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Stress coping strategies in malignant diseases among women diagnosed with breast cancer and men diagnosed with prostate cancer

Abstract

Introduction: Coping with cancer aims at the adaptation to the disease and its treatment. The study aimed to indicate which coping strategies in cancer are used most frequently among women diagnosed with breast cancer and men diagnosed with prostate cancer. Its other aim was to check if there are any gender differences in the use of coping strategies.

Patients and methods: The study involved 90 patients receiving radiotherapy due to the diagnosis of breast cancer or prostate cancer. To measure cancer coping strategies, Mini-COPE and Mini-MAC questionnaires were used.

Results: The most frequently used coping strategies were as follows: active coping, acceptance, use of emotional support, behavioral disengagement, turning to religion, positive reframing and fighting spirit.

Conclusions: Women diagnosed with breast cancer used venting more frequently, while men diagnosed with prostate cancer more often than women use the strategy of self-distraction.

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Key words: breast cancer, prostate cancer, stress, coping with stress

Introduction

The quality of life in cancer patients depends to a significant extent on the stress they face in relation to the disease and its treatment. Cancer is perceived as a disease that causes increased stress and many patients experience depression, anger and anxiety associated with the progress of the disease and the

threat of losing one's life. Classifications of coping processes typically focus on one of two recognized theoretical approaches [1]. The first focuses on coping and directing the person's orientation and activity toward solving the problem and managing the related emotions. The second approach targets coping methods that use cognitive and behavioral strategies. A combination of both approaches is used

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in the classification proposed by Moos and Schaefer [1] who present an integrated view of coping processes. The understanding of stress and coping with cancer tends to be closest to the transactional theory of stress developed by Lazarus and Folkman [2]. Illness as a stressful situation is also referred to as distress, which is a multifactorial, unpleasant emotional experience with psychological, social, and spiritual causes [3]. The goal of the process of coping with cancer is to adapt to the situation of illness and treatment.

The most well-known model of coping after a cancer diagnosis includes 5 coping strategies: helplessness-hopelessness, anxious preoccupation, denial/avoidance, acceptance, and fighting spirit [4]. Stoic acceptance, also referred to as fatalism, expresses recognition of the seriousness of illness and acceptance of it. Denial, also referred to as positive avoidance, is that the patient using this strategy does not believe in the seriousness of the disease and the threat it poses. Helplessness and hopelessness reflects passivity and surrender to the disease, with the patient believing that there is nothing they can do about it. The fighting spirit attitude prompts patients to treat their illness as a challenge and be willing to fight. Anxious preoccupation expresses itself through constant worry, thinking about the disease and attributing a disease-related meaning to every change. The forms of psychological adaptation presented here represent a construct that results from the combination of the assessment of risk triggered by cancer and the methods of coping with the disease.

A study of stress coping strategies among cancer patients indicates that coping plays an important role in the process of adaptation to illness. In a study on coping with illness by patients diagnosed with breast cancer during the first 3 months following mastectomy, stoic acceptance was the predominant attitude in the majority, while the remaining patients used strategies of denial, feelings of helplessness and hopelessness, and fighting spirit [5]. At 10 years after surgery, the highest survival rate was observed in women in whom the attitude of fighting spirit and disease denial prevailed, while women who coped with the disease through acceptance and helplessness were more likely to die. Active coping strategies are more often associated with better adaptation to illness and higher quality of life, compared to less active strategies [6-8], but the individual situation of patients is important, for example, if the source of stress cannot be removed or its intensity reduced, avoidance strategies may also be adaptive. According to Lazarus, there is no coping strategy that is automatically more adaptive than others, and the level of adaptation depends on the specific situation [9].

Coping with stress takes on particular importance in illness, as it involves not only adaptation to the experienced symptoms of the disease, treatment and its side effects, but also to changes in self-image, changes in roles, and coping with the fear of deterioration and death. Chojnacka-Szawłowska points to 2 tasks necessary in the process of coping with the disease [10]. The first task is coping with the disease itself and related problems, such as pain and side effects of treatment. The second task involves coping with life that has changed because of the illness. Fulfilling this task involves, but is not limited to, securing a moderate emotional balance and maintaining a satisfactory self-image. Some patients seek and others avoid information about their disease. Information-oriented behavior may be a stress coping strategy. The patient's approach to information about the disease allowed us to distinguish two styles of cognitive coping [1]. The first is the information-seeking style which involves coping with danger by seeking information about the threat, thereby reducing anxiety and uncertainty. This style involves careful monitoring [10, 11]. Seeking information about the disease is associated with a tendency to confront and combat the negative factors associated with the threat.

The second coping style involves avoiding information about the threat. Patients who avoid information tolerate uncertainty well, mainly due to distraction, whereas information overload makes them anxious [11]. This style involves the suppression of warnings (blunting) [10, 11]. Information avoidance is associated with a tendency to withdraw and escape. Both the confrontational and avoidance style are more effective than passivity and resignation in the face of serious illness [1].

Religion can be an important resource in coping with cancer. Coping with a difficult situation can involve a religious coping strategy which refers to the process in which a person seeks meaning by referring to the religious realm, i.e. God, the community of the Church, or other believers [12]. The concept of religious coping with stress was based on Lazarus and Folkman's [2] view of stress. According to this concept, coping includes positive and negative religious strategies. Positive strategies include, for example, viewing a stressful situation as an opportunity to draw closer to God or to use and give spiritual support. Negative religious coping strategies involve, for example, viewing difficult events as punishment from God [12]. Positive religious coping strategies are associated with a lower level of emotional distress and lower severity of psychosomatic symptoms [13], whereas the use of negative religious strategies is associated with psychopathological symptoms involves, for example, anxiety disorders and depression [14].

Based on the concept of Lazarus and Folkman [2] and the theory of behavioral self-regulation [15], the coping strategies proposed by Carver, Scheier and Weintraub [16] were distinguished. According to Lazarus and Folkman’s transactional theory of stress, in a stressful situation, a person evaluates the possibility of removing the causes of stress by assessing the sources of stress, i.e. making a primary appraisal, as well as assessing their own resources, i.e. making a secondary appraisal of a stressful situation [2]. To restore the balance between oneself and the environment, own competence, material resources, and social support are assessed. Making a secondary appraisal can prompt an activity related to changing a stress transaction, which is referred to as stress coping. In Lazarus and Folkman’s theory, coping refers to „cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” [17]. Scheier and Carver’s concept assumes that the process of self-regulation is based on two systems: goal-striving and avoidance [15]. The goal-striving system reduces discrepancies, focuses and attracts action, while the avoidance system increases discrepancies and generates distance to the undesirable situations that trigger the desire to withdraw. The COPE questionnaire for measuring coping strategies and its shortened version Mini-COPE were developed based on the above concept.

The purpose of this study was to present the coping strategies for stress in cancer used by women diagnosed with breast cancer and by men diagnosed with prostate cancer and to investigate if there are gender differences in this regard.

Patients and methods

The study was conducted among 90 patients of the Radiotherapy Department during a 5–7 week hospital stay who were receiving radiotherapy: 45 women for breast cancer, 45 men for prostate cancer. The age of all patients in the study group was: range 31–79, mean and standard deviation (SD) 60.34 ± 9.87 years, female age: 31–78, 56.53 ± 10.20 years, male age: 44–79, 64.16 ± 7.96 years, respectively. There were 45 patients aged between 30 and 60 years (29 females and 16 males), and 45 patients aged 60 years and older (16 females and 29 males). The duration of the disease was 1–24 months, with 18 (20%) participants reporting a 6-month duration.

Of the total number of subjects, 56 (62.2%) patients completed the questionnaires on their own, while the rest responded with the assistance of the investigator. The subjects mostly had secondary and

Table 1. Sociodemographic characteristics of the study group

Sociodemographic data	Women		Men	
	N	%	N	%
Education				
elementary	4	8.89	8	17.78
vocational	10	22.22	13	28.89
secondary	22	48.89	18	40.00
higher	9	20.00	6	13.33
Marital status				
single	4	8.89	2	4.44
married	28	62.22	39	86.67
widowed	9	20.00	4	8.89
divorced	4	8.89	0	0
Place of residence				
rural area	25	55.56	18	40.00
town/city up to 50 thousand	10	22.22	20	44.44
town/city up to 150 thousand	9	20.00	6	13.33
city over 150 thousand	1	2.22	1	2.22

vocational education, most of them were married (the percentage was higher among men), there were more widows than widowers among the subjects, most of them lived in rural areas and cities with less than 50,000 inhabitants, 91.1% lived with their families, the rest (11.1% of women and 6.7% of men) lived alone (Table 1).

The Stress Coping Inventory (Mini-COPE) and the mini-Mental Adjustment to Cancer (Mini-MAC) Scale were used in the study.

Stress Coping Inventory (Mini-COPE)

Mini-COPE is a shortened version of the questionnaire measuring stress coping strategies developed by Carver and adapted by Juczyński and Ogińska-Bulik [18]. The COPE questionnaire and its shortened version Mini-COPE refer to coping understood as both a style and a strategy [16]. Coping strategies as measured by this tool refer to both a permanent tendency in coping (dispositional coping) and ways used in a particular situation (situational coping). The tool includes 28 statements covering 14 coping strategies (2 statements for each strategy) and measures dispositional coping, i.e. assesses typical ways of responding and feeling in situations of severe stress. The method can also be used to measure situational coping, i.e., assessing coping behaviors related to a specific event or limited time period by modifying the instructions („What did

you do..." instead of „What do you do...“). Individual items are rated on a 4-point scale (from 0 — I almost never do this to 3 — I almost always do this). The tool includes the following subscales:

1. Active coping — taking action to improve the situation.
2. Planning — selecting and planning the actions that would need to be taken in a given situation.
3. Positive reframing — seeing the problem in a more positive light.
4. Acceptance — accepting the situation and trying to adapt to it.
5. Sense of humor — joking, treating the situation as fun.
6. Turning to religion — prayer and meditation for calming.
7. Use of emotional support — encouragement, understanding and support from others.
8. Use of instrumental support — seeking advice and help from others.
9. Self-distraction — engaging in other activities to avoid thinking about a difficult situation.
10. Denial — denying the existence of a situation.
11. Venting — revealing negative emotions.
12. Substance use — taking psychoactive drugs to relieve unpleasant emotions.
13. Behavioral disengagement — giving up efforts to improve the situation.
14. Self-blame — criticizing and blaming oneself for the situation.

The scale has satisfactory psychometric properties. The split-half reliability is high at 0.86; the Guttman index is 0.87. Stability measured after 6 weeks is satisfactory for most scales (the highest in the „Turning to religion“ strategy, at 0.94; the lowest in the „Self-distraction“ strategy, at 0.32). The scale is also valid: in exploratory factor analysis, 7 factors explain 66% of the variance.

Mini-Mental Adjustment to Cancer (mini-MAC) Scale

The mini-MAC Scale is one of the most widely used tools for measuring psychosocial characteristics among cancer patients and was adapted in 20 countries [19]. The mini-MAC Scale adapted by Juczyński and Ogińska-Bulik [18] is a shorter version of the Mental Adjustment to Cancer (MAC) Scale [20]. This tool uses a self-descriptive method, contains 29 statements, and measures 4 coping strategies on a 4-point

scale (strongly disagree — rather disagree — rather agree — strongly agree). The are four subscales:

1. Anxious preoccupation (anxiety caused by illness, perceived as an anxiety-producing threat that cannot be controlled, where any change is perceived as a signal of deterioration of health).
2. Fighting spirit (treating the illness as a personal challenge, taking action to fight the illness).
3. Helplessness-hopelessness (feeling powerless, lost, passively giving in to the disease).
4. Positive reframing (reorganizing the problem of the illness, allowing one to find hope and be satisfied with the years that have passed while being fully aware of its seriousness).

Psychometric properties of the scale are satisfactory: internal reliability of individual subscales: helplessness-hopelessness (0.92), fighting spirit (0.90), anxious preoccupation (0.89), positive reframing (0.87). Stability coefficient: helplessness-hopelessness (0.79), anxious preoccupation (0.70), with slightly lower but satisfactory reliability of the remaining strategies (0.64–0.58).

Approval to conduct the study was obtained from the Ethical Committee of the Catholic University of Lublin. The study was conducted in accordance with the Declaration of Helsinki.

The „Statistica“ statistical program was used to analyze the results and a parametric statistical test was used to compare the means obtained for the variables in the two groups and to calculate the significance of the differences between the means (Student’s t-test). Data analysis included results significant at the level $p < 0.10$.¹

Results

The mean values obtained by the patients for stress coping strategies as measured by Mini-COPE are shown in Table 2.

The most frequently used coping strategies were active coping, acceptance, emotional support, self-distraction, and turning to religion, while the least frequently reported were substance abuse and behavioral disengagement (Table 2). Coping strategies with significant gender differences included venting ($p = 0.05$), which was used more frequently by women. The coping strategy involving self-distraction differentiated the study groups at the level of trend ($p = 0.066$) and was more prevalent in men. There were no statistically significant differences between

¹ According to Jerzy Brzezinski’s position on exploratory research, „An overly rigorous p-level can cause us to ‚drown‘ an interesting hypothesis. An overly liberal level of p may, in turn, lead to the dissemination of a false result that will form the basis for, say, a therapeutic procedure that may prove harmful (e.g. a poorly tested drug that turns out to be toxic). So how about not rigidly adhering to this „hallowed“ level of p at 0.05? Maybe sometimes one has to set p at 0.001, and sometimes p at 0.10 is enough (e.g. in exploratory research)?“. Brzezinski, J. *Metodologia badań psychologicznych*, Wydawnictwo Naukowe PWN, Warszawa, 2012, p. 19.

Table 2. Stress coping strategies — MiniCOPE scores (M, SD) of the entire group and men and women; t-test for significance of differences

Stress coping strategies Mini-COPE	Entire group N = 90		Women N = 45		Men N = 45		Significance of differences t (88)	
	M	SD	M	SD	M	SD	t (88)	p
Active coping	2.13	0.74	2.07	0.80	2.19	0.68	0.78	< 0.436
Planning	2.03	0.71	2.01	0.77	2.06	0.66	0.29	< 0.769
Positive reframing	1.94	0.69	1.93	0.72	1.20	0.67	0.15	< 0.880
Acceptance	2.36	0.64	2.39	0.65	2.33	0.65	-0.41	< 0.685
Humor	1.19	0.83	1.18	0.94	1.21	0.73	0.19	< 0.851
Turning to religion	2.27	0.87	2.39	0.82	2.14	0.91	-0.46	< 0.643
Use of emotional support	2.34	0.68	2.38	0.60	2.31	0.76	-1.34	< 0.185
Use of informational support	2.11	0.71	2.21	0.71	2.01	0.71	-1.33	< 0.186
Self- distraction	2.20	0.73	2.11	0.78	2.29	0.68	-1.86	< 0.066
Denial	1.19	0.86	1.36	0.90	1.02	0.79	1.16	< 0.250
Venting	1.49	0.73	1.64	0.79	1.34	0.64	-1.99	< 0.050
Substance use	0.32	0.55	0.26	0.57	0.38	0.53	1.05	< 0.297
Behavioral disengagement	0.73	0.74	0.72	0.74	0.74	0.74	0.14	< 0.888
Self-blame	1.18	0.86	1.04	0.83	1.31	0.87	1.49	< 0.140

Table 3. Cancer-related stress coping strategies — Mini-MAC scores (M, SD) of the entire group and men and women; t-test for significance of differences

Cancer coping strategies Mini-MAC	Entire group N = 90		Women N = 45		Men N = 45		Significance of differences	
	M	SD	M	SD	M	SD	t (88)	p
Anxious preoccupation	15.27	4.964	15.98	5.16	14.56	4.71	-1.37	< 0.176
Fighting spirit	24.22	3.31	24.47	3.15	23.98	3.47	-0.70	< 0.486
Helplessness-hopelessness	11.77	3.73	11.93	3.38	11.60	4.08	-0.42	< 0.674
Positive reframing	23.20	2.54	23.27	2.55	23.13	2.55	-0.25	< 0.805

gender groups in their use of other coping strategies (Table 2).

Descriptive statistics and statistical analysis of the differences between women and men in coping with cancer as measured by the Mini-MAC questionnaire are presented in Table 3. The highest scores were obtained in the use of adaptive coping strategies: positive reframing and fighting spirit, while the lowest scores were obtained in maladaptive coping strategies: helplessness-hopelessness and anxious preoccupation. There were no statistically significant differences between gender groups in their use of cancer coping strategies (Table 3).

Discussion

In the present study, the stress coping strategies most frequently used by patients were active

coping, acceptance, use of emotional support, self-distraction and turning to religion (on the mini-COPE Scale) and positive reframing and fighting spirit (on the Mini-MAC Scale). Most of the above-mentioned strategies can be described as adaptive strategies. There were some differences between genders in the scope of the employed strategies. Venting was more frequently used by women with a diagnosis of breast cancer, while self-distraction was more frequently used by men with prostate cancer.

Compared to the results obtained in adult patients for the adaptation of the Mini-COPE tool, patients in the current study scored higher on the use of most strategies, i.e. active coping, positive reframing, acceptance, humor, turning to religion, use of emotional support, use of instrumental support, self-distraction, denial, venting, and behavioral disengagement [18].

Similar results were obtained for planning, substance use and self-blame.

Compared to Juczyński and Ogińska-Bulik's study of post-mastectomy women, patients in the present study scored higher in the use of most of the strategies measured [18]. The substance use strategy was an exception as women in this study used it to a lesser extent compared to mastectomy patients. The use of planning, denial, venting, and behavioral disengagement strategies was similar in both studies.

The results obtained indicate that the women in the study group demonstrated lower severity of the anxious preoccupation strategy, compared to patients diagnosed with breast cancer in Juczynski's study (Mean and SD at 20.10 ± 4.68), as well as in the helplessness-hopelessness strategy, compared to the results obtained by Juczynski in his study (15.73 ± 5.23) [21]. The women in the study scored lower on maladaptive cancer coping strategies than a comparable group of breast cancer patients [21]. Patients in the current study used the fighting spirit and positive reframing strategies to a greater extent than patients in the study by Juczynski (fighting spirit: 19.34 ± 3.93 ; positive reframing: 20.91 ± 3.39). A comparison of women's results in this study with the patients in Juczynski's study in terms of fighting spirit and positive reframing indicates that the women in this study used adaptive coping to a greater extent than the women with breast cancer in Juczynski's study [21].

Men in this study used anxiety preoccupation (14.56 ± 4.71) and helplessness-hopelessness (11.60 ± 4.08) at a lower rate compared to patients with prostate cancer in Juczynski's study (anxiety preoccupation: 22.10 ± 6.28 ; helplessness-hopelessness: 14.50 ± 3.56) [21]. The above results indicate that studied men showed less frequent use of malignant disease maladaptive coping strategies compared to the prostate cancer patients in Juczynski's study [21]. The frequency of using the fighting spirit strategy in the study group (23.98 ± 3.47) was found to be comparable to that of prostate cancer patients in Juczynski's study (23.90 ± 4.58). The use of positive reframing strategies in the male group (23.13 ± 2.55) was slightly greater than in a comparable group of patients in Juczynski's study (22.30 ± 5.23). The above results imply that the male subjects used the adaptive coping strategy of positive reframing more than the other patients in Juczynski's study [21] but did not differ from the comparable group in the other adaptive strategy of fighting spirit.

Adapting to a difficult situation of illness is facilitated by the use of adaptive coping strategies. The above study suggests that patients use both more adaptive strategies, such as positive reframing, and

less adaptive strategies, such as self-blame. The study indicates the presence of problem-focused (active coping), emotion-focused (use of emotional support), and avoidant (self-distraction) strategies.

In terms of gender differences, the study indicates that women are more likely to use venting, i.e., revealing negative emotions, than men. The above difference may indicate a greater willingness among women to show negative emotions due to illness and to allow themselves to show weakness. Self-distraction appeared to be a strategy more commonly used among men compared to women. Both the disease diagnosis and treatment present a difficult situation and require mental adaptation. Patient resources and the coping strategies used to manage stress in cancer facilitate adaptation to the disease and may promote a higher quality of life.

In a study of coping strategies for cancer-related stress, similar results to those found in this study were observed for the mean values of each strategy of the Mini-MAC scale for both breast and prostate cancer patients [22]. In anxiety preoccupation, female breast cancer patients scored slightly higher (15.91 ± 4.97) compared to males with prostate cancer (14.01 ± 4.85). In fighting spirit, women scored slightly higher than men (for women: 23.43 ± 3.21 ; for men: 22.46 ± 3.44). Scores for helplessness and hopelessness were not significantly different between women and men (women: 11.89 ± 4.10 ; men: 11.39 ± 4.23), and for positive reframing, the scores were slightly lower than in this study (women: 22.05 ± 3.09 ; men: 22.04 ± 2.99).

In the study of coping strategies in women with breast cancer, higher scores were obtained for active coping (2.44 ± 1.92), positive reframing (2.77 ± 1.96), acceptance (4.52 ± 1.79), and turning to religion (3.72 ± 2.16) than in this study, while lower scores were obtained for planning (1.78 ± 1.84), seeking instrumental support ($M = 1.53$; $SD = 1.68$), self-distraction (1.97 ± 1.85), denial (0.30 ± 0.81), venting (1.04 ± 1.31), behavioral disengagement (0.26 ± 0.77), and self-blame (0.71 ± 1.21) than in this study [23]. Similar results were obtained for humor (1.09 ± 1.66), use of emotional support (2.41 ± 1.88), and substance use (0.24 ± 0.80).

In a study of 209 men diagnosed with prostate cancer, there were correlations between 14 coping strategies measured by the Mini-COPE and benefit finding [24]. The most important strategies included acceptance, positive reframing, and turning to religion, which explained 35% of the variation in the benefit finding variable.

The differences in the strategies used by female and male cancer patients may have practical relevance

in selecting specific methods of psychological help to cope with cancer-related stress.

Limitations of the study include the sample selection, as more reliable results could be yielded by recruiting patients treated with the same regimen and at the identical stage of radiotherapy; moreover, the subjects differed in age — male patients were older than females. The measurement of strategies used may have been limited by the influence of the social approval variable. In the case of strategies commonly regarded as maladaptive, such as substance use, subjects may have underestimated the frequency of their use.

Conclusions

Some of the most common strategies used by breast and prostate cancer patients include active coping, acceptance, use of emotional support, self-distraction, turning to religion, positive reframing, and fighting spirit. Differences were found between women who were more prone to venting and men who were more likely to engage in self-distraction. The observed differences in applied coping strategies for cancer stress in women diagnosed with breast cancer and men diagnosed with prostate cancer may serve to develop and implement psychological interventions to support patients in coping with cancer. The issue of coping with cancer-related stress requires the study of patients with different types of cancer, with the study of the relationship of dealing with stress to quality of life in cancer patients being particularly important.

Declaration of conflict of interests

The authors declare that there is no conflict of interest.

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