

Original Research

# The Relationship of Coping Mechanisms with Anxiety Levels in Cancer Patients

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Article Info	Abstract
<p>Receive: 18-06-2025 Revised: 29-06-2025 Accepted: 03-07-2025</p> <p>*Appropriate Author: Rahmat Hidayat Nursing Science, Faculty of Public Health, Indonesian Muslim University Email: rahmathidayat@umi.ac.id</p>	<p><b>Background:</b> Cancer is one of the chronic diseases that not only affects physical conditions, but also causes severe psychological stress. One of them is anxiety, anxiety in cancer patients can arise from receiving a diagnosis, during treatment, to facing the uncertainty of the prognosis.</p> <p><b>Objective:</b> The purpose of this study was to determine the relationship between the coping mechanism and the level of anxiety in cancer patients.</p> <p><b>Methods:</b> This study was conducted quantitatively with a cross sectional approach using questionnaires to measure coping mechanisms and anxiety levels, this study involved 60 cancer patients undergoing treatment in hospitals.</p> <p><b>Results:</b> The results of the analysis showed that most respondents (36.7%) used adaptive coping mechanisms but still experienced mild to severe anxiety. The Chi-Square test showed a weak association between coping mechanisms and anxiety levels (<math>p = 0.004</math>) suggesting that regardless of the relationship, adaptive coping has not been fully effective in lowering anxiety.</p> <p><b>Conclusion:</b> Researchers recommend the development of educational programs and psychological assistance to address anxiety and can explore other factors that may affect cancer patients' anxiety.</p> <p><b>Keywords:</b> Anxiety; Cancer; Coping Mechanism</p>

## Introduction

Globally, it is estimated that there are Nearly 20 million new cancer cases and about 9.7 million cancer deaths in 2022, and the WHO-IARC projections predict that the increase will reach 35 million cases by 2050 marking a surge of almost 77% since 2022. (IARC, 2024) At among the types of cancer, Lungs and breasts ranked highest in terms of incidence and death rate in the world.

The highest cancer prevalence is in Asia at 49.2%. (IARC/WHO GLOBOCAN, 2022) Based on Riskesdas data in 2013, the prevalence of cancer in Indonesia was 1.4%, in 2018 the prevalence of cancer increased to 1.79%, and in 2023 it will be 1.2%, while the prevalence of cancer in South Sulawesi itself is 1.59%. (Health Research and Development Agency of the Ministry of Health of the Republic of Indonesia, 2013) (Basic Health Research (Riskesdas), 2018) (Indonesian Ministry Of Health Development Policy Board, 2023) With the increasing prevalence of cancer, it is important to investigate how cancer may affect patients' anxiety levels.

In the diagnostic and treatment stages of cancer, patients often experience high levels of anxiety, with about half of metastatic cancer patients reporting symptoms of anxiety or depression. (Yuliani *et al.*, 2023) This condition not only impacts quality of life, but can also interfere with response to treatment and increase long-term morbidity. Social support, relaxation, and coping techniques, such as journaling, creative therapy, and physical activity, has been suggested as an effective way to reduce anxiety, so it is important to understand which coping strategies are truly positive in the context of cancer patients in Indonesia. Stress is defined as the worry felt by a person that is triggered by actions that are too intense and are often carried out beyond one's ability and resources to manage stress. Effective stress management depends on a person's ability to recognize and adjust by using coping strategies. (Alanazi *et al.*, 2023)

Based on the theory of Lazarus and Folkman in Maryam S's research, it is said that the state of stress experienced by a person will have unfavorable effects both physiologically and psychologically. The individual will not allow these negative effects to continue to occur, and will be overcome by the actions taken called the coping strategy. (Maryam, 2017)

Coping is a thought and behavior that is mobilized to manage internal and external stressful situations. When a person is faced with stress, the various ways to deal with it are also called "coping

styles" which are a set of relatively stable traits that determine an individual's behavior in response to stress.(Bunga and Komara, 2021) Patients who use maladaptive coping mechanisms are more likely to engage in health-risking behaviors compared to those who have proper coping mechanisms. Coping can affect patients to therapy and the course of the disease through lifestyle changes.(Emad B. Algorani; Vikas Gupta, 2023)

Recent research shows that problem-focused coping (PFC) is able to mediate the relationship between stress and anxiety, depression, and quality of life in advanced cancer patients in Indonesia.(Huda *et al.*, 2021) However, most studies still ignore the role of moderators such as social support and self-efficacy, although studies in China in lung cancer patients show that good social support improves adaptive coping and quality of life.(D) *et al.*, 2024) Coping Focused Emotions is an act of reducing the psychological distress posed by stress, including managing emotional responses to stressors without addressing the stressor itself.(Ta'an *et al.*, 2024). In addition, psychological interventions such as mindfulness and psychoeducation have also been shown to reduce anxiety and improve adaptive coping skills.(Handayani and Afyanti, 2023) This research is important for researchers to be interested in identifying the types of coping strategies used for anxiety levels in cancer patients.

## Method

### Study Design

This study is a quantitative research using a descriptive study with a cross-sectional approach.

### Samples/Participants

The sample in this study is all types of cancer patients with the number of samples involved in this study as many as 60 patients. The sampling technique uses a non-probability sampling method with a purposive sampling technique based on certain criteria set by the researcher. Inclusion Criteria include cancer patients who have been diagnosed with cancer and include all types of cancer, patients aged 20-65 years, cancer patients with anxiety, patients willing to engage in research, patients undergoing active treatment and cancer patients with certain stages (I,II,III,IV). Exclusion criteria include patients with serious mental disorders, cancer patients with loss of consciousness and patients who are unable to communicate well.

### Instruments

This study uses an instrument adopted by Tiyas Priyanti, namely BRIEF-COPE for a coping mechanism with a likert scale totaling 28 questions with 4 scales 1 (Never), 2 (Rare), 3 (Often), and 4 (Always) with indicators of confiding, active coping, self-disturbance, denial, substance use, use of emotional support, behavioral disengagement, positive reframing, planning, humor, acceptance, religion and self-blame. The BRIEF-COPE instrument itself already has a reliability test with a Cronbach Alpha result of 0.885.(Priyanti and Hudiawati, 2021) For the instrument to assess the level of anxiety using the HARS adopted by Rismawan with a likert scale amounting to 14 questions with 4 scales of 0 (No Anxiety), 1 (Mild Anxiety), 2 (Moderate Anxiety), 3 (Severe Anxiety), 4 (Panic) with indicators of feelings of anxiety, feelings of tension, feelings of fear, sleep disorders, intelligence disorders, depressive disorders, somatic (muscle) disorders, cardiovascular symptoms, respiratory symptoms, gastrointestinal symptoms, urogenital symptoms, autonomic symptoms and behavioral symptoms. The HARS instrument itself already has a reliability validity test with Cronbach Alpha 0.793.(Rismawan and FAP, 2020)

### Data Collection

This study was conducted for 1 month at Ibnu Sina YW-UMI Makassar Hospital in three treatment rooms where there were all types of cancer patients and information was obtained from the head of the room or the implementing nurse in the treatment room. In the process of this research, it consists of 2 people, namely the research coordinator with the task of compiling a research plan, setting a schedule, allocating resources, ensuring that the research runs well and communicating with other research teams, then the research assistant helps in collecting respondent data according to predetermined criteria. The first data collection process is through communication to the nurse of patients diagnosed with cancer, the type of cancer experienced and the room, then respondents who meet the criteria are given informed consent and an interview process is carried out with cancer patients who experience anxiety.

### Data Analysis

This study uses the type of Chi-Square statistical test to determine the significant relationship between variables, the Chi-Square test itself provides a methodologically appropriate approach to test the hypothesis, especially in this study whether there is a relationship between the coping mechanism and the anxiety level of cancer patients. This test ensures that the analysis is on target and the results are statistically supported by correlations between the category variables in this study.

## Ethical Considerations

In carrying out all research activities, the researcher has received approval from the UMI Health Research Ethics Committee (KEP) with NUMBER: 675/A.1/KEP-UMI/XII/2024 Register No.: UMI 012411779. Based on the results of the reviewer's examination, the UMI Research Ethics Committee Board provides Approval/Ethical Recommendations for the implementation of the research.

## Result

### Univariate Analysis (Respondent Characteristics)

Table 1 shows that the characteristics of respondents with female gender are higher than those of men with a total of 54 people (90.0%). Based on the age characteristics in this study, 21 people (35.0%) were found in early adulthood compared to late adolescents, early adulthood, late adulthood and late elderly. Based on educational characteristics, most of them are at the high school education level, totaling 27 people (45.0%) compared to basic, junior high and tertiary education. Based on job characteristics, the majority of those who did not work with a total of 53 people (88.3%) compared to those who did. Based on family income, most of them are at the income level of Rp.<3,500,000 with a total of 46 people (76.7%) compared to income of more than Rp.≥3,500,000. Based on the characteristics of the cancer stage, most of the stage 1 with a total of 37 people (61.7%) compared to stages 2, 3 and 4. Based on the characteristics of the type of cancer, the majority of patients with Ca Mammae amounted to 21 people (35.0%) compared to other types of cancer such as ovarian ca, cervical ca, ca colon, ca lung ca ca and ca endometrium.

Table 1 Results of Distribution of Respondent Characteristics in Patients  
Cancer at Ibnu Sina YW-UMI Hospital Makassar

Characteristic	Sum	
	Frequency (n)	Percentage (%)
<b>Gender</b>		
Man	6	10.0
Woman	54	90.0
<b>Age</b>		
Late Teens (17-25 years old)	3	5.0
Early Adult (26-35 years)	5	8.3
Late Adult (36-45 years)	14	23.3
Early Elderly (46-55 years old)	21	35.0
Late Elderly (56-65 years old)	17	28.3
<b>Education</b>		
SD	14	23.3
JUNIOR	16	26.7
SMA	27	45.0
University	3	5.0
<b>Work</b>		
Work	7	11.7
Not Working	53	88.3
<b>Family Income</b>		
< 3,500,000	46	76.7
≥ 3,500,000	14	23.3
<b>Stage of Cancer</b>		
Stage 1	37	61.7
Stage 2	12	20.0
Stage 3	9	15.0
Stage 4	2	3.3
<b>Types of Cancer</b>		
Ca Mammae	21	35.0
Ca Ovary	16	26.7
Cervix	12	20.0
Ca Colon	2	3.3
Lung disease	3	5.0
Ca Endometrium	6	10.0
<b>Entire</b>	<b>60</b>	<b>100%</b>

Source: SPSS Processed Data, 2025

Distribution of respondent frequency and anxiety levels

Table 2 shows the frequency of respondents based on those who are not anxious amounting to 27 respondents (46.7%).

**Table 2 Results of respondent frequency distribution by level anxiety in cancer patients at Ibnu Sina YW-UMI Makassar Hospital.**

Anxiety	n	%
Not anxious	27	46.7
Mild anxiety	15	25.0
Moderate anxiety	15	25.0
Severe anxiety	2	3.3
<b>Entire</b>	<b>60</b>	<b>100</b>

Source: SPSS Processed Data, 2025

Frequency distribution of coping mechanism

Table 3 shows the results of the frequency of respondents based on the maladaptive coping mechanism of 31 (51.7%) respondents.

**Table 3 Results of Respondent Frequency Distribution Based on Coping Mechanism in Cancer Patients at Ibnu Sina YW-UMI Makassar Hospital**

Coping mechanism	n	%
Maladaptive	31	51.7
Adaptive	29	48.3
<b>Entire</b>	<b>60</b>	<b>100</b>

Source: SPSS 2025 Processed Data

Bivariate Analysis

Table 4 shows the results of the analysis of the Chi Square test which obtained a p value of 0.004 which means less than  $<0.05$  meaning that  $H_0$  is rejected and  $H_a$  is accepted so that it can be concluded that there is a significant relationship between the coping mechanism variables and the level of anxiety in cancer patients at Ibnu Sina YW-UMI Makassar Hospital.

**Table 4 The Relationship Between Coping Mechanisms and Anxiety Rates in Cancer Patients**

Group	Anxiety Level				Entire	<i>p-value</i>	
	Not anxious		Anxious (mild, moderate, severe)				
Coping mechanism	n	%	n	%	n	%	
Maladaptive	20	33,3	11	18,3	31	51,7	0,004
Adaptive	7	11,7	22	36,7	29	48,3	
Entire	27	45,0	33	55,0	60,0	100,0	

Source: SPSS 2025 Processed Data

## Discussion

Based on the results of the above statistics, there is a relationship between the coping mechanism and the anxiety level of cancer patients. Unresolved anxiety and depression are often associated with an increase in symptoms so effective management of anxiety and depression is essential to improve the physical and mental well-being of patients. (Calvo-Schimmel *et al.*, 2025) Putri Dwi Azizi said that in her research, the coping mechanism itself is determined by each individual in solving problems, adapting to changes, and responding to the situations they face. Problem-Focused Coping (PFC) is a form of coping that is more geared towards reducing the demands of stressful situations, meaning that coping is focused on individual problems that will cope with stress by learning new skill ways. Individuals tend to use this strategy when they believe that the demands of the situation can be changed, such as seeking social support. (Putri Dwi Azizi, Yosi Oktarina, 2023)

In this study, it was found that most patients use adaptive coping strategies but it was still found that patients still experience either mild, moderate or severe anxiety as much as (36.7%) because it can be caused by the type of cancer experienced by the patient, even though the patient uses the adaptive coping strategy but if the type of cancer experienced is more serious, aggressive or difficult to treat it will cause anxiety even though the patient tries to adapt by managing coping with good. Patients who used

maladaptive coping in this study were found to still have patients who experienced anxiety, this is because there are some patients who experience advanced stages so that they feel more depressed and anxious and are more vulnerable to switching to maladaptive coping strategies such as rejection or social isolation because they feel helpless.

In studies on coping strategies, some recent studies have shown that certain coping mechanisms are often ineffective in dealing with stress. For example, Aldao et al. (2020) suggest that avoidance strategies, such as rejection or avoidance, can worsen an individual's emotional state and prolong the duration of stress experienced. This research shows that while individuals may feel better in the short term, in the long term, these strategies can actually lead to bigger problems. Further, research by Folkman and Moskowitz (2021) emphasizes that the use of more adaptive coping strategies, such as seeking social support and focusing on solutions, can improve psychological well-being. These findings suggest that individuals who are able to identify and implement more constructive strategies tend to have better outcomes in the face of challenges. This research is in line with Aryanti Andinata's research which is well utilized such as the existence of family support and family can help patients develop adaptive coping mechanisms, so that patients can handle anxiety well. This is because a person's anxious response depends on personal maturity, understanding in facing challenges, self-esteem, and coping mechanisms used. (Andinata, Marni and Erianti, 2020)

Based on the researchers' assumptions, the coping mechanism plays an important role in influencing anxiety levels in cancer patients. The coping mechanism is a strategy that individuals use to deal with stress and challenges including cancer diagnosis. The above phenomenon suggests that the type of cancer the patient experiences plays an important role in the level of anxiety felt, although the patient tries to adapt and apply effective coping techniques, more serious, aggressive or difficult-to-treat cancers can cause deep worry and disturb a sense of calm. In the context of this study, it is important to emphasize that interventions that teach and facilitate the use of adaptive coping mechanisms can be effective strategies in reducing anxiety in cancer patients. In this study, there are several limitations faced by researchers, namely the sample size that is still limited in the treatment room so as to reduce the generalization of research findings to the wider population, standard questionnaires with a large number of questions so that respondents feel saturated with questionnaires.

## Conclusion

The conclusion of this study is that there is a link between the coping mechanism and the anxiety levels of cancer patients. Therefore, it is important for healthcare workers to identify and support the development of adaptive coping mechanisms in cancer patients to reduce the anxiety levels of cancer patients.

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