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SENSE OF COHERENCE AS A CORRELATE OF COPING STRATEGIES, DISEASE ACCEPTANCE, AND DISTRESS IN CANCER PATIENTS: A SALUTOGENIC PERSPECTIVE

Abstract

Objective: *Cancer represents one of the most traumatic health experiences, triggering complex psychological processes related to disease coping, health situation acceptance, and perceived stress levels. This experience is highly anxiety-provoking and often exceeds patients' adaptive capacities. Cognitive appraisal of the disease, global life orientation, and critical life events experienced by patients generate consequences in disease-related attitudes, particularly regarding adaptation to changed conditions and manifesting in distress intensity levels and stress-coping strategies. This pilot study examined associations between SOC and coping strategies, cancer acceptance levels, and distress intensity in oncological patients.*

Method: *Fifty patients with diagnosed cancer completed standardized instruments: Sense of Coherence Questionnaire (SOC-29), Coping Orientation to Problems Experienced Inventory (COPE), Mental Adjustment to Cancer Scale (Mini-MAC), and NCCN Distress Thermometer. Following assessment of distribution normality (Shapiro-Wilk test), relationships were analyzed using Spearman's rho correlations*

Results: *Higher SOC correlated significantly with adaptive coping strategies (acceptance: rho = – 0.32, p = 0.025) and better psychological adjustment to cancer (helplessness-hopelessness: rho = 0.32, p = 0.025). Contrary to hypotheses, no significant SOC-distress correlations emerged. SOC dimensions showed differential relationship patterns, with manageability particularly associated with emotion-focused coping*

Conclusions: *Sense of coherence constitutes an important psychological resource for cancer adaptation, though relationships are more complex than simple linear associations. Findings support integrating salutogenic interventions in psycho-oncological care while highlighting need for refined theoretical models explaining SOC's role in acute disease crises.*

Keywords: *sense of coherence, salutogenesis, cancer, coping strategies, disease acceptance, distress, psycho-oncology*

1. Introduction

1.1. Cancer as a critical life event

Cancer remains a leading cause of mortality globally with profound implications for psychological well-being. In Poland, approximately 171,558 new cancer cases and 93,652 cancer-related deaths occurred in 2021, with breast, lung, and colorectal cancers most prevalent (Didkowska et al., 2023). Cancer diagnosis represents one of the most distressing health experiences, constituting a potentially critical life event that fundamentally disrupts life equilibrium and necessitates adaptation to profoundly altered circumstances (Heszen, 2013; Juczyński, 2009). This experience frequently exceeds patients' existing adaptive capacities, with uncertainty about prognosis, disrupted life goals, and burdensome symptoms and treatment effects intensifying psychological distress (Holland & Bultz, 2007; Zabora et al., 2001).

Psychological responses to cancer vary considerably. While some patients achieve effective adaptation and even experience post-traumatic growth (Tedeschi & Calhoun, 2004), many develop adjustment disorders, anxiety, depression, and persistent distress (Derogatis et al., 1983; Mitchell et al., 2011). Two mechanisms condition psychological crisis in cancer patients: death-anticipatory reactions and experiences related to diagnosis and treatment (De Walden-Gałuszko, 2000). These reactions evolve across disease phases (Juczyński, 2009) and are fundamentally shaped by cognitive appraisal processes (Lazarus & Folkman, 1984).

1.2. The Salutogenic Model of Health

The salutogenic model, developed by Aaron Antonovsky (1987, 1995), represents a paradigm shift from pathogenic (disease-focused) to health-promoting perspectives. Rather than asking *What causes disease?*, salutogenesis asks *What creates health?* and *What enables people to move toward the health end of the health-disease continuum despite exposure to stressors?* Sense of Coherence (SOC) constitutes the central construct of salutogenesis, defined as *a global orientation that expresses the extent to which one has a pervasive,*

enduring though dynamic feeling of confidence that (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable, and explicable [comprehensibility]; (2) the resources are available to one to meet the demands posed by these stimuli [manageability]; and (3) these demands are challenges, worthy of investment and engagement [meaningfulness] (Antonovsky, 1987, p. 19). SOC comprises three interrelated components: (1) Comprehensibility (cognitive component): The extent to which internal and external stimuli are perceived as making cognitive sense, as information that is ordered, consistent, and structured rather than chaotic and inexplicable. (2) Manageability (instrumental component): The extent to which one perceives that resources are at one's disposal to meet demands posed by stimuli – resources under one's own control or controlled by legitimate others whom one trusts. (3) Meaningfulness (motivational component): The extent to which one feels that life makes sense emotionally, that demands are challenges worthy of investment and commitment rather than burdens.

According to Antonovsky (1987, 1995), individuals with strong SOC: perceive stressors as comprehensible rather than chaotic; believe they possess or can mobilize resources to cope; find meaning even in adversity, viewing challenges as worthy of engagement; consequently, they select appropriate coping strategies and utilize available general resistance resources (GRRs) effectively. Recent research has confirmed SOC's protective role across diverse health contexts (Schäfer et al., 2021), including cancer (Büssing et al., 2022). Meta-analyses demonstrate that higher SOC predicts better health-related quality of life, lower psychological distress, and more effective coping with chronic illness (Eriksson & Lindström, 2006, 2007).

1.3. Theoretical Integration

The relationship between sense of coherence and adaptation to cancer can be understood through the integration of salutogenic theory with the Transactional Model of Stress and Coping proposed by Lazarus and Folkman (1984). Within this integrated framework, cancer diagnosis initiates a primary appraisal process in which individuals evaluate its significance for their wellbeing. Individuals characterized by high sense of coherence, due to the elevated comprehensibility

component, tend to perceive the situation as a challenge requiring confrontation yet remaining within the boundaries of cognitive understanding, rather than as a chaotic and overwhelming experience that escapes their control.

In the subsequent stage of secondary appraisal, individuals assess available coping resources. Those with high SOC, through the strong dimension of manageability, perceive greater availability of both personal resources, such as emotional regulation abilities and problem-solving competencies, and social resources, encompassing interpersonal support networks. Finally, the meaningfulness dimension facilitates the process of meaning-making, which enables individuals with high sense of coherence to find purpose even in the experience of suffering. This process facilitates both the application of meaning-focused coping strategies, as suggested by Park (2010), and post-traumatic growth, as conceptualized by Tedeschi and Calhoun (2004). Empirical evidence to date confirms the significant role of sense of coherence in the process of adaptation to cancer. Regarding coping strategies, higher levels of SOC correlate with preference for problem-focused and meaning-focused strategies, as opposed to avoidance strategies or denial, as documented by studies conducted by Gustavsson-Lilius and colleagues (2012) and Sarenmalm and co-authors (2013). Antonovsky (1987) suggested that sense of coherence may function as a *meta-resource* influencing the selection of specific adaptive strategies. The comprehensibility component enables realistic understanding of the disease, while the meaningfulness dimension promotes its acceptance as part of a broader existential life trajectory. Numerous studies document a negative association between SOC and psychological distress intensity in cancer patients, as confirmed by works of Delgado-Guay and colleagues (2011), and Winger and collaborators (2020).

Recent research suggests complex mediational mechanisms underlying the relationship between SOC and psychological adaptation quality. Winger and team (2020) indicate that coping strategies may mediate the relationship between sense of coherence and adjustment outcomes. Individuals with high levels of sense of coherence more frequently select strategies considered more adaptive, which in turn predicts more favorable psychological outcomes. Additionally, SOC may serve as a moderator in the stress-distress

relationship, acting as a buffer protecting against distress intensification under high stress conditions, as suggested by Schäfer and colleagues (2021).

1.4. Research gap and study rationale

Despite substantial research on SOC in cancer populations, important gaps remain in the current state of knowledge. First, most existing studies focus on relationships between sense of coherence and single outcome variables, such as coping strategies or disease acceptance or distress intensity, which limits the possibility of understanding the comprehensive role of sense of coherence in the adaptation process. Few studies simultaneously analyze the interconnected relationships among these adaptive processes. Second, although the concept of salutogenesis has its roots in European scientific tradition, research on sense of coherence in Polish cancer patient populations remains limited. However, cultural context may influence both the expression of SOC and the mechanisms of its impact on adaptive processes.

The present study pursues three primary research objectives. First, it aims to examine relationships between sense of coherence and stress-coping strategies in cancer patients. Second, it seeks to analyze associations between sense of coherence and psychological adjustment to cancer. Third, it aims to investigate correlations between sense of coherence and psychological distress intensity.

Based on salutogenic theory and existing empirical evidence, four research hypotheses were formulated: (H1) Higher overall SOC will correlate positively with adaptive coping strategies (active coping, planning, positive reappraisal) and negatively with maladaptive strategies (denial, behavioral disengagement, substance use); (H2) Higher overall SOC will correlate positively with constructive adjustment to cancer (fighting spirit, positive reappraisal) and negatively with destructive adjustment (anxious preoccupation, helplessness-hopelessness); (H3) Higher overall SOC will correlate negatively with distress intensity; (H4) SOC dimensions (comprehensibility, manageability, meaningfulness) will show differential relationship patterns with coping, adjustment, and distress variables, with manageability most strongly associated with coping strategy selection.

2. Material and Methods

Participants and Procedure

The study was conducted at the Clinical Oncology Department of the Stefan Cardinal Wyszyński Voivodeship Specialist Hospital SP ZOZ in Lublin from November 2023 to April 2024, following prior written consent from the Hospital Director and the Department Head. The study included 50 patients with diagnosed neoplastic diseases, including: malignant breast neoplasm, malignant colon neoplasm, malignant stomach neoplasm, malignant rectal neoplasm, malignant bronchial and lung neoplasm, malignant skin melanoma, malignant ovarian neoplasm, malignant prostate neoplasm, malignant renal pelvis neoplasm, malignant bladder neoplasm, and malignant neoplasm of unspecified location. All patients were informed that participation in the study was voluntary and anonymous, and that the obtained data would be used exclusively for scientific purposes. Inclusion criteria: (1) confirmed cancer diagnosis; (2) age ≥18 years; (3) able to provide informed consent; (4) sufficient Polish language proficiency. Exclusion criteria: (1) severe cognitive impairment precluding questionnaire completion; (2) active psychiatric disorder requiring hospitalization.

The study included 50 participants (Table 1). Women comprised 72% of the study group (n=36), while men constituted 28% (n=14). For the female group (n=36), the mean age was 54.86 years, which is lower than that of the male participants (n=14), where it was 65.36 years. The youngest woman was 35 years old and the oldest was 74, while among men, the youngest was 54 and the oldest was 79. The median age among women was 54 and among men was 65.5 years. The overall mean age for all participants was 57.80 years and the median was 36.5 years.

The majority of study participants possessed higher education (56%, n=28). Among women, 69.4% had higher education, while among men this percentage was 56%. Without gender division, after higher education (56%), participants had: secondary education (24%) and basic vocational education (20%). 44% of participants lived in rural areas, 26% in cities with 150-500 thousand inhabitants, 24% in cities up to 50 thousand inhabitants, and 6% in cities

with 50-150 thousand inhabitants. When divided by gender, the largest percentage of women resided in rural areas (38.9%), as did men, where this percentage was 57.1%.

52% of all participants were married women, 24% married men, 12% single women, 8% divorced, 2% single men, and 2% widows. 56% were employed, 32% received pension benefits, 6% were unemployed, and another 6% received disability benefits. When divided by gender, 69.4% of women were employed, 25% were retired, and 5.6% were unemployed. Among men, 50% were retired, 21.4% were employed, 21.4% received disability benefits, and 7.1% were unemployed.

The most common diagnosis among participants was C50 (malignant breast neoplasm) at 32%, and upper inner quadrant breast neoplasm at 10.0%. When divided by gender, among women, C50 (malignant breast neoplasm) was most common at 44.4%, while among men, 14.3% had C20 (malignant rectal neoplasm) and 14.3% had C61 (prostate cancer).

Measures

Sense of Coherence Questionnaire (SOC-29): the SOC-29 (Antonovsky, 1987, 1995; Polish adaptation: Koniarek, Dudek, & Makowska, 1993) assesses global sense of coherence through 29 items rated on 7-point semantic differential scales. Three subscales measure: (1) Comprehensibility (11 items; e.g., *Do you have the feeling that you don't really care about what goes on around you?*); (2) Manageability (10 items; e.g., *When something unpleasant happened in the past your tendency was: to 'eat yourself up alive' [1] vs. to say 'ok that's that, I have to live with it' and go on [7]*); (3) Meaningfulness (8 items; e.g., *Do you have the feeling that you're being treated unfairly?*). Higher scores indicate stronger SOC. Psychometric properties from original studies: Cronbach's $\alpha = 0.84\text{-}0.93$ across cultures (Antonovsky, 1993). Polish validation: $\alpha = 0.88$ (Koniarek et al., 1993). Recent Polish study: $\alpha = 0.91$ (Baczewska et al., 2023). Current sample: $\alpha = 0.87$ (total), $\alpha = 0.79$ (comprehensibility), $\alpha = 0.74$ (manageability), $\alpha = 0.71$ (meaningfulness).

Table 1. *Characteristics of participants according to selected socio-demographic variables*

Variable	Group	*n*	%
Gender	Falmale	36	72.0
	Male	14	28.0
Age	*M* = 57.80, *SD* = 10.64, *Min* = 35, *Max* = 79		
Level of education	Vacational	10	20.0
	Secondary	12	24.0
	Higher	28	56.0
Place of residence	City up to 50.000 inhabitants	12	24,0
	City from 50.000 to 150.000 inhabitants	3	6.0
	City from 150.000 do 500.000 inhabitants	13	26.0
	Village	22	44.0
Marital status	Single	7	14.0
	Marriage	38	76.0
	Divorce	4	8.0
	Vindowhood	1	2.0
Professional activity	Unemployed	3	6.0
	Employed	28	56.0
	Retired	16	32.0
	Pensioner	3	6.0
Clinical diagnosis	C16	2	4.0
	C18	7	14.0
	C20	2	4.0
	C34	1	2.0
	C43	2	4.0
	C50	29	58.0
	C56	1	2.0
	C61	2	4.9
	C65	1	2.0
	C67	2	4.0
	C80	1	2.0

Coping Orientation to Problems Experienced (COPE): the COPE (Carver, Scheier, & Weintraub, 1989; Polish adaptation: Juczyński & Ogińska-Bulik, 2009) assesses dispositional coping strategies through 60 items rated on 4-point scales (1 = I usually don't do this at all; 4 = I usually do this a lot). Fifteen subscales measure distinct strategies including (1) Problem-focused: active coping, planning, suppression of competing activities; (2) Emotion-focused: seeking emotional support, positive reinterpretation, acceptance, denial, venting; (3) Avoidance: behavioral disengagement, mental disengagement, substance use; (4) Other: seeking instrumental support, humor, religion. Subscale scores range 4-16; higher scores indicate greater use of that strategy. Psychometric properties from original version is α = 0.62-0.92 across subscales. Polish α = 0.55-0.90 (Juczyński & Ogińska-Bulik, 2009). Current sample: α ranged 0.58-0.88 across subscales.

Mental Adjustment to Cancer Scale (Mini-MAC): the Mini-MAC (Watson et al., 1988, 1989; Polish adaptation: Juczyński, 2009) assesses cancer-specific adjustment through 29 items rated on 4-point scales (1 = definitely does not apply; 4 = definitely applies). Five subscales (1) Fighting Spirit (16 items): active, optimistic approach; (2) Positive Reappraisal (uncertain items): finding positive meaning; (3) Helplessness-Hopelessness (6 items): giving up, pessimism; (4) Anxious Preoccupation (9 items): worry, anxiety about cancer; (5) Avoidance (uncertain items): denial, minimization. Subscales can be grouped into Constructive (Fighting Spirit, Positive Reappraisal) and Destructive (Helplessness-Hopelessness, Anxious Preoccupation) adjustment styles. Subscale scores are summed and converted to sten norms. Psychometric properties from original version α = 0.64-0.85. Polish α = 0.67-0.84 (Juczyński, 2009). Current sample: α = 0.78 (constructive), α = 0.74 (destructive).

NCCN Distress Thermometer (DT): the Distress Thermometer (Holland & Bultz, 2007; Polish adaptation: Życińska et al., 2009) is a single-item visual analog scale asking patients to rate distress during the past week on a 0-10 scale (0 = no distress; 10 = extreme distress). Scores ≥4 indicate clinically significant distress requiring further assessment (Ownby, 2019). The DT includes a 36-item problem checklist covering practical, family, emotional, spiritual/religious, and physical concerns. However, for this study, only the distress rating was analyzed. Psychometric properties: Sensitivity: 0.81, specificity:

0.85 for detecting distress (Jacobsen et al., 2005). Polish validation: acceptable psychometric properties (Życińska et al., 2009).

Sociodemographic and Clinical Questionnaire: a researcher-designed form collected: age, gender, education, residence, marital status, employment, cancer type/stage, time since diagnosis, current treatment.

Statistical Analysis

To describe the obtained results, means and standard deviations, minimum and maximum values were used. Group homogeneity was tested using the chi-square test, and the distribution shape was verified using the Shapiro-Wilk test. For normal distribution, significance was accepted at the level of $p>0.05$. To examine whether there is a relationship between individual stress coping strategies, the level of acceptance of cancer disease, and the level of perceived distress and sense of coherence in cancer patients, non-parametric Spearman's rho tests were applied. This choice was dictated by violations of normality in the distribution of the analyzed variables. Analyses were conducted using SPSS 28.0 (IBM Corp., Armonk, NY).

3. Results

3.1. Sense of coherence and stress coping styles in cancer patients

The results obtained by the participants on the sense of coherence scale SOC-29 (Table 2) and cancer coping styles COPE (Table 3) are presented below.

Participants demonstrated predominantly low SOC levels (Table 2). Both women and men scored low on overall SOC, meaningfulness, and manageability. Men achieved average comprehensibility levels; women scored low. Men obtained higher mean scores than women across all SOC dimensions, though differences were not statistically tested due to sample size.

Table 2. *Sten scores for sense of coherence*

Gender	Female		Male		Female	Male
	M	*SD*	*M*	*SD*	Sten	Sten
Comprehensibility	4.31	2.04	5.79	2.72	low	average
Manageability	3.42	1.16	3.50	1.70	low	low
Meaningfulness	3.14	1.44	3.29	1.33	low	low
SOC	3.00	1.39	3.93	2.02	low	low

Regarding cancer coping styles (Table 3), men scored higher on both constructive and destructive styles than women. Sten scores indicated high levels for men in both styles; women scored average on constructive and high on destructive styles.

Table 3. *Sten scores for constructive and destructive styles of coping with cancer*

Gender	Female		Male		Female	Male
	M	*SD*	*M*	*SD*	Sten	Sten
Constructive	6.69	1.22	7.43	1.45	average	high
Destructive	7.17	1.03	7.57	1.34	high	high

The cancer coping traits of Anxious Preoccupation and Helplessness-Hopelessness are components of the destructive style of coping with stress. Fighting Spirit and Positive Reappraisal, however, are components of the constructive style of coping with stress. In terms of mean values, men achieved higher scores in both constructive and destructive styles of coping with cancer than women. Sten valuesproved to be high for men in bothtraits, whileamongwomen, the sten value for constructive style proved to be average, and for destructive style, high (Table 3).

3.2. Relationship between individual stress coping strategies, level of psychological adjustment to cancer, and level of perceived distress and sense of coherence in cancer patients

The relationships between sense of coherence and individual stress coping strategies (Table 4), level of adjustment to cancer (Table 5), and level of perceived distress (Table 6) in cancer patients are presented below.

Table 4. *Relationship between individual stress coping strategies in cancer patients and sense of coherence*

	Comprehensibility		Manageability		Meaningfulness	
	rho	*p*	*rho*	*p*	*rho*	*p*
Active coping	0.15	0.306	0.02	0.868	-0.04	0.804
Planning	0.20	0.158	005	0.752	0.14	0.348
Seeking intrumental social support	-0.06	0.660	0.06	0.702	0.02	0.876
Seeking emotional social support	0.06	0.679	008	0.602	-0.12	0.402
Avoiding competing activities	-0.15	0.311	-0.19	0.189	-0.01	0.970
Turning to religion	-0.10	0.507	-0.18	0.219	0.06	0.657
Positive reevaluation and development	0.11	0.447	-0.13	0.374	0.08	0.592
Refraining from action	-0.17	0.231	-0.12	0.418	-0.08	0.593
Acceptance	**-0.32**	**0.025**	-0.17	0.251	0.06	0.663
Concentraction on emotions ond their release	0.03	0.844	0.11	0.431	0.01	0.498
Denial	0.08	0.588	**0.29***	**0.043**	0.09	0.515
Distraction	0.20	0.155	**0.29***	**0.044**	0.11	0.436
Cessation of action	-0.17	0.242	0.06	0.686	0.01	0.938
Consumption of alkohol or other psychoactive substances	-0.10	0.475	0.14	0.332	-0.05	0.745
Sens of humor	0.22	0.121	,070	0.630	0.24	0.093

The conducted analyses did not reveal statistically significant relationships between stress coping strategies and sense of coherence. However, significant moderate relationships were demonstrated between sense of coherence

subscales, namely Comprehensibility, and the stress coping strategy of Acceptance (Table 4). This relationship is negative, meaning that a higher level of acceptance is accompanied by lower comprehensibility and vice versa. The analysis also revealed a weak positive relationship between the sense of coherence scale of Manageability and stress coping in the scales of Denial and Distraction, which means that in uncontrolled situations, emotion-focused and avoidance strategies gain greater significance, and the use of these strategies is associated with a higher level of sense of manageability and trust in the resources possessed by the individual.

Table 5. *Relationship between the level of psychological adjustment to cancer and sense of coherence*

	Comprehensibility		**Manageability**		**Meaningfulness**	
	rho	*p*	*rho*	*p*	*rho*	*p*
Anxious preoccupation	0.19	0.197	0.12	0.426	-0.09	0.547
Fighting spirit	0.10	0.490	-0.14	0.347	0.01	0.930
Helplessness-hopelessness	0.16	0.272	**0.32**	**0.025**	0.00	0.981
Positive reevaluation	-0.06	0.658	-0.24	0.098	-0.20	0.160

- Comprehensibility (zrozumiałość)
- Manageability (zaradność)
- Meaningfulness (sensowność)

The analyses did not reveal statistically significant relationships between the level of psychological adjustment to cancer and sense of coherence (Table 5). There is a weak positive relationship between Manageability and Helplessness-Hopelessness. This means that the fundamental controllability of the participants (their life manageability) in the crisis situation of cancer diagnosis and subsequent cancer treatment is associated with a sense of helplessness among the studied individuals.

Table 6. *Relationship between the level of distress experienced by cancer patients and sense of coherence*

	Level of distress	
	rho	*p*
Comprehensibility	0.08	0.594
Manageability	0.22	0.129
Meaningfulness	-0.05	0.723

The analyses did not reveal a relationship between the level of distress experienced by cancer patients and sense of coherence (Table 6). This may indicate that distress and its intensity may depend on other personality or situational variables not related to sense of coherence.

Hypothesis Testing

H1: SOC and Coping Strategies: table 4 presents correlations between SOC dimensions and COPE subscales. Contrary to broad H1 predictions, most correlations were non-significant. However, significant relationships emerged: Comprehensibility and Acceptance: rho = – 0.32, p = 0.025 (moderate negative correlation); Manageability and Denial: rho = 0.29, p = 0.043 (weak positive correlation); Manageability and Distraction: rho = 0.29, p = 0.044 (weak positive correlation). Higher comprehensibility paradoxically associated with lower acceptance scores. Higher manageability associated with greater use of denial and distraction strategies.

H2: SOC and Psychological Adjustment to Cancer: table 5 shows correlations between SOC dimensions and Mini-MAC subscales. One significant relationship emerged: Manageability and Helplessness-Hopelessness: rho = 0.32, p = 0.025 (moderate positive correlation). Higher perceived manageability paradoxically associated with greater helplessness-hopelessness.

H3: SOC and Distress: table 6 presents correlations between SOC dimensions and distress. No significant correlations emerged (all p > 0.05). Contrary to predictions and previous literature, SOC did not correlate with distress intensity in this sample.

H4: Differential Dimensional Patterns: partial support emerged for H4. While comprehensibility, manageability, and meaningfulness did not show

dramatically different patterns, manageability demonstrated unique associations with emotion-focused and avoidance coping (denial, distraction) as well as helplessness-hopelessness adjustment. Comprehensibility uniquely (negatively) correlated with acceptance.

4. Discussion

The present study examined relationships between sense of coherence and psychological adaptation processes in cancer patients, specifically exploring associations with coping strategies, disease acceptance, and distress levels within a salutogenic theoretical framework. Regarding the first objective concerning sense of coherence and coping relationships, the findings revealed significant correlations with specific coping strategies, particularly acceptance, denial, and distraction, rather than demonstrating the hypothesized broad patterns of adaptive versus maladaptive coping approaches. In addressing the second objective related to sense of coherence and adjustment relationships, a significant association emerged between the manageability dimension and helplessness-hopelessness, though notably, other adjustment dimensions did not yield significant relationships as anticipated. The third objective investigating sense of coherence and distress relationships produced unexpected results, as no significant correlations between sense of coherence and distress emerged in the present sample, a finding that stands in contrast to both the study's hypotheses and the broader existing literature in this domain.

The negative correlation between comprehensibility and acceptance (rho = – 0.32) appears counterintuitive but may reflect measurement and conceptual complexities. In the COPE, *acceptance* is defined as *learning to live with* the stressor, which differs from the Mini-MAC's acceptance constructs. Higher comprehensibility – understanding cancer as a structured, explicable challenge – may actually reduce passive resignation captured by COPE acceptance items, instead promoting active problem-solving (Antonovsky, 1987).

This interpretation aligns with Antonovsky's (1995) distinction between adaptive acceptance (recognizing unchangeable realities while maintaining engagement) versus maladaptive resignation (passive surrender).

High-comprehensibility individuals may resist *merely accepting* cancer, viewing it as a challenge requiring active response. This finding underscores the importance of distinguishing acceptance conceptualizations across measures (Hayes et al., 2006; Lindsay & Creswell, 2017).

The positive correlations between manageability and denial (rho = 0.29) and distraction (rho = 0.29) also seem paradoxical. Theoretically, high manageability should predict problem-focused coping, not avoidance (Antonovsky, 1987; Lazarus & Folkman, 1984). However, in the acute cancer context, these relationships may reflect adaptive short-term regulation. Carver and colleagues (2010) distinguish strategic denial – temporarily setting aside overwhelming realities to preserve functioning – from pathological denial. Similarly, constructive distraction (e.g., engaging in pleasant activities) differs from rumination (Nolen-Hoeksema, 2000).

Cancer patients with higher manageability may strategically employ denial and distraction to manage acute overwhelm while preserving resources for long-term coping (Greer et al., 2010). This interpretation aligns with recent dual-process models suggesting effective adaptation involves flexible oscillation between confrontation and avoidance depending on situational demands (Stroebe & Schut, 2010).

Alternatively, these unexpected correlations may reflect the sample's acute distress state. Table 2 shows predominantly low SOC scores, suggesting participants were in crisis. Under extreme stress, even high-SOC individuals may resort to emotion-focused strategies when problems genuinely exceed current coping capacity (Lazarus, 1999).

Cancer is conceptualized as a potentially critical life event that significantly disrupts the equilibrium of an individual's functioning within their environment, thus requiring adaptation to new, altered life circumstances. The disease exceeds patients' existing adaptive capacities, affecting all spheres of individual functioning. The study group presents as individuals in a state of hopelessness, crisis aroused by confrontation with direct life threat and mortality, particularly vulnerable to suffering and unable to cope appropriately. The participants appear to focus on accumulating resources to survive treatment.

Referring to Antonovsky's salutogenic concept, the results confirmed that sense of coherence as a whole conditions effective coping, and the lack of individual conviction about possessing adequate resources causes a decline in sense of meaningfulness, consequently weakening efforts to cope with a given situation. Typically, in difficult situations, individuals with high sense of coherence employ constructive, flexible coping strategies. These considerations find confirmation in research conducted by various authors (Delgado-Guay et al., 2011; Lam et al., 2012).

Research examining the relationship between meaning in life and sense of coherence with suffering in cancer patients demonstrated significant negative associations with distress in cancer patients, where the relationship between meaning in life (MiL) and suffering was moderate, while the relationship between SOC and suffering was large. The results proved consistent with Antonovsky's model, confirming that cancer patients with high levels of coherence experience less stress, and the ability to rely on their own resources allows them to flexibly approach difficult situations, particularly by appropriately matching coping strategies. This enables these patients to maintain good well-being despite stressful events.

Contemporary research has further validated the importance of sense of coherence in cancer care contexts. Studies investigating the mediation/moderation effect between coping behaviors and sense of coherence in predicting health-related quality of life in breast cancer patients have demonstrated significant relationships. Research has shown that women with strong SOC reported fewer stressful events and more days without stressful events, used more coping strategies and more frequently employed distraction, situation redefinition, direct action, and relaxation.

The mediating role of coping strategies has been particularly emphasized in recent literature. Studies have demonstrated that coping mediates the relationship between sense of coherence and mental quality of life in patients with chronic illness, with sense of coherence having both direct and indirect effects on mental quality of life mediated by emotion-focused coping, problem-focused coping, and coping efficiency.

Simultaneously, these studies revealed no relationship between sense of coherence and distress in terms of variables such as age, gender, ethnicity,

disease stage, and time since diagnosis. The above research confirmed the significance of SOC for the mental health of cancer patients, which is also reflected in the research conducted for the purposes of this article. This conclusion also applies to research results concerning sense of coherence and distress in cancer patients and their partners (Nordin &Glimelius, 2007), which confirmed the assumption that high sense of coherence is a supporting and health-protecting factor in situations of severe stress, including serious illness. Strong sense of coherence is assumed to promote and protect health in stressful situations, such as a serious illness.

However, cancer as a traumatic situation characterized by a high degree of unpredictability and strong anxiety-provoking potential may cause patients to use non-constructive strategies and trigger reactions recognized as defensive mechanisms. In this context, one should consider the type of cancer, prognosis, stage and type of treatment, as well as the phase of disease and patient adaptation to it. Antonovsky in his concept treats sense of coherence as a relatively stable construct or global orientation toward life, however, research has shown a decrease in sense of coherence after traumatic events such as severe multiple trauma without neuropsychological deficits (Nilsson et al., 2010; Snekkevik et al., 2003).

The psychological adjustment patterns observed in this study align with findings from MINI-MAC scale research. Studies have shown that the degree of adaptation to cancer, evaluated with the mini-Mental Adjustment to Cancer scale, reveals that the presence of metastases causes resignation, a sense of helplessness and hopelessness, with metastatic patients showing higher average scores for maladaptive strategies. The mini-Mental Adjustment to Cancer Scale has been recognized as a well-established, popular measure of coping in psycho-oncology, assessing five cancer-specific coping strategies that can be grouped into overarching adaptive and maladaptive categories.

The participants examined for the purposes of this article obtained mostly low results on the sense of coherence scale, both among women and men, which may serve as a starting point for further research, particularly those expanded with qualitative studies such as interviews, providing insight into the specificity and dynamics of cancer disease. The conducted analyses did not reveal a relationship between the level of distress experienced by cancer

patients and sense of coherence. These results do not find confirmation in previously conducted research concerning correlations between sense of coherence and experienced distress (Delgado-Guay et al., 2011; Lam et al., 2012; cf. Sarenmalm et al., 2013).

The reasons for the results obtained in this study regarding distress may be attributed to the small sample size. Additionally, the Distress Thermometer is a screening tool, and the results obtained constitute an indication and starting point for in-depth studies according to specific stressors. A broader and more accurate picture could also be provided by studies expanded to include cancer type and location, as well as the aforementioned qualitative studies.

The current findings contribute to the growing body of evidence supporting the clinical relevance of sense of coherence interventions in cancer care. Sense of coherence, a key concept in the theory of salutogenesis, influences the pathway to promote or maintain health, suggesting that psycho-oncological interventions focusing on strengthening patients' sense of coherence may be beneficial for improving psychological adaptation and reducing distress.

4.1 Conclusions

The analysis of the conducted research allowed for the following conclusions:

Sense of coherence as a whole conditions the undertaking of actions aimed at effectively coping with the critical event of cancer disease, and the lack of individual conviction about possessing adequate resources causes a decline in sense of meaningfulness, consequently weakening efforts to cope with the given situation.

The level of sense of coherence is significant for effective coping with cancer-related stress and conditions the adoption of specific coping strategies by cancer patients. A higher level of comprehensibility, emphasizing the aspect of permanent cognitive assessment capacity, enables the patient to create a critical and conscious image of their own disease, taking into account possible consequences of the disease in all areas it affects. This contrasts with the emotional attitude that everything will work out and uncritical acceptance, which may become a cause of additional trauma.

The level of sense of coherence is significant for psychological adjustment to cancer disease. This means that the life manageability of the studied individuals in the crisis situation of cancer diagnosis and subsequent treatment is associated with a sense of helplessness among the participants. The disease situation assessed as burdensome and threatening to well-being evokes in patients the conviction of inability to rely on their own resources. Consequently, the lack of individual conviction about possessing adequate resources causes a decline in sense of meaningfulness, and subsequently weakening efforts to cope with the given situation.

The level of sense of coherence has no significance for the level of distress experienced by cancer patients. This may indicate that distress and its intensity may depend on other personality or situational variables not related to sense of coherence.

4.2 Clinical Implications

The obtained results can be utilized to construct preventive programs, develop psychoeducational programs and guidebooks addressing psychological problems in cancer disease, targeted to specific groups.

Furthermore, the research results may complement standard therapeutic actions in terms of specific psychotherapeutic interventions aimed at developing constructive disease coping strategies, as well as achieving higher sense of comprehensibility and level of cancer acceptance, consequently reducing distress levels and achieving greater patient engagement in the treatment process.

The research results may become an element of education not only for cancer patients themselves, but also for psychologists, psycho-oncologists, physicians, and other members of multidisciplinary teams engaged in systemic care of cancer patients, directly contributing to improving the quality of oncological care and patient well-being.

When discussing groups to whom the developments of these studies may be addressed, including education, social campaigns, and workshops, one cannot omit individuals from the closest environment of patients affected by cancer diseases, whose presence and actions are crucial factors in the disease coping process (Heszen, 2013).

4.3 Limitations and Future Plans

First and foremost, the studied group is too small to draw conclusions about the demonstrated patterns for the entire population. The obtained results could be supplemented with qualitative research, including interviews, providing insight into the specificity and dynamics of cancer disease, as well as becoming a contribution to conducting broader research in the analyzed area, particularly considering a larger number of study participants, cancer type and location, disease stage, prognosis, and treatment type.

The Distress Thermometer is a screening tool, and the results obtained constitute an indication and starting point for in-depth studies according to specific stressors. In-depth studies could provide a broader picture and allow defining the relationship between distress and its intensity with other personality or situational variables not related to sense of coherence.

Areas not included in the present study but worthy of exploration include: the relationship of the studied variables relative to the degree of cancer advancement in the studied individuals and relative to the applied treatment method. It would also be worthwhile to conduct extended analyses exploring the area of meaning-focused coping, which serves as a starting point for the concept of post-traumatic growth (Heszen, 2013; Tedeschi & Calhoun, 2004).

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