulty and adversity at suspicion or at the onset of of disease are identified as strategies for mental adaptation to cancer [4-5]. In recent years, a trend towards new perioperative care strategies has been documented as 'Fast Track (FT) surgery', or 'Enhanced Recovery Programs' to replace some traditional approaches in surgical care. The FT multimodal programs may enhance the postoperative recovery by means of reducing surgical stress [1]. Anderson *et al.* found that a 12-week education program on lifestyle behaviors in the group of 330 women under the Women's After Cancer Program (WWACP) was conducted within 24 months of completion of chemotherapy (primary or adjuvant) and/or radiotherapy. Participants of that study had an assessment done in the areas of quality of life, physical activity, sleep quality, alcohol consumption, smoking - at the start of the intervention, after 12 weeks ie. at completion of the intervention, and after 24 months , to determine the level of sustained behavior change. Results showed that women treated for blood, breast and gynecological cancers demonstrate increasingly good survival rates. However, they experience residual health problems that are potentially modifiable through behavioral lifestyle interventions such as the WWACP [6]. Within the very same project, in a group of 351 Australian women, which completed an active treatment for cancer within the last 2 years, it was shown that anxiety scores were higher in women with early life stressors [7]. Worth noting are the results of studies conducted by the other authors . Andrykowski states that demographical and clinical variables do not predict quality of life (QoL) in gynaecological cancer survivors. Physical and mental QoL in gynaecological cancer survivors is most strongly related to psychosocial factors, such as insecure attachment style and current state of anxiety [8]. Zakowski *et al.* in a group of 88 women studied twice in a span of 6 months, investigated the role of neuroticism and extraversion in the effects of written emotional disclosure in patients diagnosed with gynaecological cancer. Multiple regression confirmed that neuroticism, but not extraversion, moderates the effects of emotional disclosure on distress, however, no

significant mediating relationships were found [9]. Yilmaz *et al.* conducted a study in a group of 221 women with breast cancer in Turkey and found that ,,women with gynecologic cancer who were employed and declared their incomes as balanced and reported more years of education were more likely to perceive higher social support and to use the ineffective coping ways with stress at a lower rate than other participants"[10]. Studies show that it takes months or years before a woman with gynecologic cancer can cope with its consequences. The length of the adaptation period depends on numerous medical, psychological and sociodemographic factors [3, 9, 11-12]. Overview of various studies of ill patients justifies the purpose of multidimensional approach to mental adaptation to cancer. The present study attempts to answer the following research question: To what extent do selected sociodemographic and medical variables differentiate the degree of mental adaptation to disease in the group of women treated with hysterectomy for gynecological cancer?

AIM OF THE STUDY

Analysis of the differentiation of the influence of selected sociodemographic and medical variables on the degree of mental adaptation to the disease in the group of women treated with hysterectomy for gynecologic cancer.

MATERIAL AND METHODS

The study was conducted between January 2015 and April 2016 in oncological gynecology departments located in hospitals in Olsztyn (Poland). The study involved 102 women who underwent hysterectomy for gynecologic cancer (endometrial, n=96; and cervical, n=6). All respondents were informed about the purpose of the survey and the confidentiality of the data and gave their consent to participate in the study. A diagnostic survey was used as a research method. Data was collected using an own design questionnaire, containing questions about sociodemographic and medical data. The degree of adaptation to the disease was investigated using the Mental Adaptation To Cancer Scale Mini-MAC *(by: M. Watson, M. Law, M. dos Santos, S. Greer, J. Baruch, J. Bliss)* in the Polish adaptation by Z. Juczynski. This tool measures four coping strategies: anxiety absorption - exacerbates the anxiety associated with illness, fighting spirit - expresses the mobilization of the patient to fight with the disease, manifests itself in active action, helplessness - hopelessness - is associated with bad predictions and testifies to a feeling of helplessness and passive submission to illness, positive revalidation - expresses hope and acceptance of one's own situation [3]. The strategy of fighting spirit and positive revalidation represent a constructive style, and the strategy of anxiety absorption and helplessness - hopelessness destructive style of coping with cancer. The tool contains 29 statements for which the respondent answers according to the following 4-step scale: 1 - definitely not, 2 - not quite, 3 – rather yes, 4 - definitely yes. Each of the strategies for coping with the disease contains 7 statements. The range of possible outcomes for each of the four strategies ranges from 7 to 28 points. The higher the score, the greater the intensity of the behavior that characterizes a particular way of coping with cancer. The tool has satisfactory psychometric properties. In Polish studies high Cronbach alpha coefficients were

obtained for the strategy of helplessness (0.92), fighting spirit (0.90) and slightly lower for anxiety absorption (0.89) and positive revalidation strategies (0.87) [3].

Statistical Analysis

Using the STATISTICA 12 PL package, the collected empirical data was analyzed statistically. Descriptive statistics were used to describe the data. The sums of the two strategies representing the constructive style and the two strategies characterizing the destructive style after conversion into standardized units were interpreted according to the characteristics of a stenographic scale that included 10 units and the step of the scale was equal to 1 sten. Scores in the range of 1-4 sten were interpreted as low, 5 and 6 sten were average and in the range of 7-10 were considered high [3]. The evaluation of variance of the values of tested features in classes of grouping variables was done using the Kruskal-Wallis (H) test. *Post-hoc test* was used for multiple comparisons. p level of <0.05 was considered significant.

RESULTS Characteristics of the study group

The study group consisted of 102 women aged from 28 to 80 with an average of 56.10 (SD =10.75) years. Almost ¾ the respondents lived in the city (n=74; 72.6%). Most of them were married (n=68, 66.7%). Most of them had secondary (n=43; 42.2%) and higher education (n=27, 26.5%). 38.2% (n = 39) was professionally active. In 62.7% (n=64), the BMI (kg/m²) was above the norm (>=30). The period of struggle with the disease among the patients was varied. Over a quarter of respondents (29.4%; n=30) reported their illness lasted for 2-3 years, slightly less (25.5%) that it lasted several months (<=6). All patients in the study had a surgical procedure performed. Complementary treatment in the form of chemotherapy was administered to 66.7% (n=68) and 34.3% (n=35) after surgery was treated with radiotherapy. As many as 67.6% (n=69) of the respondents indicated that, in addition to the gynecologic cancer, they also suffer from other diseases (sometimes two or more). The most common were hypertension (47.1%; n=48) and diabetes (19.6%; n=20). Over ¾ of the respondents (n=80; 78.4%) claimed that they always receive support from family/relatives whenever they need it.

Strategies and styles of coping with cancer

In the first step of analyzing the obtained results, the Mini-MAC descriptive statistics were determined and presented in Table 1, which shows that the highest mean values were obtained by the strategy of coping with cancer identified as positive revalidation (M=21.9; SD=3.01) and the fighting spirit (M=21.6; SD=3.47). The other two strategieshelplessness/hopelessness and anxiety absorption – had significantly lower mean values. Table 1. Mini-MAC Scale: descriptive statistics for strategies/styles of coping with cancer

N=102

Variables	M	SD	Me	Min.	Max.	d_1	d_9
Strategies for coping with illness							

1. Anxiety absorption	19.1	4.90	19	7	28	13	26	2. Fighting spirit	21.6	3.47	21	13	28	17	27
3. Helplessness/hopelessness	15.7	4.67	15	7	26	10	21								
4. Positive revalidation	21.9	3.01	22	13	28	18	25								
Styles of coping with illness															
1. Constructive	43.5	5.76	43	29	56	36	50	2. Destructive	21.7	5.28	22	9	31	15	29

Explanation: N – number M – average SD – standard deviation, Me – median, Min.minimum, Max.- maximum, d_1 – decile 10%, d_9 – decile 90%

The results of our own research show that a significantly higher average score was achieved by the constructive style (M=43.5: SD=5.76), which characterizes the fighting spirit and positive revalidation strategy, than the passive, destructive style (M=21.7; SD=5.28) represented by the helplessness-hopelessness and anxiety-absorption strategy. In the next step, the sums of points of the two strategies representing the constructive style and the two strategies characterizing the destructive style were transformed into standardized units interpreted according to the characteristics of the stenographic scale. As it turned out, high results in the range of 7 to 10 stems for constructive style were obtained by 42.2% of respondents, whereas a slightly larger group (49.0%) received average results of 5 to ten. Low scores of 1 to 4 stems) were obtained by 8.8% of respondents. An entirely different distribution of results concerned the destructive style. The results considered as low were obtained in 96.1% of the respondents (Table 2).

Table 2. Mini-MAC scale: constructive and destructive style of coping with cancer in the study group

Scores in sten scale	Styles of coping with illness			
	Constructive		Destructive	
	N=102	%	N=102	%
	9	8.8	98	96.1
Average (5-6 stens)	50	49.0	4	3.9
High (7-10 stens)	43	42.2	0	0.0

(1 – 10 stems)

Low (1-4 stems)

Socio-demographic and medical variables that differentiate strategies for coping with illness

Further considerations related to the analysis of the differentiation of the influence of selected sociodemographic and medical variables such as age, marital status, education, socioоccupational status, duration of illness, type of treatment and the presence of comorbidities in the choice of coping strategies in the study group. The results are presented in Tables 3 and 4

Table 3. Socio-demographic variables differentiating the choice of strategy for coping with illness

Socio-demographic variables		Strategies for coping with illness (Mini – MAC)							
		Anxiety absorption		Fighting spirit		Helplessness/hopelessness		Positive revalidation	
	N=102	Kruskal-Wallis Test (H)	*p-value*	Kruskal-Wallis Test (H)	*p-value*	Kruskal-Wallis Test (H)	*p-value*	Kruskal-Wallis Test (H)	*p-value*
Age									
≤50 years	33	10.19	p<0.02*	10.95	p<0.02*	6.15	p<0.10	2.00	p<0.57
51 - 60 years	30								
61 - 70 years	31								
≥71 years	8								
Marital status									
Single	5	1.39	p<0.70	7.10	p<0.06	6.42	p<0.09	1.82	p<0.60
Married	68								
Widowed	18								
Divorced	11								
Education									
Primary	16	2.19	p<0.53	1.25	p<0.73	4.47	p<0.21	2.03	p<0.56
Vacational	16								
Secondary	43								
Academic	27								
Employment status									
Professionally active	39	1.37	p<0.71	1.14	p<0.76	1.52	p<0.67	1.10	p<0.77
Unemployed	13								
Pensioner	35								
Annuitant	15								

Statistically significant: p<0.001***; p<0.01**; p<0.05*

Statistical analysis of collected data, revealed significant differences between the age of the respondents and the anxiety absorption strategy (H=10,19; p<0.02) and fighting spirit strategy (H=10.95; p<0.02). The *post hoc test* of multiple comparisons of mean ranks showed the existence of a statistically significant difference in intergroup comparisons. People under 50 years of age (p<0.02) were more likely to use an anxiety absorption strategy than those between the ages of 51 and 60. On the other hand, patients aged 51–60 years were more likely to choose active strategy, fighting spirit (M=23.0; SD=3.13) than those from the oldest age group (≥71 years) (p<0.02). Analysis of the results reveals a significant difference in the intensity of the fighting spirit strategy depending on the duration of the disease (H=10.23; p<0.03). The *post hoc test* showed a significant intergroup difference (p<0.05), which was related to people, who struggled with the disease for few months (<6 months) and those diagnosed with the disease four to five years before. Hysterectomy is the most commonly performed major gynecological operation in developed countries. This intervention involves both the physical sphere as well as the mental sphere. It has been proven which kind of surgery differentiates the use of coping strategies. The data show that the range of hysterectomy performed on the women in the study significantly differentiated (H=8.10; p<0.04) the intensification of the strategy of helplessness, confusion and passive submission to disease. The *post hoc test* showed a significant intergroup difference (p<0.03). Patients who had radical hysterectomy showed slightly more frequent use of the strategy of helplessness and hopelessness (M=18.4; SD=4.94) than patients after extrafascial hysterectomy with removal of the ovaries and fallopian tubes. From the analysis of the material collected, the greater variability in the ways of coping with cancer revealed the patients who, apart from hysterectomy, were also treated for other comorbidities. Differentiation involved three strategies: fighting spirit (H=14.33; p<0.0008), helplessness/hopelessness (H=16.54; p<0.0003) and positive revalidation (H=10.98; p<0.004).

Socio-demographic and medical variables that differentiate styles of coping with illness The data in table 5 indicate that significant differences occurred between the age of the respondents and the passive, destructive style of coping with cancer (H=9.49; p<0.02). The detailed analysis revealed a statistically significant difference (p<0.05) for intergroup comparisons. People in the age group 51-60 years most often declared passivity and less will to fight (M=23.0; SD=3.13). In some patients, the problem of multidisease played an important role during the process of adapting to cancer. Based on the data in table 6, it can be observed that the presence of comorbidities significantly differentiates both the constructive (H=5.50; p<0.0004) and the destructive (H=7.28; p <0.02) style of coping with the disease. In the case of a destructive style, the *post hoc* test showed a significant intergroup difference (p<0.03).

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The increased intensity of passive style was related to patients with at least two additional diseases (M=23.8; SD=4.93). Patients without any additional health problems were in a more favorable situation (p<0.001). They often showed a greater degree of constructive style.

Table 5. Socio-demographic variables that differentiate the choice of the style of coping with cancer

Socio-demographic variables		Styles of coping with illness (Mini – MAC)			
		Constructive		Destructive	
	N=102	Kruskal-Wallis Test (H)	*p-value*	Kruskal-Wallis Test (H)	*p-value*
Age					
≤50 years	33	7.47	p<0.06	9.49	p<0.02*
51 - 60 years	30				
61 - 70 years	31				
≥71 years	8				
Marital status					
Single	5	3.17	p<0.36	2.07	p<0.55
Married	68				
Widowed	18				
Divorced	11				
Education					
Primary	16	0.92	p<0.82	1.64	p<0.64
Vocational	16				
Secondary	43				
Academic	27				
Employment status					
Professionally active	39	1.46	p<0.68	0.45	p<0.92
Unemployed	13				
Pensioner	35				
Annuitant	15				

Table 6. Medical variables that differentiate the choice of the style of coping with cancer

Medical variables		Styles of coping with illness (Mini-MAC)			
		Constructive		Destructive	
	N=102	Kruskal-Wallis Test (H)	*p-value*	Kruskal-Wallis Test (H)	*p-value*
Time since diagnosis of cancer					
≤ 6 months	26	6.95	p<0.13	3.19	p<0.52
7 to 12 months	17				
2-3 years	30				
4-5 years	17				
≥6 years	12				
Type of surgical intervention					
Extrafascial hysterectomy with removal of ovaries and fallopian tubes	73	2.18	p<0.53	7.1	p<0.06
Radical hysterectomy	29				
Comorbidities					
no coexisting illnesses	33	5.50	p<0.0004***	7.28	p<0.02*
1 coexisting illness	39				
≥2 coexisting illnesses	30				

DISCUSSION

Studied women showed a more constructive style of coping with cancer and its immediate consequences than a destructive style. They declared greater will to fight and positive overestimation of the problem of their illness and less anxiety absorption, less helplessness. In a study conducted by Arnaboldi *et al.* using the Mini-MAC scale, the mean value of fighting spirit attitude and fatalism was higher in the study group than in the normative sample of the Mini-MAC validation study in the Italian cancer population. Their anxious preoccupation attitude was lower [13]. The results of the studies so far confirm that active strategies for coping with illness are more frequently used, mobilizing patients to bring more benefits to the patients than passive strategies [3,9,11-13]. The data obtained in the present paper emphasizes the age-related differences in the styles and strategies for coping with the disease. These are conclusions consistent with the majority of studies in this field - patients in adulthood show significantly lower levels of fighting spirit and higher levels of helplessness - hopelessness and anxiety over younger patients [13]. The process of coping with the disease is related to various cognitive, emotional and behavioral consequences [3]. It is important to support women during treatment and recovery so that they can take actions which may allow them to accept their disease without experiencing negative emotions or reactions [3]. The authors of many studies indicate that a highly stressful primary evaluation is a triggering factor for a positive revalidation strategy [14-17].

Studies by Szczepanska-Gierach *et al.* among malignant cancer patients show that strategies for coping with cancer can change over time. Choice often depends on the situation patients have to deal with. The authors conclude that during the hospitalization active strategies (fighting spirit and positive revalidation) reach very high values, accompanied by a low level of passive strategies (anxiety absorption, helplessness-hopelessness). They claim that this is due to the stimulation of strong defensive mechanisms that are activated to eliminate negative emotions [18-19]. On the long run, there is a need to cope with more general changes in quality of life [3]. Other researchers also point out that the choice of specific strategies for coping with the disease is conditioned by a number of individual and situational factors [20-21]. The results of our own research confirm the differentiation in the ways of dealing with cancer depending on the type and extent of hysterectomy and the occurrence of additional chronic diseases that increase helplessness, hopelessness and lower a patient's drive to take action. Wang *et al.* conducted a study aimed to examine the differences of cognitive emotion regulation (CER) strategies between patients with gynecologic cancer and non-clinical individuals. As it turned out, there were statistically significant group differences in the CER strategies used between the two groups. The most prevalent discrepancies of the CER strategies across the two samples were the self-blame, rumination, putting into perspective, catastrophizing, and blaming others [22]. Meggiolaro *et al.* as a part of a European study, examined the rate of emotional distress and maladaptive coping. The study included cancer patients (n = 302) from one Middle European (Austria) and two Southern European (Italy, Spain) countries. Results of the study show, that the prevalence of emotional distress (DT caseness) was 60% (26.1% mild, 18.8% moderate, and 14.9% severe distress). Maladaptive coping (Mini-MAC cases) was found in 22.8% (hopeless cases), and 22.5% (anxious preoccupation cases) [23]. A study by Rowlands *et al.* is also worth mentioning. In a group of 632 Australian women with endometrial cancer researchers aimed to identify the extent of positive and negative impacts of cancer and factors associated, amongst the long-term survivors. According to the analysis, various factors influenced the quality of life of the examined women. "An intermediate grade of endometrial cancer, a prior diagnosis of cancer and lower levels of education were significant, but weak, predictors of higher scores on the positive impact scale. Higher scores on the negative impact scale were predicted by a higher grade of cancer, poor physical and mental health, a younger age, being single or having lower levels of education"[24]. In a study by Rodrigues *et al.* results suggested that pelvic radiotherapy had a negative impact on female sexuality [25]. Other researchers have stated that psychological distress and QoL in cervical cancer survivors were not significantly different among treatment modalities and disease stage. Survivors in the high self-esteem group had lower levels of anxiety and depression and higher QoL scores (emotional and social/family aspects of QoL and total QoL) than those in the low self-esteem group [26]. In conclusion, it can be stated that coping with cancer is a dynamic process and preferred styles of coping with illness reflect the characteristics of the individual, while strategies of action are determined by situational factors, as well as by past experiences.

CONCLUSIONS

1. Studied women showed more constructive manner of coping with cancer and more frequently used a strategy of fighting spirit and positive revalidation.
2. Age has been a factor in differentiating strategies for coping with cancer. Women under the age of 50 and above 70 were more likely to use an anxiety absorption strategy, while those in the other age groups more often chose a fighting spirit strategy.
3. The type of hysterectomy performed in female patients differentiated the intensification of the strategy pointing to helplessness, confusion and passive submission to disease.
4. Patients without additional health burden associated with coexistent illness manifested a greater degree of constructive style.
5. Knowing the factors that differentiate the level of mental adaptation to cancer can influence the modification of the behavior of the ill women and be useful in the work of the therapeutic team.

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