

Assessment of Pain, Acceptance of Illness, Adaptation to Life, and Strategies of Coping With the Disease, in Patients With Bladder Cancer

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Abstract. *Background/Aim: Bladder cancer is one of the most common cancers and causes of mortality in Poland, significantly reducing the quality of life. The objective of the study was to evaluate the strategy of coping with the disease in patients suffering from bladder cancer. Patients and Methods: Four psychometric tests were used: the beliefs about pain control questionnaire (BPCQ), the pain coping strategies questionnaire (CSQ), acceptance of illness scale (AIS), and mental adjustment to cancer (Mini-Mac) test. Results: Patients suffering from bladder cancer assign the greatest role in controlling pain to the influence of physicians. The most frequently chosen strategy for coping with the disease was declaring coping. The average level of acceptance of the disease among patients was mean=27.25. The most often indicated manner of coping was fighting spirit. Conclusion: Patients with bladder cancer are characterized by a constructive attitude towards the disease.*

Bladder cancer in Poland is the second most common malignant cancer of the genitourinary tract in men, accounting for 7% of cancer cases in men (compared to 2% in women). The overall standardized rate of bladder cancer in Poland is 9.1/100,000 people, indicating an upward trend in both women and men (1). Bladder cancer is most common in the Mediterranean, as well as in Egypt. In Europe, the incidence and mortality rates of bladder cancer show a

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steady decline in the male population, while an increase in morbidity and mortality in the female population. Incidence rates for bladder cancer in the European Union are higher than in Poland.

The risk of bladder cancer increases with age (most often after 50 years of age), and in men it is about 3-4 times higher than in women (2). 5-year survival among patients with bladder cancer in Poland is 62.2%. The standardized death rate for bladder cancer in Poland is 4.0/100,000 people and it is higher than in most countries of the European Union, in particular among men (by about 50%) (1). The incidence of bladder cancer is associated with a decrease in the quality of life of patients, which is indicated by many studies conducted among this group of patients (3, 4).

The objective of the study was to evaluate the strategy of coping with pain and its control, acceptance of the disease and adaptation to life with cancer in patients suffering from bladder cancer. The analysis also included the impact of socio-economic factors (education, professional status, income, place of residence) and the method of treatment (transurethral resections +/- intravesical chemotherapy) for the above-mentioned problems.

Patients and Methods

The study was conducted among 100 patients diagnosed with bladder cancer at the Center of Oncology - Maria Skłodowska-Curie Institute in Warsaw in 2017-2018. The PAPI (Paper and Pencil Interview) technique was used. The questionnaire interview included metric questions (socio-economic variables) and four psychometric tests: 1. The beliefs about pain control questionnaire (BPCQ), designed to study people suffering from pain (5); 2. The pain coping strategies questionnaire (CSQ), used to study people who complain of pain (6); 3. Approval illness scale (AIS), measuring the level of adjustment to the disease (7); 4. Mental adjustment to cancer (Mini-MAC), measuring the level of mental adjustment to cancer (8).

The obtained results were subjected to statistical analysis using Student's *t*-test for independent samples, one-way analysis of variance and Pearson's *r* correlation (in the case of age). All results are presented using the mean (M) and standard deviation (SD). The level of statistical significance was set at $p < 0.05$.

Results

Pain control. The Beliefs about Pain Control Questionnaire (BPCQ) is used to measure the strength of individual beliefs about pain control. The BPCQ distinguishes three possible areas of pain control: personal (internal factors), influence of physicians (strength of others) and random events. Patients suffering from bladder cancer attribute the greatest role in the control of pain to the influence of physicians (M=16.18, SD=5.08), and the smallest to random events (M=13.67, SD=5.10) (Table I).

Among the respondents in whom the bladder was the primary lesion area, the differentiation of BPCQ results by socioeconomic characteristics was rare. The influence of internal factors was differentiated by age (Pearson's $r=0.212$) and education ($p=0.028$), while the influence of random events was differentiated by age (Pearson's $r=0.366$) and intravesical chemotherapy during the last year ($p=0.006$).

The mean value of the internal sense of pain control was higher in older patients as well as people with primary/vocational education (M=18.09, SD=5.66) in comparison with patients with secondary education (M=14.79, SD=4.70) and higher education (M=15.02, SD=4.65).

The location of pain control in random events was higher in older patients and those who were not subjected to intravesical chemotherapy (M=14.84, SD=4.96) compared to patients after intravesical chemotherapy (M=12.05, SD=4.89).

Gender, income per household member, place of residence and professional status do not affect the location of pain control in patients with bladder cancer (in all cases, $p > 0.05$). The Ethics Committee of the Medical University of Warsaw approved this study. Due to the scope of the data, we obtained verbal informed approval. We confirm that all patients gave consent for the study.

Strategies for coping with pain. The CSQ is used to assess strategies used by patients to cope with pain. The aim of the questionnaire is also to verify the effectiveness of patients' strategies for coping with pain. These include six cognitive and one behavioral strategy, which in turn are part of three factors: cognitive coping, distraction and substitution, and catastrophizing and hoping. Respondents suffering from bladder cancer assigned the highest value to declaring coping (M=20.03, SD=8.54) and increased behavioral activity (M=19.97 SD=8.75), and the lowest to catastrophizing (M=10.82, SD=7.03) (Table II).

The strategy that was the most differentiated by the socio-economic variables studied was increased behavioral activity.

Table I. *BPCQ results for patients with bladder cancer.*

Area of BPCQ	Mean (M)	Standard deviation (SD)
Internal factors	15.65	5.05
Influence of physicians	16.18	5.08
Random events	13.67	5.10

Table II. *CSQ results for patients with bladder cancer.*

Area of CSQ	Mean (M)	Standard deviation (SD)
Distraction	18.71	7.77
Catastrophizing	10.82	7.03
Reevaluation of pain	12.60	7.48
Ignoring pain	16.00	7.91
Praying/hoping	18.90	8.96
Declaring hoping	20.03	8.54
Increased behavioral activity	19.97	8.75

Table III. *Mini-Mac results for patients with bladder cancer.*

Area of Mini-Mac	Mean (M)	Standard deviation (SD)
Anxiety	15.43	4.29
Fighting spirit	21.47	3.53
Helplessness-hopelessness	13.22	3.97
Positive reevaluation	20.87	2.93

The mean value of this area depended on age (Pearson's $r=0.269$), place of residence ($p=0.012$) and net income per person in the patient's family ($p=0.025$). A higher value of increased behavioral activity was evident in older patients living in larger cities (for cities over 100,000 of residents M=22.12, SD=7.55, and for cities up to 100,000 M=17.73; SD=9.41) and in people with higher incomes (for income above PLN 1,500 net per household member M=21.34, SD=8.25, for people with lower income M=17.18, SD=9.19).

The second area differentiated by the variables studied was catastrophizing. People subjected to intravesical chemotherapy over the last year were characterized by lower degree of catastrophizing (M=8.90, SD=6.82) than those who did not receive chemotherapy (M=12.21, SD=6.91) ($p=0.020$).

Gender, education and professional status had no statistically significant impact on patients' strategies for coping with pain ($p > 0.05$).

Acceptance of the disease. AIS measures the level of acceptance of the disease by patients. The AIS questionnaire consists of eight statements, and the possible results for each

respondent range from 8 to 40. The lower the score, the greater the severity of negative reactions and emotions associated with the disease, and thus its lower acceptance. The higher the score, the better the adjustment and the less sense of psychological discomfort. The average level of acceptance of the disease among people suffering from bladder cancer in the AIS scale was $M=27.25$ ($SD=7.52$).

In the group of women suffering from bladder cancer the mean value of acceptance of the disease was $M=26.06$ ($SD=7.96$), and in the group of men $M=27.49$ ($SD=7.45$) ($p>0.05$). Acceptance of the disease did not significantly correlate with patients' age ($p>0.05$). The mean value of acceptance of the disease in the group of people with primary or vocational education was $M=25.91$ ($SD=6.09$), in the group of people with secondary education $M=26.53$ ($SD=8.18$), and in the group of people with higher education $M=28.53$ ($SD=7.62$) ($p>0.05$).

The place of residence also did not differentiate the patients' results in the AIS test ($p>0.05$). The mean value of acceptance of the disease in the group of people living in cities with a population of up to 100,000 was $M=27.27$ ($SD=7.66$) that is close to the mean value obtained in the group of people who lived in cities with a population of over 100,000, *i.e.* $M=27.24$ ($SD=7.45$).

The mean value of acceptance of the disease in the group of people with net income of up to PLN 1,500 net per household member was $M=24.67$ ($SD=7.90$) that is lower than the mean value obtained in the group of people who achieved income above PLN 1,500, *i.e.* $M=28.52$ ($SD=7.04$) ($p<0.05$).

Similarly, the mean value of acceptance of the disease in the working group was similar to the mean value of acceptance of the disease in the group of pensioners ($p>0.05$); $M=28.82$ ($SD=6.25$) and $M=27.29$ ($SD=8.02$), respectively. The fact of chemotherapy treatment in the last year also did not affect the results obtained by patients ($p>0.05$). The mean value of acceptance of the disease in the group of people who underwent intravesical chemotherapy was $M=27.79$ ($SD=7.26$), and in the group of people who were not undergoing chemotherapy $M=26.86$ ($SD=7.73$).

Mental adjustment to the disease. Mini-MAC measures four ways of coping: anxiety, fighting spirit, helplessness-hopelessness and positive reevaluation, while anxiety and hopelessness-hopelessness constitute a part of a passive (destructive) attitude of coping with the disease, the other two areas refer to an active (constructive) attitude. Patients suffering from bladder cancer had the highest value of the Mini-MAC test in the area of fighting spirit ($M=21.47$, $SD=3.53$) and positive reevaluation ($M=20.87$, $SD=2.93$), and the lowest in area of helplessness-hopelessness ($M=13.22$, $SD=3.97$) (Table III).

Mental adjustment to cancer in patients with bladder cancer was differentiated by the variables studied only in the areas of fighting spirit and positive reevaluation. The mean value of fighting spirit was statistically significantly higher in the group of women ($M=23.06$ $SD=3.38$) than men ($M=21.14$, $SD=3.49$) ($p=0.041$). The mean value of positive reevaluation correlated positively with patients' age (Pearson's $r=0.199$). Older patients attributed a higher value to this area.

Education, place of residence, income per household member, professional status and the fact of intravesical treatment using chemotherapy over the last year did not affect the patients' strategy of mental adjustment to the disease (for all cases $p>0.05$).

Discussion

Despite high morbidity and mortality related to bladder cancer, literature rarely contains information on the quality of life of this group of patients, experience related to treatment or individual patients' approach to the disease or pain associated with it. Early periods of the disease are studied particularly rarely, as in the case of the bladder cancer, due to relatively unspecific and late symptoms, there are significant delays in the diagnosis (9).

Bladder cancer significantly affects the mental function of patients, including increased stress, depression, anxiety, reduced self-esteem, lack of acceptance of one's body after the disease and deterioration of sexual life. Many patients try to accept the disease and seek emotional and instrumental support, which reduces anxiety and pain (10, 11).

The quality of life in patients with bladder cancer may be affected by the high mortality rate of patients and awareness of this fact among patients, which is associated with increased concern for their health in the future (12). In turn, improvement in the quality of life in patients with bladder cancer is significantly influenced by physical activity, which has been emphasized by Gopalakrishna *et al.* (13).

Patients with bladder cancer have reduced quality of life compared to the general population. Studies conducted by Singer *et al.* have indicated that despite similar problems in the functioning of this group of patients, older male patients (>70) are more often affected by sleep problems and emotional problems compared to other groups of patients with bladder cancer (14). After the diagnosis, patients with bladder cancer experience significant reduction in the quality of life in the physical, emotional and social areas (15).

People suffering from cancer feel discomfort in both the physical (pain) and mental sphere. In the long-term, the disease also affects their relationships with loved ones, professional life, finances, as well as daily activities (16). Diagnosis and treatment of bladder cancer particularly affects patients' emotional life, sexual life, functioning of the urinary tract and functioning of the digestive system (17).

The quality of life experienced by patients, depending on health, is largely influenced by the ways of coping with pain and the disease, the way of mental adjustment to the disease or the level of its acceptance. Active strategies of coping with the disease and acceptance of the disease reduce the severity of negative emotions associated with the disease and the recognition of the resulting restrictions (5, 18-20).

Our study, aimed at assessing the strategy of coping with pain, acceptance of the disease and mental adjustment to the disease among patients suffering from bladder cancer, indicates that the physicians influence the ability of patients to control pain ($M=16.18$, $SD=5.08$). The dominance of physicians' influence in pain control is also visible in patients with lung cancer ($M=16.79$) (21), prostate cancer ($M=16.31$) (22) and breast cancer ($M=17.09$), where this area is differentiated by professional status (retired patients attributed greater importance to physicians) (23). The influence of education on internal factors was observed in patients with prostate cancer in the study conducted by Czerw *et al.* (22). In our study, education and the age of patients influenced the internal dimension of pain control - the mean for this area was higher in older people and people with primary/vocational education.

Patients in our study coped with pain mainly by declaring coping ($M=20.03$, $SD=8.54$). This area is the dominant way of coping with pain also in patients with other types of cancer: colorectal cancer ($M=21.86$) (24), lung cancer ($M=19.64$) (21), or breast cancer ($M=21.81$) (23).

The mean value of acceptance of the disease in patients with bladder cancer was $M=27.25$ ($SD=7.52$). Acceptance of the disease was differentiated by income per household member. Higher income was associated with higher assessment of acceptance of the disease in patients. Similar results of the AIS test were observed in the case of patients with colorectal cancer ($M=27.74$), slightly higher in the case of patients with breast cancer ($M=28.46$), and even higher in patients with prostate cancer ($M=30.39$). Among patients with cancer, patients with lung cancer ($M=23.17$) have shown lower acceptance of the disease. The impact of income on the level of acceptance of the disease has also been observed in patients with breast and prostate cancer (25). In the case of prostate cancer, the influence of education has also been observed; patients with higher education accept their disease better (22).

In terms of mental adjustment to the disease, patients with bladder cancer in our study most often chose the fighting spirit strategy ($M=21.47$, $SD=3.53$). Fighting spirit is the most frequently chosen strategy also for other types of cancer: colorectal cancer ($M=23.42$) (24), breast cancer ($M=23.43$) (23), lung cancer ($M=21.91$) (21) and prostate cancer ($M=22.46$) (22).

For the treatment of bladder cancer, it is important to choose the right therapy. In our study, the influence of

intravesical chemotherapy on the manner of pain control, the degree of acceptance of the disease, strategies for coping with pain or the method of adjustment to cancer were evaluated. Regarding the location of pain control, patients subjected to intravesical chemotherapy were less likely to report pain control through random events. Patients subjected to intravesical chemotherapy were characterized by lower degree of catastrophizing, as well as a higher mean value of acceptance of the disease than in the case of those who did not receive intravesical chemotherapy. However, treatment using intravesical chemotherapy over the last year did not affect the patients' strategy of mental adjustment to the disease.

Conclusion

In conclusion, i) the main area of the location of pain control for patients suffering from bladder cancer is the influence of physicians. ii) the most often selected strategies for coping with the disease among patients include declaring coping and increased behavioral activity, iii) the level of acceptance of the disease in patients with bladder cancer is associated with income - the higher the income the higher the acceptance of the disease, iv) In the area of mental adjustment to the disease, patients with bladder cancer are most often characterized by the strategy of fighting spirit, v) Age and income are the socio-economic variables that differentiate most the results of all tests.

Conflicts of Interest

The Authors declare that they have no conflicts of interests related to this study.

Authors' Contributions

Conceptualization UR, AD and AC; Methodology UR, AD and AC; Formal Analysis AC; Investigation UR; Data Curation UR; Writing – Original Draft Preparation R.; Writing – Review & Editing AC, AD and UR; Supervision AD; Project Administration UR.

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