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ORIGINAL ARTICLE

Functional and Dysfunctional Coping Strategies in Patients Diagnosed with Cancer – From Initial Assessment to Therapeutic Interventions

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Abstract: *The assessment of coping mechanisms in patients diagnosed with oncological diseases is essential for mental health specialists, who have to design the most appropriate case management strategy for comorbid mood disorders, anxiety disorders, adjustment disorders, and other psychiatric conditions that may be detected in this vulnerable population. The adequate treatment of these disorders is important for the preservation of mental health status, quality of life, and overall functionality in patients diagnosed with cancer. Coping mechanisms modulate the vulnerability toward psychiatric disorders, but they also have an impact on treatment adherence, which is an important factor correlating with prognosis. Appraisal-focused, problem-focused, emotion-focused, and occupation-focused coping represent the most well-defined strategies patients use when confronted with a stressful life situation, like a diagnosis with potentially vital consequences. Maladaptive coping strategies may also be identified in these patients, e.g., withdrawal from reality, including complete or partial denial of the disease, substance abuse, behavioral addictions, refusal of the recommended treatment, etc. The psychotherapeutic approach in patients with oncological diseases should include an initial evaluation of the coping strategies used either currently or in the past stressful conditions, an assessment of all the psychosocial resources the patients have (e.,g., support group, professional insertion, hobbies), and screening for mood and anxiety disorders that may have been triggered by the cancer diagnosis. Consequently, within the psychotherapeutic framework, a trained specialist can enhance the role of adaptive coping strategies and highlight the disadvantages of dysfunctional ones. This process may possess a favorable impact on treatment adherence, mental health status, and quality of life in patients with cancer.*

Keywords: *coping mechanisms, treatment adherence, quality of life, cognitive behavioral therapy, executive functions*

INTRODUCTION

Coping mechanisms are defined as thoughts and behaviors activated when finding a solution to either internal or external stressful situations is required [1]. These triggers may vary from different feared situations, a perceived lack of control over own impulses, or difficult life decisions (when internal events are taken into consideration), to physically traumatic stimuli, imposed changes in lifestyle, or interpersonal stressors (when external events are the focus of attention). Combined, internal and external triggers, may exist, as in severe physical conditions, such as oncological diseases, when the diagnosis, the treatment, the stigma, and the overall functionality (personal, familial, social, and professional) are all affected.

A traditional difference exists between the „coping mechanisms", which are conscious and voluntary, and the „defense mechanisms", which are psychodynamically-based constructs, and by their definition unconscious. Coping mechanisms represent sets of structured, stable responses that have a well-defined adaptive function [1]. Defense mechanisms, on the other hand, have as their purpose to disguise internal impulses, in order to protect the Ego; therefore they operate outside the sphere of the conscious mind [2-5]. However, not all authors agree with the

assumption that all defense mechanisms are unconscious, because of examples like suppression or humor, which involves, at least partially, a participation of the Ego [6-8]. At any rate, it is considered that defense mechanisms act as „conscious suppression", and this may be observed in interpersonal relationships [2].

There are many classifications of coping mechanisms because these psychological processes are numerous and quite diverse, therefore different authors group them according to more or less arbitrary criteria [9-15]. One example of such a classification has as its core criterion the targeted stressor(s), and includes (1) reactive coping – the individual responds to a certain stress factor; people who activate this type of coping have presumably better adaptive skills in an unstable environment with many hard-to-predict stressors; (2) proactive coping – the individual activates behaviors/thoughts aimed at neutralizing the effects of anticipated stressors; people who activate this coping perform better in a stable environment with routine tasks [1,16].

Another classification of coping mechanisms includes (a) problem-focused strategies – address the origin of the discomfort, and these may be manifested as active coping, planning, restrictive coping (not acting prematurely, holding back until a good opportunity to act appears), and inhibition of concurrent activities; (b) emotion-focused strategies – targeting the decrease of negative emotions correlated with the ongoing stressor, e.g., positive reframing, acceptance, recourse to religion, and humor; (c) meaning-based strategies, i.e., extraction and management of the meaning the stressful situation has for an individual in a certain moment; (d) social or support-based strategies, which refer to the ability of stress reduction by seeking emotional or behavioral support from the group to which that person belongs [1,17].

The coping mechanisms mentioned above are „adaptive" processes, but there is also a category of „maladaptive" coping strategies [18]. It is supposed that problematic coping may develop in the early stages of conscious life when individuals have to face overwhelming stressors like maltreatment, abuse, or neglect [18]. For example, the excessive activation of primitive coping strategies, lack of modeling for healthy coping alternatives, and repeated exposure to intense stressors in the immediate environment are potential factors that may increase the individual's vulnerability to the development of maladaptive coping strategies [18]. These coping mechanisms are associated with a negative evolution of mental health problems and more severe levels of psychopathological manifestations [1]. Examples of maladaptive or dysfunctional coping are represented by disengagement (defined by efforts to move away from the stress triggers), emotional suppression (i.e., inhibition of emotional reactions), cognitive avoidance (manifested by distraction, worry, and thought suppression), and denial (i.e., the unwillingness to accept reality) [19-21].

The role of maladaptive coping mechanisms in psychopathology has been explored intensively, and conditions like posttraumatic stress disorder, anxiety disorders, depressive disorders, psychosomatic disorders, and somatoform disorders have all been correlated with avoidance-based coping or other maladaptive strategies [1]. The situation of treatment or diagnostic refusal in patients with psychiatric disorders, but also in those presenting with different organic illnesses, including cancer, has been associated with maladaptive coping (i.e., denial) [21].

The rationale for exploring coping mechanisms in patients with oncological and other severe diseases is the need to understand better the psychological strategies activated by patients in stressful situations and to work with these strategies during psychotherapy. One aspect of this process is to allow for the formation of a more solid therapeutic relationship, by exploring the adaptive strategies. Other objectives that may involve coping mechanisms are the training of functional coping skills and helping patients to deconstruct the dysfunctional ones.

There is an additional aspect for exploring these mechanisms in patients with cancer, and it refers to the risk of psychiatric comorbidities. As can be anticipated, this diagnosis, as well as the associated treatment and prognosis, may lead to the onset of adjustment disorders, depressive disorders, stress-related pathology, etc. Many authors are highlighting the need for identifying and treating depression in this specific population because this would have a favorable impact on the quality of life and mortality [22-24]. Cases of major depressive disorders (MDD) have frequently been detected in patients with cancer, reaching prevalences of 2-43.5% [22-24]. The importance of coping mechanisms derives from their impact on the evolution of clinical manifestations and therapeutic responses in patients with MDD [25]. A study exploring this impact concluded that maladaptive mechanisms, mainly ruminating, catastrophizing, and self-blaming were the most frequently used by patients with depression [25]. Accepting the current situation, positive refocusing and re-evaluation are functional coping mechanisms, with a protective role in these patients, and these strategies can be used during the psychotherapeutic process [25].

In another study, the importance of coping strategies for resilience was evaluated in patients with panic disorder [26]. The severity of clinical manifestations and maladaptive coping skills decreased during cognitive-behavioral therapy (CBT) administered in a group format [26]. CBT also had beneficial effects on increasing resilience and quality of life in patients

with panic disorder, thus highlighting the role of psychotherapy in modulating the influence of coping mechanisms on daily functioning, besides its positive clinical impact [26].

Adjustment disorders illustrate the failure of coping mechanisms' functionality in preserving a safe distance toward stressful stimuli' negative impact [27]. Also, acute stress reactions and posttraumatic stress disorder are consequences of coping strategies failure, but in these cases, the stressors represent vital threats [27]. Psychotherapy in these cases targets enhancing coping abilities with the specific stressor and increasing the adaptive responses [28]. This is usually done by identifying negative thoughts and replacing them with more adaptive thoughts (i.e., cognitive restructuring), monitoring the experiences aimed at increasing self-efficacy, and behavioral activation [28-30].

FROM CONCEPTUAL ANALYSIS TO CLINICAL SITUATIONS – AN ANALYSIS OF HOW THE COPING MECHANISMS FUNCTION IN SPECIFIC SITUATIONS

As mentioned in the introductory chapter, coping mechanisms are usually activated in stressful situations, and configuring the individual profile of these mechanisms allows the therapist to represent the specific vulnerability features and the resilience factors to stressful situations, like a vital threat raised by a cancer diagnosis. The presentation of several theoretical situations is considered helpful for a better understanding of how the coping mechanisms may work in clinical settings. For example, when a patient finds out that she has been diagnosed with early-stage breast cancer, she may engage in seeking information about this disease and/or making an appointment for further investigations (which implies active, problem-focused coping); also, she may decide to join a self-help group for patients with the same diagnosis (i.e., a coping based on social support), or she may look for spiritual support from a priest (defining a coping based on recourse to religion). However, continuously looking for information that may invalidate the oncological diagnosis, by exploring different online resources, or by repeated medical consultations in the hope of finding a doctor willing to offer another diagnosis, is a maladaptive coping strategy based on denial. In the case of a patient with prostate cancer who has already been investigated by collecting all the necessary laboratory analyses (prostate biopsy included) and by undergoing all imagistic investigations required, the delay of treatment initiation is caused by his lack of trust in the results of these investigations. Due to this maladaptive coping strategy, the treatment initiation is delayed, and the prognosis may worsen.

Another example is represented by a woman with breast cancer who has undergone a total mastectomy and developed a depressive disorder because she refuses to accept her new body image. As a manifestation of her depression, she does not want to consult a mental health specialist, thus activating a coping strategy based on denial and avoidance.

Yet another typical situation is when a person who goes through a divorce caused by health and financial problems ends up consuming alcohol excessively, to suppress his/her negative emotions. This way of facing the specific life situation is characterized by disengagement and avoiding confrontation with own emotions, i.e., two types of maladaptive coping.

On the other end of the coping mechanisms spectrum, a person who has to retire prematurely due to an oncological disease (now in remission, but with several negative functional consequences) may go initially through an adjustment disorder caused by the recent change of the daily activity regime, but then she/he resignifies the situation and considers that she/he has more free time to spend with own family. This is an example of active coping, planning, and coping based on significance because the individual perceives her/himself as a survivor of the disease and focuses on future prospects.

Of particular importance for understanding how coping mechanisms work, is the exploration of the strategies activated and the solutions each patient has found when confronted previously with difficult situations, such as interpersonal conflicts, social isolation, work conflicts, economic difficulties, and severe illnesses [31].

NEUROBIOLOGICAL FOUNDATION OF COPING MECHANISMS AND THE STRUCTURED APPROACH TO THEIR CLINICAL ASSESSMENT

The prefrontal cortex, responsible for executive functioning (i.e., planning, analysis and synthesis, abstracting, problem-solving, verbal fluency, etc.), and the nucleus accumbens, which is part of the reward system or the mesocorticolimbic circuit, have been associated with the functioning of the coping mechanisms [32,33]. These central nervous system (CNS) structures are sensitive to chronic stress, and disruptions in the functioning of the prefrontal cortex have negative consequences on the ability to perform complex cognitive tasks [32,33]. Executive functions, including cognitive flexibility, planning, inhibitory control, error detection, working memory, and verbal fluency, are largely dependent on the morphological integrity and functionality of the prefrontal cortex [34-39]. These functions are essential for constructing coping mechanisms, their preservation or inhibition, and mediating the relationship between coping strategies and different psychiatric disorders, such as MDD [34,35]. It was even demonstrated that interventions targeting the enhancement of executive functions and/or coping

mechanisms are useful in decreasing the risk of MDD recurrence [34]. Executive functions have a role in increasing the risk of suicidality by mediating the relationship between high levels of stress and avoidant coping, therefore enhancing executive functioning through computerized training and cognitive rehabilitation may reduce the impact of stressors on individuals [35]. Also, executive dysfunction and mnestic impairments were associated with lower use of active coping mechanisms in patients with schizophrenia, highlighting the important correlations existing between these variables [39].

The activity of the hypothalamic-pituitary-adrenocortical axis (HPAA) and the plasma level of cortisol have no confirmed direct effect on coping mechanisms, but they may influence intermediate variables with impact on, or associated with, these mechanisms [33,40,41]. Such mediators are depressive mood, anxiety, insomnia, psychomotor restlessness, and attentional and memory deficits [33,40,41]. For example, in a study (N=30 participants), the presence of MDD was correlated with a higher level of morning serum cortisol vs. healthy individuals, and an inverse correlation between these levels and the frequency of activated prosocial coping mechanisms was observed [42].

Serotonergic and dopaminergic pathways in the CNS are responsible for modulating mood, strengthening/decreasing certain behaviors, and influencing memory and attention [43-48]. The prefrontal cortex, hippocampus, and corpus striatum, which are involved in cognition, are densely populated by dopaminergic and serotonergic neurons originating within the raphe complex, mesocortical, and nigrostriatal systems [43,49]. Processes like learning and memory depend on the modulation of serotonergic and dopaminergic activity and imply short- and long-lasting synaptic modifications [43]. Modulation of serotonergic and dopaminergic pathways using pharmacological agents, as is the case with MDD and schizophrenia spectrum disorders, can influence not only the core clinical symptoms of these disorders but, indirectly, may modulate the coping mechanisms [50-53].

The impact of vasopressin and oxytocin on psychological mechanisms that are important for the modulation of coping strategies was also explored [54,55]. These pituitary neuropeptides are responsible for shaping social behavior, aggression, and social memory, according to preclinical studies [54,55].

Data about the importance of vasopressin and oxytocin in humans also emerged recently, and functional neuroimaging studies showed that impaired operation of these neuropeptides appears in mental disorders that imply an early attachment disruption or difficulties in forming social relationships, such as autism spectrum disorders (ASD), social anxiety disorder, borderline personality disorder, and schizophrenia spectrum disorders (SSD) [55].

In conclusion, the biological foundation of cognition is extremely complex, and the adequate functioning of the cognitive processes (as a prerequisite for the operational coping mechanisms) depends heavily on the integrity of multiple neurotransmission and neurohormonal pathways.

The assessment of coping mechanisms is conducted by mental health specialists trained in using validated instruments. Besides the general evaluation, based on a psychological interview targeting current mental status and personal history, the specialists may use various scales, inventories, and questionnaires constructed and validated for this purpose.

Brief-COPE is a 28-item, self-administered instrument that quantifies functional and dysfunctional coping methods in stressful situations [56]. It is often used in clinical settings to assess how patients cope with stressors such as cancer diagnosis, heart failure, trauma, and mental and behavioral disorders [56]. Based on interpreting this questionnaire's results, psychological counseling strategies may be formulated [56]. Brief-COPE evaluates three types of coping: (1) problem-focused – includes the following dimensions: active coping, planning, suppression of competing activities, restraint coping, and seeking instrumental social support; a high score indicates coping strategies aimed at changing stressful situations, psychological stability, a pragmatic approach and is a positive prognostic factor; (2) focused on emotions – includes seeking social support, positive reinterpretation, acceptance, denial, and appeal to religion; high scores indicate strategies aimed at regulating stress-related emotions; (3) avoidant – includees emotional venting, behavioral disengagement, mental disengagement; a high score suggests physical or cognitive disengagement efforts, low scores suggest adaptive coping [56-61]. The original COPE inventory included 15 dimensions, each with 4 items [57,62]. However, this form was criticized because the number of factors differed across studies, varying from 3 to 5, it was considered too long, and the distinction between its dimensions was not supported by further analyses [57].

The most frequently used tools for evaluating coping mechanisms, besides the COPE and Brief-COPE, according to a meta-analysis, are the Ways of Coping Questionnaire, Coping Strategies Questionnaire, Coping Response Inventory, Coping Strategies Inventory, Adolescent Coping Scale, Pain Coping Questionnaire, Religious COPE, and Utrecht Coping List [63]. The same source mentioned that coping scales are often used for the structured assessment of patients with various health problems, such as illnesses, pain, and medical diagnoses [63].

COPING MECHANISMS IN PATIENTS WITH ONCOLOGIC DISEASES

Coping mechanisms influence the decision-making process regarding participation in treatment and implicitly shape the evolution and prognosis of the condition. The same mechanisms impact the patient's desire to be informed about their own illness, their perception of self-efficacy, their relationship with others during the illness, etc. The main coping mechanisms identified in a study (N=603 patients with cancer) were (1) seeking or using social support, (2) focusing on the positive aspects of life, (3) distancing, (4) cognitive avoidance/cognitive abandonment, and (5) behavioral avoidance/behavioral abandonment [64]. This study concluded that the type of oncological disease, the time elapsed since the diagnosis of the disease, and the presence of treatment correlated non-significantly with the type of coping [64]. The stress perception associated with the oncological condition correlated significantly with the activation of coping based on social support, but also with cognitive and behavioral disengagement [64]. Coping based on social support, focusing on the positive, and distancing were all associated with less emotional distress, while cognitive/behavioral withdrawal was associated with more emotional distress [64].

The relationship between coping strategies, quality of life, and mood in patients with incurable oncological conditions was investigated in a randomized trial of palliative care, that enrolled patients with advanced stages of lung or gastrointestinal cancer (N=350), who were in the first 8 weeks after the diagnosis was confirmed [65]. All main outcomes were assessed in a structured way, and the most frequently detected coping mechanism was emotional support (77%), followed by acceptance (49%), self-blame (38%), and denial (28%) [65]. Coping based on emotional support was significantly associated with better quality of life and less severe depressed mood [65]. In the same study, acceptance correlated significantly with better quality of life and inversely with depression and anxiety, denial and self-blame correlated significantly inversely with quality of life and non-significantly with depression and anxiety [65]. The study's authors concluded that interventions aimed at improving the quality of life and mood of these patients should include increasing the use of adaptive coping strategies [65]. It also may be stated that patients with incurable forms employ different coping mechanisms than those with oncological conditions presenting a favorable prognosis [65]. The explanation is that the emotional burden and severity of physical symptoms create a different setting for activating coping mechanisms in the two population subgroups [65].

Types of coping activated by patients with breast cancer predict long-term psychological adjustment, according to the results of a study that explored the strategies for facing difficulties related to this diagnosis in a group of 55 patients [66]. Coping mechanisms, decisional control, expression of frustration, and psychological adaptation in the first 6 months after finding out the diagnosis were assessed initially and after 3 years [66]. Patients who were initially depressed and who responded to finding out the diagnosis with cognitive avoidance (acceptance/resignation) showed significantly less chance of psychological adjustment 3 years later [66]. The poor psychological adjustment was significantly associated with cognitive avoidance and minimal activation of proximity/ contact-based coping [66].

The relationship between quality of life and coping mechanisms was evaluated in women extensively treated for advanced-stage genital cancer (N=64) [67]. A control group included women with genital cancer in the early stages, who consequently received less aggressive treatment [67]. The main stressors in the study group were the adverse effects of chemotherapy, poor physical condition, and poor prognosis [67]. Using the COPE inventory to assess coping mechanisms, it was observed that avoidance and engagement were the dominant strategies in patients with severe forms of cancer [67]. Also, these patients presented more frequently both types of coping (commitment/avoidance) vs. patients in the control group [67]. Avoidant coping strategies correlated with more negative mood and poorer overall well-being, while avoidance and seeking instrumental support were associated with worse prognosis in patients with severe forms of cancer, but not in those with early forms [67]. Thus, coping mechanisms have a stronger impact on prognosis in patients with severe forms of genital cancer [67]. Avoidant coping strategies in particular may adversely affect the quality of life and mood in this population [67].

The predictive value of coping mechanisms in patients who were diagnosed with stage I or II breast cancer no more than 12 months ago was the objective of a longitudinal study that included 70 patients [68]. This study explored the abilities of these patients to activate situational-specific coping mechanisms and hope (considered a more stable factor), as predictors of adaptation after finding out their diagnosis [68]. Active acceptance-based coping at the moment of diagnosis predicted better adjustment over time in this population, while avoidance-based coping correlated with greater fear of cancer recurrence, independent of the patient's initial medical condition and age [68]. Religion-based coping proved more effective for women who had a lower initial level of hope [68]. The conclusion of the study was that protective and risk factors for adaptation in first-year breast cancer survivors can be identified even before surgery [68]. Mood characteristics, such as hope, as well as situation-specific coping strategies, must be

considered by the case manager [68].

Optimism was explored as a variable mediated by coping strategies in patients with breast cancer in the early stages, in a study with 59 participants [69]. The level of optimism was determined one day before surgery, 10 days after it, and 3-, 6-, and 12 months post-surgery [69]. Acceptance-based coping, positive reframing, and religion were the most frequently activated strategies, and optimism correlated inversely with the level of distress at each of the study visits [69]. Denial and behavioral disengagement were the least frequently activated coping strategies in this population [69]. In conclusion, optimism and pessimism are mediated by the activation of different coping mechanisms in the adaptive process and they have an important role in favoring or hindering this process [69].

The correlation between coping strategies and psychological distress was investigated in patients with advanced stages of cancer [70]. In such a study, that enrolled 132 patients diagnosed with breast, ovarian, lung, colorectal, and other types of cancer, a correlation between distancing, cognitive avoidance, and behavioral abandonment, on the one hand, and psychological distress, on the other, was demonstrated [70]. Distancing coping correlated negatively with psychological distress, while cognitive and behavioral avoidance correlated positively with the same distress [70]. Overall, coping methods explained 36% of the variation in the level of psychological distress [70]. The most important coping mechanism contributing to psychological distress was behavioral avoidance, followed by cognitive avoidance [70].

Emotional expressive coping has predictive value for physical and mental adjustment to breast cancer diagnosis, according to a prospective, 3-month study (N=92 participants) [71]. Active processing of emotions is a coping mechanism based on promoting emotional contact, that favors adaptation and health status [71]. Women who reported emotional expression-type of coping had fewer visits to the doctor for cancer-related symptoms, had better physical health and energy levels, and had lower levels of distress over the next 3 months compared to patients who had less emotional expression [71]. Quality of life was also better in patients with emotionally expressive coping [71].

MDD, personality disorders, and coping strategies were studied as moderators of the quality of life in patients with non-metastatic breast cancer [72]. A cross-sectional study included 120 patients diagnosed with breast cancer 7 months ago, and the main outcomes were quality of life, coping strategies, biological and physiological variables, presence of MDD and personality disorders, and pain severity [72]. Poorer physical quality of life was associated with MDD, younger age, more severe initial tumor stage, and behavioral disengagement coping [72]. A lower emotional quality of life was associated with MDD, the presence of a personality disorder, more severe pain, a high level of self-blame, and a lower use of acceptance-based coping [72]. Also, lower global quality of life was associated with MDD, the presence of a personality disorder, more intense pain, high levels of self-blame, less use of reframing coping strategies, and the absence of hormone therapy [72]. In conclusion, lower quality of life was associated with premorbid patient characteristics (personality disorder) and coping variables (depression, personality, and specific strategies), less so with cancer-related variables (type of treatment, disease severity) [72].

TRAINING OF THE COPING MECHANISMS IN ONCOLOGICAL PATIENTS

Psychotherapy and psychological counseling in patients diagnosed with severe organic illnesses have, between their objectives, the enhancement of functional coping mechanisms and the reduction of maladaptive ones, in order to enhance resilience to stressful situations (e.g., pain, invalidity, changes in lifestyle, adverse events of drugs). Coping skills training programs have been associated with improving some biological and psychosocial parameters in patients with chronic somatic conditions [73]. For example, a decrease in HbA1c levels and an increase in self-efficacy have been observed in patients with diabetes after applying a coping skills training program [73]. The same programs led to increased self-care capacity in diabetic patients, decreased the severity of depressive symptoms, improved the prognosis of chronic obstructive pulmonary disease (COPD), and ameliorated the quality of life in individuals with various somatic conditions [73]. The training of these skills involves lectures, Q&A sessions, group discussions, role-plays, etc., under the direction of a clinical psychologist/psychotherapist; nurses trained for this purpose can also lead such support groups [73]. The topics addressed are the principles of effective self-care, stress management, communication skills training, cognitive-behavioral restructuring techniques, and problem-solving techniques [73].

A brief coping skills training program for oncology patients was designed to increase the patient's feelings of self-efficacy, personal control, and resilience to stress [74]. Applied in the perioperative framework, this program was created for nurses, and they were trained on how to enhance the patient's trust in their own abilities to manage dysfunctional cognitions and behaviors [74]. This training was used to prepare the patients for solving situations or events that may occur before or after surgery [74]. Providing information, education, emotional support, and specific interventions – adapted to the

objectives of each individual case, were part of this brief training [74]. Relaxation based on breathing, cognitive restructuring, mindfulness, goal setting, and motivational interviewing may be part of more comprehensive training [74].

Encouraging caregivers of oncology patients to participate in the training of coping mechanisms is considered an important aspect of case management. A study that included 233 patients with lung cancer and their relatives compared two interventions – 14 telephone sessions of coping skills training assisted by a relative vs. education/support with the help of a relative [75]. Patients in both groups showed improvements in anxiety and self-efficacy during the 4-month follow-up [75]. However, family-assisted coping skills training has been associated with better outcomes in patients with stage II or III cancer [75]. Caregiver-assisted education/psychological support was more effective in patients with stage I lung cancer [75].

The effects of coping skills training on caregivers of oncological patients were also explored. Such a study enrolled 70 participants and looked at the effects of coping skills training on the quality of life in daughters of patients with breast cancer [76]. The intervention consisted of an educational program, with workshop-type lectures, followed by group discussions [76]. Relatives' quality of life was considerably improved by this intervention, according to Pediatric Quality of Life Inventory scores [76]. Physical, and emotional functioning and participation in school activities were improved vs. the control group [76].

Particular aspects of adaptive strategies training depend on the specific elements of oncological conditions. The approach in a psychotherapeutic setting to patients with cancer must include the training of coping skills, depending on the particularities of each case. It is essential for the therapist to work with the patient in identifying the stress factors that activate coping mechanisms: self-image changing (e.g. mastectomy, limb amputation), reduced mobility, adverse effects of chemotherapy and radiotherapy (e.g. alopecia, persistent vomiting, swallowing disorders, sexual dysfunctions), lifestyle changes (eg, colostomy, indwelling urinary catheter), physical pain, psychiatric symptoms/ disorders – depression, anxiety, restlessness, insomnia, apathy, anhedonia, etc.

Therapeutic interventions may be focused on the activation of functional coping mechanisms, based on action and social support, e.g. looking for a support group for patients who have undergone similar surgical interventions; planning activities based on the spared skills; analyzing the pros and cons of correcting deficits (prosthetics, plastic surgery); re-signification of the situation, e.g. post-operative scars are an indicator of the battle with the disease and of the fact that the person has overcome it, assuming the state of "survivor" or "victor"; creating an optimal framework for expressing emotions, concerns, fears related to the new situation in which the person finds him/herself, dysfunctions of the social image, self-image, and relationships with those close to the patient, decreased professional functioning, etc.; encouraging acceptance of the present situation and redirecting resources towards functional, healthy aspects of own life; acceptance does not mean resignation; adding non-pharmacological methods to drug pain therapy – mindfulness, progressive muscle relaxation, diaphragmatic breathing, guided imagery, planning hobby activities; specific techniques for augmenting the effect of medication in depressive, anxiety, adaptation disorders, insomnia, etc., e.g., cognitive restructuring in depression and anxiety, aversive therapy or relaxation techniques in insomnia, guided imagery and activity planning for isolated affective/anxiety symptoms, etc.

CONCLUSIONS

Coping mechanisms in patients diagnosed with oncological diseases have an important role in preserving mental health, quality of life, and general functionality. Coping mechanisms modulate the vulnerability towards mood and anxiety disorders in patients diagnosed with cancer, but these mechanisms also have an impact on therapeutic adherence, thus representing important factors that correlate with prognosis. The best-defined functional coping strategies are those centered on realistic assessment, problem-solving, emotion-expression, and occupational activation, therefore it is recommended that the therapist train these healthy mechanisms in patients with severe organic diseases.

Coping resources activated in stressful life circumstances include the participation of family or friends, recourse to religious rituals, at least partial maintenance of professional roles whenever possible, and self-help therapy (online sessions, organized groups, etc.).

In oncology patients, maladaptive coping strategies can also be identified, for example, withdrawal from reality, including complete or partial denial of the disease, substance abuse, behavioral addictions, treatment refusal, requesting the administration of insufficiently validated treatments not recommended by a specialist, etc.

The psychotherapeutic approach to patients with cancer should include an initial assessment of coping strategies used both now and in the past under stressful conditions, an evaluation of the psychosocial resources that patients have previously activated in life-threatening situations, and a screening for mood, stress-related, and anxiety disorders that

may have been triggered since the onset of the current illness (Figure 1).

Figure 1: The algorithm for assessing and training coping mechanisms in patients with cancer

After this stage, a psychiatric consultation may be recommended, if necessary (acute psychiatric pathology, the need for pharmacological treatment). The initiation of psychological counseling, psychotherapy, and, in specific cases, psychopharmacological treatment may be prescribed, depending on the results of the initial evaluation. Monitoring the mental health status by using standardized tools, and planning follow-up visits to update patients' knowledge and coping skills learned is necessary. The psychotherapeutic intervention should be focused on increasing adaptive coping through systematic training and highlighting the disadvantages of dysfunctional coping mechanisms. This therapeutic process can have a significant favorable impact on treatment adherence, mental health status, and quality of life in patients with cancer

Further research on this topic should investigate the impact of structured coping skills training programs on more homogenous populations, such as patients with a certain type of oncological disease and in a specified stage of the disease's evolution [77-79]. Of major interest would be the exploration of combined therapeutic interventions in this population, and also the assessment of the impact different types of surgical interventions may have on mental health and quality of life [77-83]. As a limitation of this review, it should be mentioned that it was not designed as a systematic approach to this topic, its immediate purpose is to enhance the awareness of mental health specialists about the importance of assessing and addressing during therapy the important aspect of coping strategies.

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Authors' contribution

OV conceived the idea of the review. OV, AGM, BMP, CAC, CFP and REBB designed the study. OV, CFP, REBB, AFF, MCP, CAS and CN screened the studies and abstracted the primary sources. OV, AGM, BPM and CAS drafted the first version of the review. OV, CAC, CFP, AFA, MCP and CAS revised the manuscript and elaborated the conclusions of the review. All authors had full access to all data contained in the review and decided to submit the manuscript for publication.

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