The influence of support and medical data on the level of illness acceptance, the way of coping with a stressful situation, and mental adjustment to the disease among cancer patients

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Abstract. – **OBJECTIVE:** The aim of this study was to analyze the behavior of cancer patients.

PATIENTS AND METHODS: This survey-based study involved 145 oncological patients and was conducted from July to November 2018. It was performed using an author's questionnaire and three standardized tools: the mini-Mental Adjustment to Cancer Scale, the Acceptance of Illness Scale, and the Coping Inventory for Stressful Situations.

RESULTS: The acceptance of illness was at a medium level. Patients who had been ill for longer time periods coped with stress better ($p < 0.071$) and showed better mental adjustment ($p < 0.05$ for Positive Redefinition, and $p < 0.08$ for Fighting Spirit). Patients with benign tumors focused on emotions ($p < 0.001$) and avoidance ($p < 0.005$) and were preoccupied with anxiety ($p < 0.05$). Longer treatment time was associated with a higher ability to cope with stress ($p < 0.05$). Patients receiving support were characterized by Anxious Preoccupation attitude ($p < 0.1$), and those who had not got it by Fighting Spirit ($p < 01$).

CONCLUSIONS: Cancer patients have problems coping with new circumstances. They need support and help to understand and accept their situation.

Key Words:
 Acceptance of illness, Mental adjustment, Cancer, Stress, Support.

Introduction

Cancer is one of the dominant diseases in every population. One in five men and one in six women worldwide will develop cancer in their lifetime. According to the World Health Organization (WHO), in 2018 the number of new cases of can-

cer increased to 18.1 million, and the number of deaths from cancer was estimated at 9.6 million. In Poland, cancer is the second cause of death[1], but the Polish Cancer Society reports that by 2025 this disease will probably become the leading cause of death in our country. Oncological diseases constitute a heterogeneous group in terms of location, pathomorphology, methods, duration of treatment, and prognosis, but they are unanimously perceived as some of the most stressful conditions in the world. Every person who suffers from cancer is exposed to changes both in private and professional life. Unexpectedly, the patient's cognitive, emotional, and behavioral functions are disturbed. Struggling with cancer is associated with a huge mental burden, which is permanent and continues through all stages of the disease development -from diagnosis, through treatment to the period of remission and control of the possible recurrence. In cancer, psychosomatic and somatopsychic interrelationships often blur, and various aspects of a person's life are affected. Therefore, in modern medicine the systemic holistic approach seems the most appropriate[2].

The moment when people learn about the threat to their lives is a serious stress factor determining their further functioning. Oncological disease is a stressful situation that sets two adaptive goals: self-regulation of emotions and possible optimization of the biological processes. They both are needed to reduce the level of stress and regain control of life. During this stress-coping process, some defense mechanisms are triggered spontaneously in order to avoid unpleasant emotions and protect self-esteem by distorting the perception of reality. So far, three main

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stress-coping styles have been identified, namely: Task-Oriented Coping (TOC), Emotion-Oriented Coping (EOC), and Avoidance-Oriented Coping (AOC)[3]. Under the influence of various internal and external factors, a person should take steps to counteract the disease and its effects, as well as find the source of motivation to fight the disease. Unfortunately, stress is sometimes so strong that it becomes a destructive factor, complicating the fight against the disease.

A key to effective therapy is also acceptance of the disease, i.e., consent to changes that will occur in life. In terminal diseases, refusal to accept limitations leads to exhaustion and helplessness[4]. Losing control over their own lives, sick people become more dependent on others. They often cease their professional activity, which has unfavorable socio-economic consequences. It is easier to accept the disease when the patient sees the desired effects of the treatment[1]. However, there are medical situations where such effects are not visible, or the health condition continues to deteriorate. These circumstances –independent of both the patient and the medical staff– are accompanied by many negative emotions. This is associated with an increased need for help and support from other people, and with a much greater effort of the patient. Support in disease is one of the most important resources to combat stress.

Cancer is perceived in society as a hopeless condition. Many people feel ashamed, and so they provide information about it only to their loved ones, which often prevents them from getting various forms of help. Social support has been divided into structural and functional support. Structural support is defined as a social network of friends, family members, romantic partners, as well as all institutions, coworkers, and specialists prepared to provide help. Functional support is divided into five spheres: emotional, informative, instrumental, factual, and spiritual[5]. A variety of support can give a sense of security, which may substantially alleviate some symptoms of the disease[6]. While providing medical care, it is necessary to help patients and their relatives find the meaning of life, which is sometimes distorted or obscured by the disease[7]. Support provided with regard to the medical and personal situation of cancer patients should enable them to accept the disease and cope with it more effectively. It should also reduce anxiety and stress, and thus positively influence the holistic process of treatment and convalescence.

The aim of this study was to analyze the behavior of cancer patients, and their ability to cope with a difficult situation.

Patients and Methods

The study involved 145 oncological patients receiving chemotherapy treatment in the three main oncological centers in Szczecin: the West Pomeranian Cancer Center in Szczecin, the Clinical Oncology Ward of the Independent Public Clinical Hospital No. 2 in Szczecin, and the Clinic of Surgical Gynecology and Gynecologic Oncology of Adults and Girls of the Independent Public Clinical Hospital No. 2 in Szczecin. All patients willing to participate in the study were included. These were both hospitalized and outpatient patients who came to the hospital for a day stay. The questionnaires were completed in the presence and with help of a trained researcher. The response rate was 100%.

The research material was collected from July to November 2018. The research project was approved by the Bioethics Committee of the Pomeranian Medical University, Szczecin (KB-0012/235/0618). The participation in the study was voluntary and anonymous.

This survey-based study was performed using the author's questionnaire consisting of eight questions: five questions about the disease and treatment methods, and three questions concerning the support received in the disease. Three standardized research instruments were also applied.

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

This is a self-reported 29-item psychometric instrument derived from the MAC and designed to measure styles of coping with cancer. The scale is used to assess four cancer-specific coping strategies: Anxious Preoccupation, Fighting Spirit, Helplessness/Hopelessness, and Positive Redefinition. To facilitate the interpretation and clinical application of the scale, these strategies were grouped to form two main subscales: the active or constructive coping style (Fighting Spirit and Positive Redefinition), and the passive or destructive coping style (Anxious Preoccupation and Helplessness/Hopelessness). Each statement included in the mini-MAC questionnaire is rated on a four-point scale ranging from '1' denoting 'definitely does not apply to me' to '4' denoting 'definitely applies to me'. The score for each coping strategy is calculated separately by adding scores from specific items, and ranges from 7 to 28 points. The higher the score, the greater is the intensity of behaviors associated with a given coping strategy. This tool can be used to assess

the patient's response to a diagnosis of cancer and to evaluate subsequent changes that occur during treatment.

The Acceptance of Illness Scale (AIS)

The Acceptance of Illness Scale (AIS) was developed to measure adjustment to chronic illness. The scale contains eight questions describing the negative consequences of poor health. In each statement, the respondent rates his or her current state on a 5-point Likert scale: from 1– 'I strongly agree' (reflecting bad adaptation to the disease and severe psychological discomfort) to 5 - 'I strongly disagree' (meaning acceptance of the disease). The overall score may range from 8 to 40 points. The higher the score, the greater the acceptance of one's condition, and the less negative the disease-related emotions. The scale is applicable to any illness.

The Coping Inventory for Stressful Situations (CISS)

The Coping Inventory for Stressful Situations (CISS) contains 48 statements concerning various behavior patterns exhibited by people in difficult and stressful situations. The respondent rates the frequency of a particular behavior on a five-point scale. The results are classified as: Task-Oriented Coping (TOC), Emotion-Oriented Coping (EOC), and Avoidance-Oriented Coping (AOC) that may manifest itself as engaging in alternative activities, such as sleep, watching TV, etc. (Distraction) or seeking social contact (Social Diversion).

Statistical Analysis

Analysis of the empirical material was carried out using the Microsoft Excel 2010 spreadsheet, PASW Statistics version 18. The variables analyzed were described using measures of central tendency, position, dispersion and quartile values: the average value with standard deviation (X ± SD), median (Me), the most frequent value (D), the first and the third quartiles (Q_1 and Q_3), as well as minimum and maximum values (min-max). Statistical inference depended on the normality of the variable distribution verified with the Shapiro-Wilk test. The following tests were used:

- Student's *t*-test –used in analysis of ratio independent variables
- the Mann-Whitney U test –a nonparametric two-sample test.

Correlation measures were applied. Quantitative variables with normal distribution were assessed by Spearman's rank correlation coefficient

(rho). The estimated values were in the range of < -1; 1 >. In absolute terms, the results were interpreted as follows:

- | < 0.2 | – no correlation or very weak correlation;
- | 0.2 – 0.4 | – weak correlation;
- | 0.4 – 0.6 | – moderate correlation;
- | 0.6 – 0.8 | – strong correlation;
- | 0.8 – 1.0 | – very strong (full) correlation.

In the process of statistical inference, $p \leq 0.05$ was assumed as statistically significant.

Characteristics of the Study Sample

The study involved 145 patients with tumors. The majority of them had malignant tumors (129; 89%). Less than half of the respondents were ill for more than one year (69; 48%). The remaining patients were people struggling with the disease for one-two years (39; 27%), three-four years (24; 16%), and over five years (13; 9%). Most respondents were treated for less than one year (74; 51%) (Table I).

The most common types of tumors were those located in the digestive system (56; 30%), the genitourinary system (42; 23%), other systems (32; 17%), and the respiratory system (14; 8%) (Figure 1).

The most common forms of treatment were chemotherapy (133; 72%) and surgery (81; 44%). Systemic treatment was applied in ten (5%) patients (Figure 2).

The vast majority of respondents (112; 78%) declared that they had received support in the disease (Figure 3).

The types of support that were most often provided were family (115; 62%) and social (47; 25%) support. Slightly fewer participants (40; 22%) indicated non-professional support. The least numerous respondents (32; 17%) were those who received professional support (Figure 4).

The support received was very important and helpful for 101 subjects (54.59%). The patients sought support when they were unable to cope with difficulties on their own (37; 20%). The same number of respondents regarded support as unnecessary (8; 4.32%) and were ashamed to talk about the disease with others (8; 4.32%) (Figure 5).

Results

The Ability to Cope with Difficult Situations and Acceptance of the Disease

Based on the AIS results, the acceptance of the disease was at a medium level (24.35 ± 8.10). The score distribution was normal *(p > 0.05).*
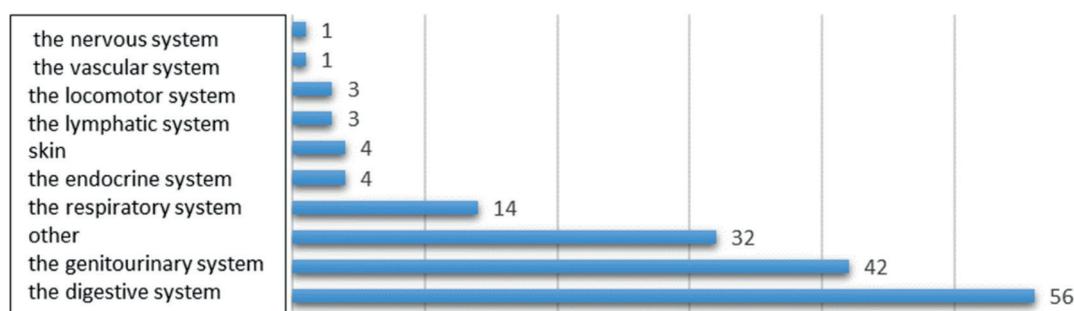
Figure 1. The tumor location.

Table I. The disease data.

Variable		n	%
Type of tumor	Malignant	129	89%
	Benign	16	11%
	Total	145	100%
Duration of the disease	< 1 year	69	48%
	1-2 years	39	27%
	3-4 years	24	16%
	> 5 years	13	9%
	Total	145	100%
Duration of treatment	< 1 year	74	51
	1-2 years	35	24
	3-4 years	23	16
	> 5 years	13	9
	Total	145	100%

n-number of participants, %-per cent of participants

The styles of coping with stressful situations were assessed using the CISS, and classified as:
- Task-Oriented Coping (TOC);
- Emotion-Oriented Coping (EOC);
- Avoidance-Oriented Coping (AOC).

The scores for each of these styles were within the point limit of 16-80. Only the result for Task-Oriented Coping exceeded the median score. The patients scored highest for Task-Oriented Coping (53.27 ± 11.71), and lowest for Emotion-Oriented Coping (39.60 ± 12.41). The average score for Avoidance-Oriented Coping was 45.04 ± 9.68. Two types of Avoidance-Oriented Coping were analyzed: Distraction (engaging in alternative activities) and Social Diversion (seeking social contacts). The scores for Distraction fell within the point limit of 8-40 (the average result was 19.38 ± 5.24, which was below the median score), and the scores for Social Diversion were within the range of 5-25 points (the average result was 16.98 ± 4.10 and slightly exceeded the median score). Normal distribution was only observed for Emotion-Oriented Coping ($p > 0.05$).

The patients' mental adjustment to tumor disease was measured using the Mini-MAC scale. The following cancer-specific coping strategies were assessed:
- MM1–Anxious Preoccupation;
- MM2–Fighting Spirit;
- MM3–Helplessness/Hopelessness;
- MM4–Positive Redefinition.

The patients scored highest for Fighting Spirit (23.06 ± 3.28), and Positive Redefinition (21.81 ± 3.65). The lowest scores were obtained for Anxious Preoccupation (15.89 ± 4.75) and Helplessness/Hopelessness (12.31 ± 3.95). Normal distribution was noted for Anxious Preoccupation and Helplessness/Hopelessness ($p > 0.05$) (Table II).

The acceptance of the disease weakly correlated with Task-Oriented Coping and Positive Redefinition *(p < 0.1)*. Moderate correlations were observed between the CISS and the Mini-MAC scores (Table III).

The influence of medical factors on the acceptance of the disease, the ways of coping with stressful situations, and mental adjustment to neoplastic disease.

Table II. The variable analysis.

	AIS	TOC	EOC	AOC	Distraction	Social Diversion	MM1	MM2	MM3	MM4
M±SD	24.35 ± 8.10	53.27 ± 11.71	39.60 ± 12.41	45.04 ± 9.68	19.38 ± 5.24	16.95 ± 4.10	15.89 ± 4.75	23.06 ± 3.28	12.31 ± 3.95	21.81 ± 3.65
Me	25.00	54.00	40.00	46.00	20.00	17.00	16.00	23.00	12.00	22.00
Q_1	20.00	46.50	30.50	40.50	17.00	14.50	12.50	21.00	9.50	20.00
Q_3	29.50	62.00	50.50	50.50	23.00	20.00	19.00	26.00	15.00	24.00
Min-Max	8.00 – 40.00	16.00 –75.00	16.00 – 69.00	16.00 – 70.00	8.00 – 32.00	5.00 – 25.00	7.00 – 25.00	14.00 – 28.00	7.00 – 23.00	7.00 – 28.00
W	0.981	0.958	0.984	0.970	0.976	0.974	0.981	0.961	0.981	0.925
p	0.098	0.001	0.199	0.011	0.040	0.027	0.110	0.002	0.102	0.000

AIS–Acceptance of Illness Scale; TOC–Task-Oriented Coping; EOC–Emotion-Oriented Coping; AOC–Avoidance-Oriented Coping; Distraction–engaging in alternative activities; Social Diversion–seeking social contact; MM 1–Anxious Preoccupation; MM 2–Fighting Spirit; MM 3–Helplessness/Hopelessness; MM 4–Positive Redefinition; M ± SD–mean and standard deviation; Me–median; Min-Max–minimum-maximum; Q1 and Q3–the first and the third quartiles; W–Shapiro-Wilk's test; p–statistical significance.

Table III. Analysis of the correlations between the studied variables.

		AIS	TOC	AIS	Rho	1.000	0.178	-0.038	0.086	0.051	MM4
AIS	Rho	1.000		p	.	0.057	0.685	0.365	0.589	-0.036	0.167
	p	.	TOC	Rho	0.178	1.000	0.186	0.357	0.302	0.683	0.059
TOC	Rho	0.178		p	0.057	.	0.039	0.000	0.001	-0.066	0.221
	p	0.057	EOC	Rho	-0.038	0.186	1.000	0.451	0.378	0.468	0.014
EOC	Rho	-0.038		p	0.685	0.039	.	0.000	0.000	0.524	0.073
	p	0.685	AOC	Rho	0.086	0.357	0.451	1.000	0.823	0.000	0.420
AOC	Rho	0.086		p	0.365	0.000	0.000	.	0.000	0.131	0.278
	p	0.365	Distraction	Rho	0.051	0.302	0.378	0.823	1.000	0.148	0.002
Distraction	Rho	0.051		p	0.589	0.001	0.000	0.000	.	0.117	0.100
	p	0.589	0.001	0.000	0.000	.	0.000	0.031	0.729	0.199	0.269
Social Diversion	Rho	0.134	0.358	0.311	0.799	0.431	1.000	0.182	0.160	0.039	0.354
	p	0.154	0.000	0.000	0.000	0.000	.	0.044	0.077	0.670	0.000
MM 1	Rho	-0.125	0.140	0.599	0.251	0.195	0.182	1.000	-0.125	0.651	0.094
	p	0.159	0.122	0.000	0.005	0.031	0.044	.	0.136	0.000	0.265
MM 2	Rho	0.099	0.108	-0.180	0.042	-0.032	0.160	-0.125	1.000	-0.239	0.483
	p	0.267	0.233	0.047	0.644	0.729	0.077	0.136	.	0.004	0.000
MM 3	Rho	-0.036	-0.066	0.524	0.131	0.117	0.039	0.651	-0.239	1.000	-0.065
	p	0.683	0.468	0.000	0.148	0.199	0.670	0.000	0.004	.	0.436
MM 4	Rho	0.167	0.221	0.073	0.278	0.100	0.354	0.094	0.483	-0.065	1.000
	p	0.059	0.014	0.420	0.002	0.269	0.000	0.265	0.000	0.436	.

AIS–Acceptance of Illness Scale; TOC–Task-Oriented Coping; EOC–Emotion-Oriented Coping; AOC–Avoidance-Oriented Coping; Distraction–engaging in alternative activities; Social Diversion–seeking social contact; MM 1–Anxious Preoccupation; MM 2–Fighting Spirit; MM 3–Helplessness/Hopelessness; MM 4–Positive Redefinition; M ± SD–mean and standard deviation; Me–median; Min-Max–minimum-maximum; Q1 and Q3–the first and the third quartiles; Rho–Spearman's rank correlation coefficient; p–statistical significance
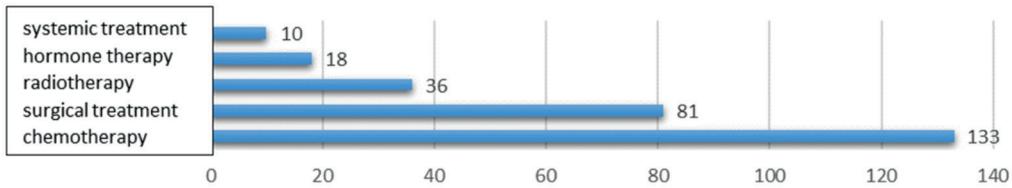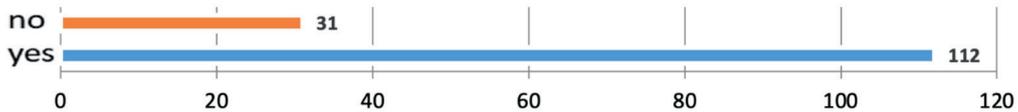
Figure 2. Types of treatment.
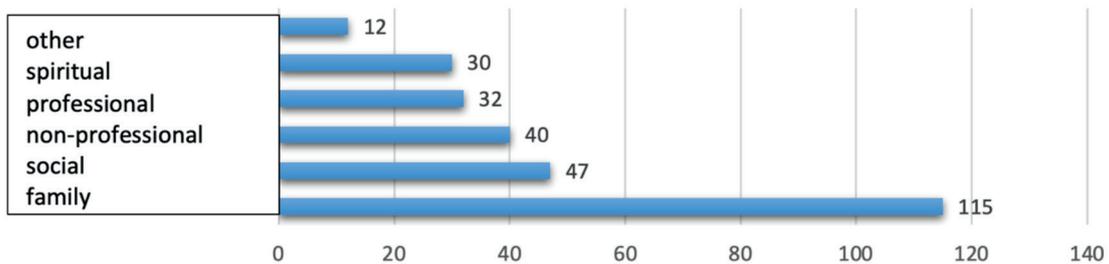

Figure 3. Support in disease.

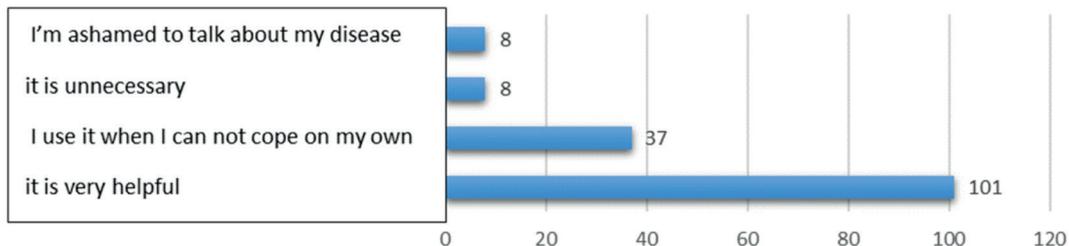**Figure 4.** Types of support in disease.

Figure 5. The use of support in disease.

Analysis showed that the shorter the duration of the disease, the higher the level of its acceptance, however this relationship was not statistically significant *(p > 0.05).*

The assessment of coping with stressful situations demonstrated that patients who had been ill for longer time periods more often adopted the Emotion-Oriented Coping strategy –this result tended to be statistically significant. Respondents suffering from neoplastic disease for over one year adopted the Emotion-Oriented Coping strategy more often than those ill for less than < one year (41.00 ± 13.15 *vs.* 37.90 ± 11.34) *(p < 0.071).* A similar relationship was observed for Social Diversion (seeking social contacts) (17.50 ± 4.03 *vs.* 16.27 ± 4.12) *(p < 0.05).*

Analysis of mental adjustment to neoplastic disease revealed that patients who had been ill for more than one year more often used Positive Redefinition (22.37 ± 3.18 *vs.* 21.14 ± 4.08) *(p < 0.05).*

Table IV. The influence of the duration of the disease on the acceptance of the disease, the ways of coping with stressful situations, and mental adjustment to cancer.

	Statistics	AIS	TOC	EOC	AOC	Distraction	Social Diversion	MM 1	MM 2	MM 3	MM 4
< one year	M ± SD Me Min-Max	25.41 ± 25.00 7.73 8.00–40.00	52.84 ± 53.00 11.89 6.00–75.00	37.90 ± 39.00 11.34 0.00–57.00	43.57 ± 43.00 10.21 7.00–66.00	18.86 ± 19.00 5.50 0.00–30.00	16.27 ± 16.00 4.12 4.00–25.00	15.71 ± 16.00 4.68 4.00–25.00	22.49 ± 23.00 3 29 14.00–28.00	11.98 ± 12.00 4.45 2.00–23.00	21.14 ± 22.00 4.08 5.00–28.00
> one year	M ± SD Me Min-Max	23.47 ± 24.00 8.35 0.00–40.00	53.61 ± 54.00 11.65 19.00–73.00	41.00 ± 40.50 13.15 13.00–69.00	46.24 ± 46.50 9.13 19.00–70.00	19.81 ± 20.00 5.03 9.00–32.00	17.50 ± 18.00 4.03 4.00–25.00	16.05 ± 16.50 4.83 7.00–25.00	23.53 ± 23.50 3.22 15.00–28.00	12.58 ± 13.00 3.50 6.00–21.00	22.37 ± 23.00 3.18 14.00–28.00
	MW/T * p	-1.227* 0.220	-0.579 0.562	-1.806* 0.071	-1.523 0.128	-1.121 0.262	-1.932 0.053	-0.130 0.896	-1.752 0.080	-0.956* 0.339	-2.322 0.020

AIS–Acceptance of Illness Scale; TOC–Task-Oriented Coping; EOC–Emotion-Oriented Coping; AOC–Avoidance-Oriented Coping; Distraction–engaging in alternative activities; Social Diversion–seeking social contact; MM 1–Anxious Preoccupation; MM 2–Fighting Spirit; MM 3–Helplessness/Hopelessness; MM 4–Positive Redefinition; M ± SD–mean and standard deviation; Me–median; Min-Max–minimum-maximum; Q1 and Q3–the first and the third quartiles; Rho–Spearman's rank correlation coefficient; p–statistical significance

Table V. The influence of the type of tumor on the acceptance of the disease, the ways of coping with stressful situations, and mental adjustment to neoplastic disease.

	Statistics	AIS	TOC	EOC	AOC	Distraction	Social Diversion	MM 1	MM 2	MM 3	MM 4
Benign	M ± SD Me Min-Max	25.07 ± 24.00 7.04 8.00–35.00	54.53 ± 53.00 8.39 40.00–71.00	49.20 ±51.00 8.36 31.00–62.00	51.40 ± 49.00 7.27 43.00–66.00	21.47 ± 22.00 4.44 11.00–29.00	19.80 ± 20.00 2.78 16.00–25.00	17.53 ± 19.00 3.48 10.00–21.00	23.07 ± 23.00 2.87 18.00–28.00	12.80 ± 13.00 2.88 7.00–19.00	22.33 ± 22.00 3.56 17.00–28.00
Malignant	M ± SD Me Min-Max	24.23 ± 25.00 8.27 0.00–40.00	53.07 ± 54.00 12.16 6.00–75.00	38.13 ± 38.50 12.30 0.00–69.00	44.06 ± 44.00 9.66 7.00–70.00	19.06 ± 20.00 5.30 0.00–32.00	16.51 ± 17.00 4.10 4.00–25.00	15.64 ± 16.00 4.88 4.00–25.00	23.06 ± 23.00 3.35 14.00–28.00	12.23 ± 12.00 4.10 2.00–23.00	21.73 ± 22.00 3.68 5.00–28.00
	MW/ T* p	-0.007 * 0.994	-0.541 0.589	-3.434 * 0.001	-2.788 0.005	-1.878 0.060	-3.037 0.002	-2.067 0.039	-0.310 0.757	-1.264 * 0.206	-0.313 0.754

AIS–Acceptance of Illness Scale; TOC–Task-Oriented Coping; EOC–Emotion-Oriented Coping; AOC–Avoidance-Oriented Coping; Distraction–engaging in alternative activities; Social Diversion–seeking social contact; MM 1–Anxious Preoccupation; MM 2–Fighting Spirit; MM 3–Helplessness/Hopelessness; MM 4–Positive Redefinition; M ± SD–mean and standard deviation; Me–median; Min-Max–minimum-maximum; Q1 and Q3–the first and the third quartiles; Rho–Spearman's rank correlation coefficient; p–statistical significance

A similar relationship was observed for Fighting Spirit; the result tended to be statistically significant *(p < 0.08)* (Table IV).

The type of tumor was statistically significantly related to the way of coping with stressful situations and mental adjustment to neoplastic disease, but not to the acceptance of the disease *(p > 0.05)*. Important differences were noted with reference to stress-coping strategies: patients with benign tumors were more focused on emotions (Emotion-Oriented Coping) (49.20 ± 8.36 *vs.* 38.13 ± 12.30; *p < 0.001*) and avoiding (Avoidance-Oriented Coping) (51.40 ± 7.27 *vs.* 44.06 ± 9.66; *p < 0.005*).

Analysis of mental adjustment to neoplastic disease showed that patients with benign tumors were significantly more often characterized by Anxious Preoccupation than those with malignant forms (17.53 ± 3.48 *vs.*15.64 ± 4.88; *p < 0.05*) (Table V).

The duration of treatment was linked to the acceptance of the disease, the ways of coping with stressful situations, and mental adjustment to neoplastic disease. The longer the treatment lasted, the lower the acceptance of the disease was (from 25.20 ± 7.70 to 23.51 ± 8.45; *p > 0.05*). At the same time, the ability to cope with stress was better –the results for Emotion-Oriented and Avoidance-Oriented Coping tended to be statistically significant *(p < 0.5)*, and the result for Social Diversion was statistically significant *(p < 0.05)*. The duration of treatment had no effect on mental adjustment to the disease (Table VI).

The impact of support on the acceptance of the disease, the ways of coping with stressful situations, and mental adjustment to cancer.

Support had a significant impact on the ways of coping with stressful situations and mental adjustment to the disease, but not on its acceptance. Patients receiving support scored higher on each of the stress-coping subscales *(p < 0.05)*. There were also differences in mental adjustment to cancer, which tended to be statistically significant. Patients receiving support more often adopted the destructive Anxious Preoccupation coping style (16.37 ± 4.66 *vs.* 13.90 ± 4.82) *(p < 0.1)*. Those who had not received support chose rather the constructive style of Fighting Spirit (23.90 ± 2.79 *vs.* 12.59 ± 3.99) *(p < 0.1)* (Table VII).

Discussion

Neoplastic disease is undoubtedly a difficult life experience and the one that determines all aspects of human functioning: physical, psychosocial, and spiritual. The moment of a diagnosis is traumatic for the patient. The disease forces them to change their habits and adapt to the new situation.

The acceptance of the disease is a long-term process conditioned by personality traits and the ability to cope with stress. Also, some clinical factors, such as the type and duration of treatment, may be of relevance[8]. In our investigation, the average score for the general acceptance of tumor disease according to the AIS was 24.35 ± 8.10 points. Similar results were obtained by Religioni et al[8] (27.33 ± 8.44) and Kołpa et al[9] (25.35 ± 9.25).

Modifiable factors contributing to the functioning of cancer patients include social support. It may affect health both through social mechanisms promoting pro-health behaviors and through mechanisms improving emotional well-being. A low level of social support after tumor diagnosis and during its treatment is associated with more severe depression and anxiety[10].

Research on patient adaptation to cancer is a source of valuable information for healthcare professionals, showing patients' attitudes towards the disease and the possible ways of supporting them[11].

The clinical situation is a set of variables that are independent of the patient. Deteriorating health, side effects of therapy, and the necessity to give up daily activities to stay in hospital cause various reactions. It is important whether and how the sick person will accept these changes and adapt to the new situation. Our study did not reveal a significant relationship between the duration of the disease and its acceptance *(p > 0.05)*. Franke et al[11], Kapela et al[12], Kołpa et al[9], and Czerw et al[13] also did not observe the link between these variables. Neither did Secinti et al[14], who analyzed patients of clinics in the United States. Probably, a cancer diagnosis itself causes people's anxiety about their future, and it is not important for them how long it has been lasting. What matters is the very fact that cancer is present in the body, creating a sense of permanent threat.

In our study, no correlation between the type of tumor and the level of disease acceptance was observed *(p > 0.05)*. On the other hand, Czerw et al[13] reported that people with benign tumors found it easier to accept their disease than metastatic patients. This is logical because such people have a greater hope of recovery and perhaps less fear for their lives.

We noticed some differences in the level of the disease acceptance depending on the duration of

Table VI. Influence of the duration of treatment on the acceptance of the disease, the ways of coping with stressful situations and mental adjustment to neoplastic disease.

	Statistics	AIS	TOC	EOC	AOC	Distraction	Social Diversion	MM 1	MM 2	MM 3	MM 4
< one year	M ± SD	25.20 ± 25.00	52.79 ± 53.00	38.23 ± 39.50	43.59 ± 44.00	18.96 ± 19.00	16.13 ± 16.00	15.93 ± 16.00	22.55 ± 23.00	12.04 ± 12.00	21.34 ± 22.00
	Me	7.70	12.59	11.80	10.54	5.61	4.31	4.75	3.17	4.26	4.02
	Min-Max	8.00–40.00	6.00–75.00	0.00–57.00	7.00–66.00	0.00–30.00	4.00–25.00	4.00–25.00	14.00–28.00	2.00–23.00	5.00–28.00
> one year	M ± SD	23.51 ± 25.00	53.74 ± 54.00	40.95 ± 40.00	46.46 ± 46.00	19.79 ± 20.00	17.75 ± 18.00	15.86 ± 16.00	23.56 ± 24.00	12.58 ± 13.00	22.28 ± 23.00
	Me	8.45	10.87	12.93	8.61	4.87	3.74	4.79	3.34	3.63	3.22
	Min-Max	0.00–40.00	25.00–73.00	17.00–69.00	30.00–70.00	10.00–32.00	8.00–25.00	7.00–25.00	15.00–28.00	6.00–21.00	14.00–28.00
	MW/T *	-1.236*	-0.605	-1.808*	-1.671	-1.210	-2.530	-0.026	-1.300	-1.380*	-1.407
	p	0.217	0.545	0.071	0.095	0.226	0.011	0.979	0.194	0.168	0.159

AIS–Acceptance of Illness Scale; TOC–Task-Oriented Coping; EOC–Emotion-Oriented Coping; AOC–Avoidance-Oriented Coping; Distraction–engaging in alternative activities; Social Diversion–seeking social contact; MM 1–Anxious Preoccupation; MM 2–Fighting Spirit; MM 3–Helplessness/Hopelessness; MM 4–Positive Redefinition; M ± SD–mean and standard deviation; Me–median; Min-Max–minimum-maximum; Q1 and Q3–the first and the third quartiles; Rho–Spearman's rank correlation coefficient; p–statistical significance

Table VII. The influence of support on the acceptance of the disease, the ways of coping with stressful situations, and mental adjustment to cancer.

	Statistics	AIS	TOC	EOC	AOC	Distraction	Social Diversion	MM 1	MM 2	MM 3	MM 4
Receives support	M ± SD	24.40 ± 25.00	54.09 ± 55.00	41.19 ± 41.00	46.29 ± 47.00	19.77 ± 20.00	17.54 ± 17.00	16.37 ± 17.00	22.81 ± 23.00	12.59 ± 13.00	21.95 ± 22.00
	Me	7.93	10.76	12.13	9.69	5.42	3.89	4.66	3.34	3.99	3.75
	Min-Max	0.00-40.00	6.00-73.00	0.00-69.00	7.00-70.00	0.00-32.00	4.00-25.00	4.00-25.00	14.00-28.00	2.00-23.00	5.00-28.00
Does not receive support.	M ± SD	24.00 ± 27.00	50.43 ± 50.00	32.71 ± 32.00	39.38 ± 41.00	17.52 ± 18.00	14.29 ± 15.00	13.90 ± 14.00	23.90 ± 24.00	11.43 ± 11.00	21.14 ± 21.00
	Me	9.13	14.95	11.76	7.76	4.11	4.09	4.82	2.79	3.47	3.24
	Min-Max	8,00-38.00	19.00-75.00	13.00-54.00	19.00-56.00	9.00-25.00	4.00-21.00	7.00-25.00	18.00-28.00	7.00-19.00	14.00-26.00
	MW/T *	-0.202*	-1.485	-2.973*	-3.135	-1.933	-2.897	-1.777	-1.778	-0.905*	-0.930
	p	0.840	0.028	0.003	0.002	0.053	0.004	0.076	0.075	0.366	0.352

AIS–Acceptance of Illness Scale; TOC–Task-Oriented Coping; EOC–Emotion-Oriented Coping; AOC–Avoidance-Oriented Coping; Distraction–engaging in alternative activities; Social Diversion–seeking social contact; MM 1–Anxious Preoccupation; MM 2–Fighting Spirit; MM 3–Helplessness/Hopelessness; MM 4–Positive Redefinition; M ± SD–mean and standard deviation; Me–median; Min-Max–minimum-maximum; Q1 and Q3–the first and the third quartiles; Rho–Spearman's rank correlation coefficient; p–statistical significance.

treatment –the longer the therapy, the lower the acceptance of the disease. This may indicate that prolonged treatment makes patients doubt their recovery, and thus worsens their emotional state. However, these results were statistically insignificant *(p > 0.05)*. This corresponds with the observation made by Kapela et al[12] and Kołpa et al[9], who found no correlation between the duration of treatment and acceptance of the disease.

Stress is related to disease in 80-90% of cases[15]. These phenomena are mutually dependent. On one hand, chronic stress can trigger the disease process, and on the other, disease is a stress factor. Coping with stressful situations is a type of activity that is prompted by external or internal stimuli, motivating the body to fight[16]. We analyzed the impact of the medical situation on the way of coping with stress, and found that it can be related to the duration of the disease *(p < 0.1)*. The longer the disease lasts, the more the patients are focused on their emotions. They concentrate on themselves, developing feelings of guilt, fear, and anger. The most important issue for the patient is to relieve tension. The use of a destructive strategy (e.g., emotional approach coping) may result in anti-health actions, such as alcohol abuse or aggressive behavior[17]. Different results were obtained by Kurowska et al[18], who found that people suffering from cancer for a longer period more often used the constructive task-oriented strategy. These divergent results may stem from differences between the study samples. However, regardless of the duration of the disease, it is essential for patients to adopt appropriate (constructive) stress-coping strategies that may support cancer therapy. In our study, the average score for task-oriented coping was 53.27 ± 11.71, which means that it exceeded the median of possible scores. This result was the highest of those analyzed. The mean score for emotion-oriented coping was the lowest (39.60 ± 12.41), and the average score for avoidance-oriented coping was 45.04 ± 9.68. Different results were presented by Dryhinicz et al[19], who informed that the most common strategy among cancer patients was emotion-oriented coping (M = 49.60). We noticed that people with benign tumors were more focused on their emotions and avoiding stressful situations *(p < 0.05)*. This was surprising to find out that people with malignant tumors were more likely to adopt constructive strategies. By focusing on the task, they mobilized themselves and coped with stress better. The majority of our study sample (89%) suffered from malignant tumors. The conclusion is that people with benign tumors find it more difficult to handle stressful situations. It is possible that they are afraid of further diagnosis, error in the assessment of malignancy, or changes that will occur in the body.

Another potential determinant of a stress-coping strategy is the duration of treatment. It has been noticed that people living with neoplastic disease for a longer time cope better with difficult situations *(p < 0.1)*. Perhaps this is because they acquire the ability to distinguish between serious problems and trivial concerns of everyday life. Such patients definitely more often apply the task-oriented strategy, which proves their willingness to overcome barriers and to actively solve their problems. Mental adjustment to the disease manifests itself as adopting constructive strategies, associated with a better prognosis, a longer remission period and longer overall survival[20]. Our findings show that mental adjustment to the disease is significantly determined by its duration *(p < 0.05)* –patients who are ill for more than one year adapt better, using the Positive Redefinition strategy. People with a longer medical history probably see the disease as part of themselves, they learn to function with it, and better adapt to the new situation. This thesis has been confirmed by Żukowska et al[21], but not by Franke et al[11].

An interesting phenomenon has been observed in Asian countries, where some patients are not aware of having cancer. There is a central model of making medical decisions without the participation of the patient. Decisions are made by the family, so sometimes patients are not informed about their condition. Chittem et al[22] found that such patients poorly adapt to the disease, show increased anxiety, and are guided by negative emotions. Therefore, it is extremely important to make the patient and their relatives actively participate in the therapeutic process, including planning care and therapy. In our study, patients with benign tumors manifested Anxious Preoccupation significantly more often than cancer patients *(p < 0.05)*. This means that they were less able to adapt to the disease, which is strange, considering that they had a much greater chance of complete recovery. It can be assumed that the mere news of the disease, regardless of its nature, causes great anxiety. However, this has not been confirmed by other publications. Based on our findings, the duration of treatment has no major impact on mental adjustment to the disease *(p > 0.05)*. Opposite results were reported by Smoleń et al[23], who provided evidence for the relationship between these

factors. In their study, the adaptation to neoplastic disease was determined by the time and type of treatment. It is possible that the sick person who is aware of actions undertaken to counteract the disease, adapts to the limitations it causes more easily, hoping for recovery.

Patients develop different ways of coping with stress depending on their previous experiences. The variety of personalities combined with various life experiences causes that people suffering from cancer assume different attitudes towards the new situation. Reactions can be either positive (supportive of treatment) or negative. When health professionals are able to recognize and classify the patient's reactions, they can try to modify them[15]. The understanding of the patient's attitude towards the disease allows the selection of the most appropriate structural and functional support. The task of the healthcare system is to create a holistic care plan, which is a standard in European countries[6]. According to the literature, cancer-related support received from other people reduces patients' stress, improves their mental functioning, and gives them a sense of security[6]. Surprisingly, it does not correspond with our findings, showing that support had no effect on the acceptance of the disease *(p > 0.05)*. This may indicate that our study sample was too small, or that there was another factor, not taken into account, that had changed the patients' attitudes towards the disease. In the studies conducted by Franke et al[11], Pacian et al[6], and Kołpa et al[9], people receiving support accepted the diagnosis definitely more easily. Dumrongpanapakorn et al[24], who analyzed Thai women with breast cancer, reported that the acceptance of the disease was substantially higher among women receiving social support. Thanks to the support received, the respondents felt stronger and regained the will to fight cancer.

Patients have many alternative sources from which they can get the support they need, among them, clinical psychologists and therapists. Considering the complexity of the situation of each seriously ill patient, this type of support is especially needed. The identification of patients' psychosocial needs is as important as the diagnosis of mental problems (anxiety, depression) emerging in the course of cancer. This is essential for appropriate referral of the patient to specialist psychological care[25]. Unfortunately, due to carcinophobia that prevails in public awareness, neoplastic diseases cause that sick people feel stigmatized, leading to their isolation[26,27]. This is regarded a reason why cancer patients use available forms of support so rarely. There are numerous cancer organizations and support groups, which arrange meetings with people who have won with cancer. In Poland, they include "Amazonki", "Kwiat Kobiecości", "Gladiator", "Krwinka", and "Zwrotnik raka" ("Amazons", "Flower of Femininity", "Gladiator", "Blood Cell", and "Tropic of Cancer"). These organizations constitute an important element of oncological therapy[28]. Factors that also help to cope with stress are faith and spiritual support, whose positive impact was reported by Piskozub et al[29]. People stricken by illness not only seek medical help, but also try to find solace in religion. According to Wyszomirska et al[30], support may change the way we perceive reality and disease, encourage us to act, and thus improve our adjustment to cancer. The importance of high-quality social support for the patient's well-being was also emphasized by Fong et al[31]. Surprisingly, in our study people receiving support more often chose the destructive coping style of Anxious Preoccupation *(p < 0.1)*, while those not receiving it were more likely to adopt the constructive Fighting Spirit strategy *(p < 0.1)*. Perhaps, this is because loneliness can be a factor stimulating to struggle for life and existence, because the sick know that they can only count on themselves. Another theory is that patients are simply ashamed to talk about their disease and do not want to burden their relatives with their problems. On the other hand, people who can depend on others may be more scared due to the fear of losing their loved ones.

Findings to date on the functioning of people with cancer prove the role of an individualized approach that takes into account the differences resulting from both the nature of complex disease entities, and subjective assessment of the ability to cope with stress and adapt to the disease. Individual assessment of the patient's mental state together with the appropriate support should be an important element of medical and psychological care. The starting point for developing effective medical care is to engage patients in the therapeutic process, keep them informed, and consult the planned procedures with them. This activates their internal motivation, and thus supports the healing process. The results obtained can be used as guidelines for people who have contact with cancer, namely patients, their relatives, and medical professionals. Patients should be encouraged to open up to a new situation, fight the disease, use professional support, and dissuade from social isolation and focusing on negative emotions[16].

Conclusions

Oncological patients face numerous physical and mental cancer-related changes that affect their acceptance of the disease. Patients need to be informed about the methods of coping with the diagnosis. Therefore, systemic counseling from the very first moment of treatment is essential. Knowing the variety of factors that determine the strategy of coping with cancer, it is possible to plan specific psychotherapeutic activities that can complement the standard treatment process.

Regardless of the patient's medical situation, neoplastic disease is a strong stress factor. Therefore, all oncological patients should be provided with holistic medical care, including psychological counseling, that would help them understand and accept their situation.

The majority of the patients sought and received support from their relatives, but only to some extent from professionals. These patients were more often preoccupied with anxiety. Therefore, it would be reasonable to consider the presence of psychologists at each stage of the disease. They would also take care of the patients' relatives, which would strengthen the positive effect of family support.

Limitations of the Study

The point that may be regarded as the limitation of our study is the fact that we did not take into account such variables as the age and sex of the participants, or tumor types with regard to the organs affected. And yet, at this stage we were interested in more general results. It will be interesting to analyze these aspects in further research.
It is important to conduct further long-term studies on larger groups of patients. This may provide more accurate results, and thus enable the introduction of a psychological support strategy tailored to the patient, as a complement to the treatment process.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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