

INFORMASI ARTIKEL

Received: February, 08, 2026

Revised: April, 18, 2026

Available online: April, 22, 2026

at: <https://e-jurnal.iphorr.com/index.php/mhc>

Family support and the perception of chronic pain in patients with cancer

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Abstract

Background: Chronic pain is a common symptom among cancer patients and significantly affects quality of life across physical, psychological, and social domains. Pain perception is influenced not only by biological factors such as disease progression and treatment, but also by psychosocial factors, particularly family support. Family support plays an important role in enhancing coping mechanisms, reducing stress, and shaping patients' responses to pain. However, empirical evidence on the relationship between family support and chronic pain perception among cancer patients in Indonesia remains limited.

Purpose: To examine the relationship between family support and chronic pain perception among cancer patients.

Method: A quantitative non-experimental study with a cross-sectional design was conducted involving 30 hospitalized cancer patients selected through total sampling. Family support was assessed using the family subscale of the Multidimensional Scale of Perceived Social Support (MSPSS), while chronic pain perception was measured using the Brief Pain Inventory (BPI) Short Form.

Results: Data analysis using Somers' d test revealed a strong and statistically significant negative association between family support and chronic pain perception ($r = -0.800$; $p < 0.05$).

Conclusion: These findings underscore the importance of integrating family support into family-centered approaches for cancer pain management.

Keywords: Cancer Patients; Chronic Pain Perception; Family-Centered Care; Family Support; Nursing.

INTRODUCTION

Cancer is one of the leading causes of death in the world and is often referred to as the silent killer because it develops without obvious symptoms in the early stages, so many patients are diagnosed in advanced stages with a poor prognosis (Cherny, 2016). Globocan data in 2020 recorded 234,511 deaths due to cancer in Indonesia, with the highest contributing types of cancer including lung, breast, cervical, liver, and nasopharyngeal cancers (Oliveira, de Amorim, de Miranda, de Oliveira, Sampaio, Neto, 2025). This condition makes cancer a serious health problem that has a significant impact on the quality of life of patients. Chronic pain is one of the most common symptoms experienced by cancer patients, especially in the advanced stages (Barke, Korwisi,

Rief, 2019). Pain can arise from tumor invasion, metastasis, or side effects of therapies such as chemotherapy and radiotherapy, with complex somatic, visceral, or neuropathic characteristics (Copenhaver, Huang, Singh, Fishman, 2021; Sica, Casale, Dato, Calogero, Spada, Sagnelli, Papa, 2019). Chronic pain that is not treated optimally not only degrades physical function, but also affects the patient's psychological state, including the appearance of anxiety, depression, and an overall decline in quality of life (Valvi, Tamargo, Braithwaite, Fillingim, Karanth, 2024). The experience of pain in cancer patients is multidimensional and is influenced by the interaction of biological, psychological, and social factors, as described in the biopsychosocial

model (Ciucă, Băban, 2017; Jones, Fu, Wood Magee, Merlin, Check, McTernan, Bulls, 2023; Kulpa, Ciuba, Kosowicz, Flaga-Łuczkiewicz, Ziętałewicz, Stypuła-Ciuba, 2022). In addition to internal factors such as psychological conditions and coping strategies, external factors, particularly family support, play an important role in shaping a patient's perception of pain. Family support can provide a sense of security, increase emotional calm, and strengthen the patient's ability to cope with chronic pain (Kulpa et al., 2022). Family is the main source of support for cancer patients in undergoing treatment and managing chronic pain. Family involvement in counseling, medication and symptom monitoring contributes to patient comfort and pain management effectiveness (Filipponi, Masiero, Pizzoli, Grasso, Ferrucci, Pravettoni, 2023; Jarrossay, Paternostre, 2020; Ullgren, Tsitsi, Papastavrou, Charalambous, 2018). Studies have shown that family support is associated with pain perception and quality of life in cancer patients, although challenges are still found in family understanding and skills in pain management (Ferrell, 2019).

RESEARCH METHOD

A non-experimental quantitative design with a cross-sectional approach. This design was used to analyze the relationship between family support and perception of chronic pain in cancer patients through the measurement of both variables at a single time of data collection. The research was carried out in the Rajawali 4B inpatient room of Dr. Kariadi Semarang Hospital. Data collection was carried out in the period October - December 2025. The number of samples in this study consisted of all cancer patients who met the inclusion criteria and underwent treatment in the Rajawali 4B inpatient room during the study period. Given the limited number of patients who met these criteria, the total sampling technique was applied so that as many as 30 respondents were obtained. Inclusion criteria include patients with a cancer diagnosis who are undergoing hospitalization, are fully conscious, are able to communicate well, are

willing to be responders by signing an informed consent sheet and have family members who actively accompany them during treatment. Exclusion criteria include patients who refuse to participate, experience cognitive impairment or decreased consciousness, do not have an active family companion, and patients who are relocated or discharged before the data collection process is completed.

Family support measured using Multidimensional Scale of Perceived Social Support (MSPSS) a family subscale. The instrument consists of 12 statements on a seven-point Likert scale, where higher scores indicate a better level of family support. In this study, the analysis focused on the subscale of family support. Perception of chronic pain measured using Brief Pain Inventory (BPI) Short Form. Pain assessment uses a numerical scale of 0–10 based on the intensity of the most severe pain (Worst pain), which are then categorized into mild pain (1–4), moderate pain (5–6), and severe pain (7–10). Both instruments have gone through the process of Indonesian adaptation and are widely used in clinical research. Data collection was carried out after obtaining institutional permission and research ethics approval. Respondents who met the criteria were given an explanation of the research objectives and procedures. After signing the informed consent, respondents were asked to fill out the MSPSS and BPI questionnaires. The researcher provides assistance if the respondent needs clarification during the filling process. This research has received ethical approval from the Health Research Ethics Committee of Dr. Kariadi Semarang Hospital with number 16637/EC/KEPK-RSDK/2025. The confidentiality of respondents' identities is fully maintained, and participation is voluntary without coercion. Data analysis was carried out using SPSS software version 25. Univariate analysis was used to describe respondent characteristics, family support levels, and perception of chronic pain. Bivariate analysis was carried out using Somers' d test because both variables are ordinal scale. The significance value was set at $p < 0.05$.

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Doi: 10.56922/mhc.v5i1.2552

RESEARCH RESULTS**Table 1. Respondent Characteristics (N= 30)**

Variable	Results
Age (n/%) (Mean±SD)(Range)(Year)	(49.8±11.3)(17-75)
17–25	1/3.3
26–35	2/6.7
36–45	6/20.0
46–55	12/40.0
56–65	7/23.3
> 65	2/6.7
Marital Status (n/%)	
Unmarried	2/6.7
Marriage	19/63.3
Widow	9/30.0
Education Level (n/%)	
Not in school	2/6.7
Elementary Scholl	6/20.0
Junior High School	6/20.0
Senior High School	15/50.0
Bachelor Degree	1/3.3
Family Support (n/%)	
Moderate	5/16.7
High	25/83.3
Pain Perception	
Mild	20/66.7
Moderate	10/33.3

This table describes the characteristics of 30 respondents. The mean age was 49.8 ± 11.3 years, with a range of 17–75 years, and the majority were in the 46–55 age group (40.0%). Most respondents were married (63.3%), while 30.0% were widowed and 6.7% were unmarried. In terms of education, half of the respondents had completed senior high school (50.0%), followed by elementary and junior high school (each 20.0%), with only a small proportion having no formal education (6.7%) or a bachelor's degree (3.3%). The majority of respondents reported high family support (83.3%), while 16.7% had moderate support. Regarding pain perception, most respondents experienced mild pain (66.7%), while the remaining 33.3% reported moderate pain.

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Table 2. Relationship and Degree of Family Support with Chronic Pain Perception

Variable	Somers'd coefficient (r)	p-value
Family support with chronic pain perception	- 0.800	0.03

Bivariate analysis was carried out using *Somers' d* test because both variables are ordinal scale. The results of the analysis showed a statistically significant relationship between family support and perception of chronic pain in cancer patients ($r = -0.800$; $p = 0.03$). The value of the negative coefficient indicates the opposite direction of the relationship, where increased family support is associated with a decrease in the level of chronic pain perception. The magnitude of the correlation coefficient indicates a strong degree of relationship between the two variables. The value of the coefficient indicates a strong relationship with the negative direction. Interpretation of these results showed a meaningful role of family support on respondents' pain perception, where higher levels of family support were associated with milder levels of pain.

DISCUSSION

This study found a strong and meaningful negative association between family support and perception of chronic pain in cancer patients ($r = -0.800$; $p < 0.05$). These findings suggest that increased family support is related to a decrease in the perception of chronic pain that patients feel. These results directly answer the main goal of the study and affirm the role of family support as a significant psychosocial determinant in the pain experience of cancer patients. The characteristics of the respondents, which are dominated by the adult age group to the next, provide an important context for the results of this study. Old age is known to be associated with neurophysiological changes, a decrease in pain thresholds, as well as the accumulation of the effects of cancer therapy that can aggravate chronic pain (De Laurentis, Rossana, Andrea, Riccardo, Valentina, 2019; Juretić, 2019). In these conditions, family support is a protective factor that helps patients manage anxiety, increase their sense of security, and strengthen coping ability against long-lasting pain (Maina, 2021).

The marital status of respondents who are mostly married also has the potential to influence the perception of chronic pain through the availability of emotional and instrumental support from the partner. Previous studies have shown that supportive partner relationships are associated with lower levels of stress and better psychological adaptation in cancer patients (Gatien, Too, Cormier, 2022; Maracci, Rodrigues, Knorst, Salbego, Ferrazzo, Liedke, Marquezan, 2022). However, the literature also emphasizes that non-adaptive forms of support, such as overprotective behaviors, can reinforce catastrophizing pain and pain behaviors (Lee, Han, Ko, Kang, Byun, Son, Yoon, 2020). Therefore, the quality and form of family support are important aspects in influencing the patient's perception of pain.

The majority of respondents in this study reported high family support and perception of mild pain. These findings are consistent with research showing that family support can reduce psychological distress, improve emotional regulation, and improve adherence to pain management, which ultimately contributes to a decrease in perceived pain intensity (Adejoh, Olorunlana, Adejayan, 2021; dos Santos Ferreira, Bezerra, Oliveira, de-Quental, 2021). The perception of mild pain in most respondents did not indicate the absence of pain but rather reflected the process of adaptation to chronic pain.

Respondents' feelings of moderate pain suggest that chronic pain remains a multidimensional experience influenced by the interaction of biological, psychological, and social factors. Psychological factors such as anxiety and depression as well as social factors such as the quality of family support are known to strengthen or weaken the perception of pain (Wilson, Schreiber, Mackey, Flowers, Darnall, Edwards, Azizoddin, 2022; Yin, Wang, Gu, Bao, Shu, 2023). These findings support a biopsychosocial approach that places the perception of pain as the result of a complex interaction of various factors, rather than solely the result of tissue damage.

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In the perspective of the Roy Adaptation Model, chronic pain is seen as a focal stimulus that demands an individual's adaptive response, while family support acts as a contextual stimulus that reinforces the cognitor's coping mechanism (Nawai, 2019). The strong relationship between family support and pain perception in this study showed that family support helped patients build more adaptive meanings of pain, improve self-concept, and reinforce fashion *Interdependence*, so that the pain response that arises becomes milder.

Clinically, the findings of this study have important implications for nursing practice. Family support has been shown to have real clinical significance in modulating the perception of chronic pain, so it needs to be systematically integrated in the nursing care of cancer patients. Approach Family-Centered Care involving families in the study, education, and evaluation of pain management has the potential to improve the effectiveness of interventions and patient quality of life (Ding, Fan, Zhong, Zhang, Li, Qiao, Cui, 2024; Ghamary, Foodani, Sadeghi, Azarbarzin, 2022; Russell, Patton, Tromburg, Zwicker, Guilcher, Bultz, Schulte, 2022). These findings are also relevant for the development of services at referral hospitals, where cancer pain management still tends to focus on the medical aspect. The integration of psychosocial aspects through the optimization of family roles can be an evidence-based strategy to improve the quality of care for cancer patients with chronic pain (Branco, Ferreira, De Sousa, Trevisol, Trevisol, 2024).

CONCLUSION

Family support has a meaningful and strong relationship with the perception of chronic pain in cancer patients, where the higher the family support the patient receives, the lower the perception of chronic pain felt. The majority of respondents were aged 46–55 years, married, and well educated, with a high level of family support and generally mild pain perception. These findings confirm that family support is an important psychosocial factor in cancer pain management and needs to be systematically integrated into *family-centered care-based* nursing care in health care facilities.

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