

RESEARCH ARTICLE

Editorial Process: Submission:11/26/2024 Acceptance:05/14/2025

Modeling of Patient Needs for Fulfillment of Spiritual Health and Social Support with Anxiety Levels and Quality of Life of Cancer Patients

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Abstract

Objective: The purpose of this study was to explain the model of fulfilling basic spiritual health needs and social support with the goal of improving quality of life and alleviating the anxiety of cancer patients. **Methods:** This research is a cross-sectional study. The study population was comprised of patients with cancer at the Indonesian Cancer Foundation, Cancer Patient Shelter, and Dr. Moewardi Surakarta Hospital. The sample size was 200 respondents who were selected using the purposive sampling technique. The independent variables were spiritual health and social support. The dependent variables were the anxiety level and quality of life of patients with cancer. The instrument used was a questionnaire, and data analysis was performed using Structured Equation Modeling – Partial Least Squares test. **Results:** This study analyzed the sociodemographic traits of 200 patients with cancer, focusing on age, type of cancer, and family support. The majority of participants were female, and their companion families included children and their spouses. Most patients had breast cancer, intestinal cancer, and rare pancreatic cancers. The study found that most patients had high spiritual health (126 respondents). The majority of their family members provided good social support (188 respondents). The anxiety level of the patients was mild (92 respondents). The quality of life of the cancer patients was found to be good (150 respondents). The study found that spiritual health and social support were influential, positive, and significant, with significant t-statistic values for anxiety level and quality of life. **Conclusion:** Social support and spiritual health are essential elements of comprehensive cancer care. Both elements are crucial for enhancing coping mechanisms, quality of life, and treatment outcomes. Recognizing and supporting the spiritual well-being and social support of patients is crucial for all involved in their treatment.

Keywords: Anxiety level- cancer patient- quality of life- social support- spiritual health

Asian Pac J Cancer Prev, 26 (5), 1727-1734

Introduction

Cancer and its treatments can cause various problems in patients' lives, such as poor quality of life, as well as psychological and social issues. The patients' quality of life will decrease, including feeling pain, insomnia, and constant fatigue. This condition can cause various psychological problems, such as guilt, loneliness, anxiety, stress, and depression [1]. Cancer patients experience anxiety because of a lack of spirituality and social support. Spirituality is one's relationship with God. This is very important for the patients' well-being [2]. The behavior shown by others to make a person feel comfortable, cared for, and help if needed is known as social support [3]. Negative spiritual and social behaviors, such as feeling abandoned or punished by God, questioning God, and feeling inferior to their current condition, can lead to a

poorer quality of life and worsened physical health. A holistic approach is emphasized by the current models of spiritual care for cancer patients, which address the spiritual aspect in addition to social, emotional, and physical well-being. The current model acknowledges the importance of spirituality as a coping mechanism for cancer. Therefore, this model comprehends the complex relationship between spiritual, support, and health outcomes in cancer patients, particularly anxiety based on physical symptoms and quality of life.

In 2020, 396,000 new cancer cases and 234,000 deaths were recorded in Indonesia, according to the Global Cancer Observatory data. According to the 2018 Basic Health Research in East Java, the prevalence of cancer is higher in women than men, with the number of women being 3.5 cases per 1,000 population and men being 0.8 cases per 1,000 population. According to the Indonesian

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Ministry of Health (2022), by 2030, it is estimated that 26 million new cases of cancer will be diagnosed and 17 million of them will die [4]. The number of patients with cancer in East Java was 86,000, or 2.2 per 1,000 people, according to the 2018 Basic Health Research. Cancer can affect anyone, from children to adults [5].

The number of patients with cancer is increasing at a rate of 9.5% annually. The initial condition of their health will decrease, so this is a situation that requires the fulfillment of basic needs for oxygenation, circulation, nutrition, safety and comfort, fluids and electrolytes, activity, and exercise. The low recovery rate among patients with cancer requires the fulfillment of spiritual health needs and social support to reduce the negative impact on the patients' quality of life. Patients need a good quality of life to not slow down the treatment process. However, to date, there are no articles explaining the relationship model between the fulfillment of basic human needs for spiritual health and social support and the quality of life and anxiety levels of cancer patients.

Cancer is a general term used to describe a range of disorders characterized by abnormal cell growth that may invade or spread to other physical regions. Metastasis is the process that can cause the cancer to invade the surrounding area [5]. Metastasis in cancer patients is the main cause of death [6]. In this situation, it is necessary to describe the spiritual health and social support of patients with cancer to reduce the negative impact on quality of life. Spirituality is not only related to religion but also refers to closeness to others and the environment. Spirituality is a multifaceted entity that can be used to address life's problems [7].

The benefits of spiritual well-being include satisfaction, maintaining balance, building positive relationships, having a purpose in life, and accepting life challenges. Social support plays an important role in increasing a person's acceptance of their cancer diagnosis. This helps them to be more open to various feelings and increase their efforts in the healing process. Social support gives cancer patients more meaning in life and encourages behaviors that benefit themselves and others. This condition can be achieved if social support creates good emotional bonds with their spouses, children, family, health workers, and the environment [8]. The aim of this study was to explain the model of patient needs for spiritual health and social support, together with quality of life and the anxiety of patients with cancer.

Materials and Methods

This study used cross-sectional correlational analytics. This study measured the independent and dependent variables at one time without a subsequent evaluation. The independent variables were basic human needs for spiritual health and social support. The dependent variables were the quality of life and anxiety levels of patients with cancer. This study aimed to explain how the modeling of patient needs for the fulfillment of spiritual healthiness (X1) and social support (X2) is related to anxiety (Y1) and quality of life (Y2).

Subject

The sample population consisted of patients with cancer at the Indonesian Cancer Foundation, Cancer Shelter House Surabaya, East Java, and Dr. Moewardi Hospital Surakarta, Central Java. The population of patients with cancer in the 3 places in the past year was more than 1,000 people. If the population is > 1000 people, then the sample size should be 20-30%. Based on this calculation, the sample size in this study was 200 patients. The region was divided into 2 places, so 100 cancer patients from Surabaya and 100 patients from Surakarta were included. In this study, the non-probability sampling method of the purposive sampling type was used, namely selecting samples from among the population according to the researcher's topic (based on the inclusion and exclusion criteria). The inclusion criteria were male and female cancer patients, aged 25-55 years, all types of cancer stages 1-4, and patients receiving chemotherapy/pre-chemotherapy. The exclusions in this study were patients with cancer and complications of other diseases and patients with cancer conditions involving decreased consciousness.

Instruments

The study instruments used were based on previous open-access research. The DSES (Daily Spiritual Experience Scale) [9] and SWB (Spiritual Well-Being) [10] were modified to make the spiritual health questionnaire, social support questionnaire, HARS questionnaire for anxiety levels, and ED-5D questionnaire for quality of life. The questionnaire consisted of a Google Form to facilitate the data collection. The spiritual health questionnaire contained 36 statements, of which 35 measurements used a Likert scale, with all statements being favorable: 6 several times a day, 5 every day, 4 almost every day, 3 several days, 2 once in a while, and 1 never. This was in addition to one measurement using a Likert scale with favorable statements, where a score of 4 is as close as possible, 3 is very close, 2 is somewhat close, and 1 is not at all. This questionnaire is categorized as indicating a high spirituality if the score is 168-214, moderate spirituality if the score is 102-167, and a low level of spirituality if the score is 36-101. The spiritual health questionnaire was validated using Cronbach's alpha with a result of 0.920, indicating validity. The spirituality level questionnaire using the Daily Spiritual Experience Scale (DSES) and SWB (Spiritual Well-Being) experience scale was found to be reliable with a reliability test result of 0.95 and a Cronbach's alpha greater than or equal to zero [9]. Spiritual healthiness (X1) has 3 domains, which are the religious dimension (X1.1), individualistic dimension (X1.2), and material dimension (X1.3).

The social support questionnaire has 12 questions that use a Likert scale with all statements being favorable, where a score of 3 is always, 2 is moderate, 1 is sometimes, and 0 is never. This questionnaire is categorized as indicating good social support if the score is 25-36, adequate support if the score is 13-24, and insufficient support if the score is 0-12. The social support questionnaire had a validity test value of 0.374, meaning that it is declared to be valid, and the results of the reliability test obtained a value = 0.95,

meaning that the questionnaire was declared reliable [11]. Social support (X2) was provided to explore informational support (X2.1), emotional support (X2.2), facility support (X2.3), and evaluation support (X2.4).

The Hamilton Anxiety Rating Scale (HARS) is an instrument that can be used as a measuring tool to determine an individual's anxiety level [12]. The level of anxiety is assessed by giving a score to each component with the following conditions: 0: No symptoms, 2: Half of the symptoms, 1: Only one symptom, 3: More than half of the symptoms, 4: All symptoms. The HARS questionnaire contains three categories for level of anxiety, specifically a mild anxiety (score 1-14), moderate anxiety (score 15-30) and severe anxiety (score >30). The HARS questionnaire has been proven valid and reliable based on previous research [12, 13]. The anxiety scale (Y1) includes 14 items, specifically feelings of anxiety (Y1.1), stress (Y1.2), fear (Y1.3), sleep disorder (Y1.4), intellectual disorder (Y1.5), depression feelings (Y1.6), physical symptoms (Y1.7), somatic sensory symptoms (Y1.8), cardiovascular symptoms (Y1.9), respiratory symptoms (Y1.10), gastrointestinal symptoms (Y1.11), urogenitalis symptoms (Y1.12), autonomic symptoms (Y1.13), and behavior during the interviews (Y1.14).

The quality of life questionnaire using the EQ-5D (European Quality of Life) had 5 assessments for each category, with the best level of a score of 3, a moderate score of 2, and a worst score of 1, which the respondents were able to choose according to the conditions experienced [14]. This questionnaire categorized them as having a good quality of life if the total score was 13-15, a moderate quality of life if the total score was 9-12, and a poor quality of life if the total score was 5-8 [15]. The quality of life questionnaire using the European Quality of Life 5 Dimensions (EQ-5D) questionnaire had a Cronbach's alpha coefficient result of 0.602, which is a value above 0.600 with an index category of 0.6 - 0.8 (high), indicating that the questionnaire is reliable [16]. Quality of life (Y2) consisted of 5 components for the questions related to the ability to walk/move (Y2.1), self-care (Y2.2), usual activities (Y2.3), pain or discomfort (Y2.4), and whether they were agitated or sad (Y2.5).

Data Collection

The data collection procedure began with the researcher obtaining a license and ethical clearance through the ethical review board. The study protocol was reviewed and approved by the Adi Husada Ethical Review Board in Surabaya (approval number 850.1/ERB/STIKES-AH/IX/2024) and the Hospital Dr. Moewardi in Surakarta (ethical clearance number 2.256/ IX/ HREC/ 2024). After obtaining an ethical clearance letter, the researcher made a contract that was agreed on with the respondent. They also provided written informed consent to obtain the sociodemographic data. The research team helped enter the respondent data according to the questionnaire using a Google Form to measure the patient needs on spiritual health and social support, as well as to measure the anxiety levels and quality of life of the patients with cancer.

Data Analysis

Data analysis is the process of responding to the data, as well as sorting, organizing, and processing the data systematically and meaningfully so the obtained data is valid. The demographic data of the patients with cancer has been presented descriptively. The data on the research variables was statistically tested using Structured Equation Modeling – Partial Least Squares test (SEM-PLS 3) [17] to form a model of patient needs related to fulfillment in terms of their spiritual health and social support. This also looked at the anxiety levels and quality of life of the cancer patients.

Results

Demographic Data

An outline of the respondents' sociodemographic traits based on the information gathered from the distribution of questionnaires to 200 cancer patients is presented in Table 1. It was found that the cancer patients were a minimum of 22 years old and a maximum of 88 years old, with a history of cancer starting from 1 month until 78 months (6.5 years). The majority of cancer patients were female (127 respondents; 63.5%), and the latest education obtained was elementary school (105 respondents; 52.5%). The type of cancer differed. The first type was breast cancer for 69 respondents, second type was intestinal cancer for 22 respondents, and the data found that 3 patients had a rare type of cancer or pancreatic cancer. The two highest-ranked family members who accompanied the patients with cancer were their children and spouse (husband). Additionally, 80 cancer patients (40%) were undergoing chemotherapy and 8 patients needed a transfusion for treatment.

Modeling of Patient Needs Fulfillment among Patients with Cancer

Based on Table 2, this study found that most cancer patients have a high level of spiritual health, totaling 126 respondents (63 %). Their families gave them social support: most had good social support, totaling 188 respondents (94%). The anxiety of cancer patients showed that most had a mild level of anxiety (92 respondents; 46%). Regarding quality of life for cancer patients, it was found that most had a good quality, totaling 150 respondents (75%).

The outer model validity test was done before performing the structural model testing to determine whether there was a marked connection between the variables. The inner model must first look for mark loading factors that are considered deep enough to matter and they must have a minimum value of 0.7 [18, 19]. The test results are shown in Figure 1 (Loading Factor Model) and Figure 2 (Modeling the Structure of Patient Needs Fulfillment). Based on the pictures, it is known that regarding the loading factors of spiritual health, social support, anxiety level, and quality of life, most of the indicators are worth more than 0.7 except for being religious (x1.1) (0.464). After excluding the religious loading factor, most indicators for anxiety level (Y1) and quality of life (Y2) are more than 0.7, except for

Table 1. Demographic Data of Cancer Patients (n=200)

Variable	Min-Max	Mean \pm SD
Age	22-88	54.42 \pm 13.148
History of cancer diagnosis (months)	Jan-78	9.55 \pm 13.615
Category		
Sub	Frequency (F)	Percentage (%)
Gender		
Male	73	36.5%
Female	127	63.5%
Latest Education		
Elementary	105	52.5%
Junior High School	32	16.0%
Senior High School	54	27.0%
Higher Education	9	4.5%
Type of Cancer		
Sigmoid Cancer	3	1.5%
Breast Cancer	69	34.5%
Nasopharyng Cancer	9	4.5%
Ovarium Cancer	6	3.0%
Servix Cancer	12	6.0%
Uterus Cancer	4	2.0%
Lung Cancer	6	3.0%
Bone Cancer	7	3.5%
Colon Cancer	17	8.5%
Prostat Cancer	9	4.5%
Lymphoma	7	3.5%
Hepatoma	3	1.5%
Cardiac Sarcoma	2	1.0%
Intestinal Cancer	22	11.0%
Bladder Cancer	17	8.5%
Pancreatic Cancer	3	1.5%
Leukemia	4	2.0%
Companion Family		
Parent	11	5.5%
Spouse	62	31.0%
Sibling	19	9.5%
Child	101	50.5%
Grandchild	7	3.5%
Cancer Therapy		
Chemotherapy	80	40.0%
Drugs	28	14.0%
Surgery	24	12.0%
Surgery, Radiation	40	20.0%
Radiotherapy	20	10.0%
Transfusion	8	4.0%

fear (Y1.3), intellectual disorder (Y1.5), and respiratory symptoms (Y1.10). The most powerful domain factor of spiritual health (X1) was domain X1.3, with a value of 0.817. The most powerful domain reflecting the social

Table 2. The Frequency of Spiritual Health, Social Support, Level of Anxiety, and Quality of life (n=200)

Variable	Sub	Frequency (F)	Percentage (%)
Spiritual Health	High	126	63.0%
	Moderate	74	37.0%
Social Support	Good	188	94.0%
	Adequate	12	6.0%
Level of Anxiety	Severe	68	34.0%
	Moderate	40	20.0%
	Mild	92	46.0%
Quality of Life	Good	150	75.0%
	Moderate	49	24.5%
	Poor	1	0.5%

Table 3. Final Result of Path Coefficient

Hypothesis	T-statistics	P-values
Spiritual Health (X1) à Anxiety Level (Y1)	10.329	0.000*
Spiritual Health (X1) à Quality of Life (Y2)	2.401	0.017*
Social Support (X2) à Anxiety Level (Y1)	1.029	0.015*
Social Support (X2) à Quality of Life (Y2)	3.018	0.003*

*significant p-value \leq 0.05

support variable (X2) was domain X2.4, evaluation with a value of 0.926. The most influential domain of the variable quality of life (Y2) was Y2.4, which became a priority with a value of 0.854.

Based on Figure 2 and Table 3, the known variables of spiritual health and social support are influential, positive, and significant. This is proven by spiritual health toward anxiety level having a t-statistic value of 10.329, which is greater than 1.98 (p-value of 0.000) and by spiritual health toward quality of life, where the t-statistic has a value of 2.401, which is greater than 1.98 (p-value of 0.017). Social support for anxiety level (p-values of 0.015) and social support toward quality of life amount to 3.018, which is greater than 1.98 (p-value of 0.003).

Discussion

This study has examined the model for fulfilling basic spiritual health needs and social support, showing that both influence anxiety level positively and significantly, improving the quality of life of cancer patients. When their spiritual health is high and they have good social support from their family members, it helps patients decrease their anxiety level and improve their quality of life. Cancer is an extremely insidious disease that affects not only the physical health of patients but also their mental, emotional, and spiritual well-being [20]. Concerns regarding physical health, changes to their normal development, emotional or mental health issues, and social problems are increasingly

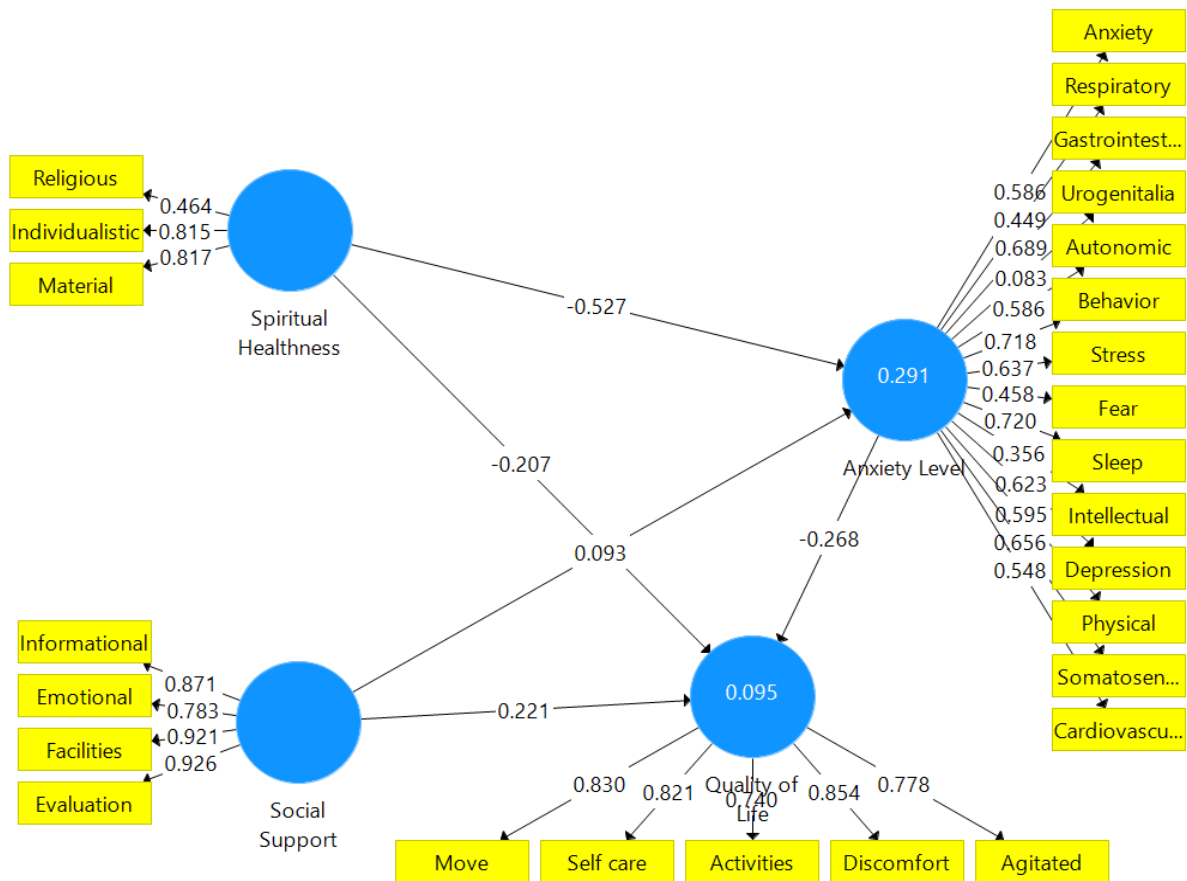


Figure 1. Loading Model_Patients Need a Fulfillment Factors Spiritual Health_Social Support_Anxiety Level_Quality of Life

being identified, and cancer has become a disease that has all the hallmarks of a chronic condition requiring ongoing

long-term management [21, 22]. Psychosocial care is a holistic cancer care approach that addresses the social,

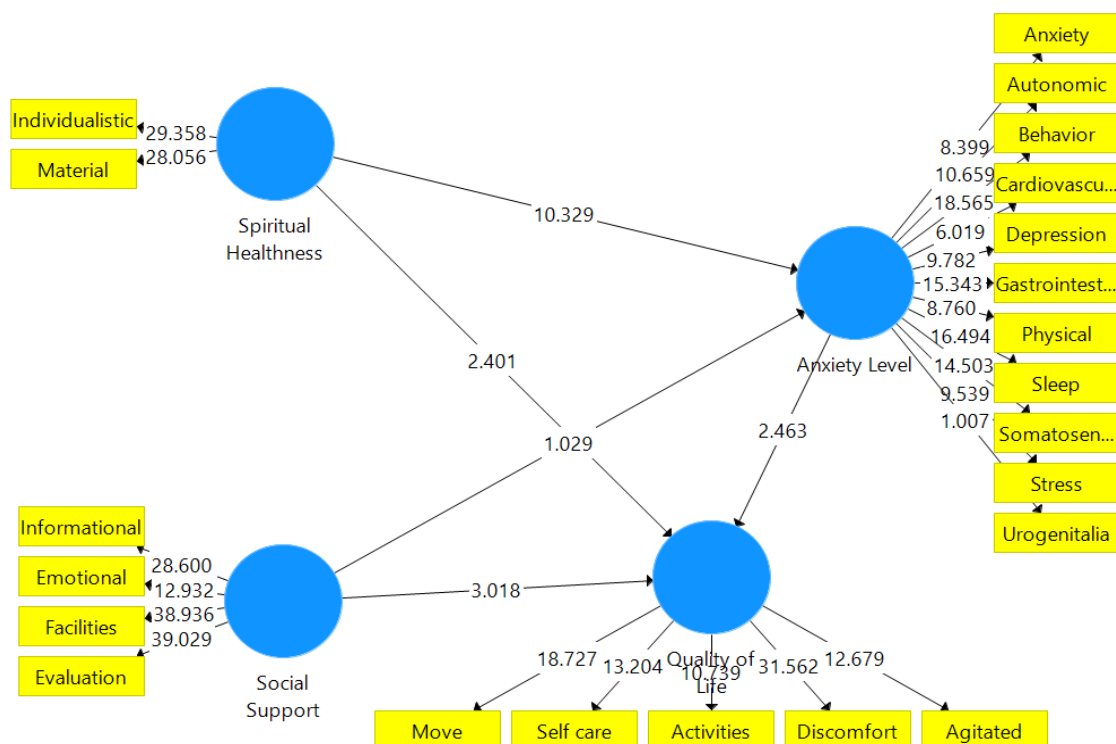


Figure 2. Modeling Structure of Cancer Patients Needs for Fulfillment

psychological, emotional, spiritual, and functional aspects of the patient's journey with an interdisciplinary team of providers and care.

This study found that patients need fulfillment in terms of their spiritual health, and that social support influences their quality of life (p-value: 0.017 and 0.003). One important aspect of psychosocial care for cancer patients is the link between spiritual health and social support. There are psychological and social problems created or exacerbated by cancer, including depression and other emotional problems, as well as a lack of information or skills needed to manage the disease, a lack of transportation and other resources, and disruptions in work, school, and family life. This can cause additional suffering, weaken the adherence to prescribed treatments, and threaten the patient's return to health [23].

Spiritual health is an important aspect of holistic well-being, especially for patients with cancer. It encompasses feeling connected to oneself, others, nature, and things considered sacred or transcendent [24, 25]. For many patients, spiritual health gives life meaning and purpose, helping them to cope better with cancer diagnosis and treatment. Based on this study, for the loading factor of being religious, the amount is 0.464 which less than 0.7, showing that it is not valid.

This study shows there to be a strong link between spiritual health and the physical and mental health of patients with cancer, amounting to 10.329, which is greater than 1.98, with a p-value of $0.000 \leq 0.05$. Patients with good spiritual health tend to have stronger immune systems, lower stress levels, and a better ability to manage physical symptoms such as pain and fatigue. In terms of mental health, spirituality can be a source of psychological strength and resilience [26]. Patients with strong spiritual beliefs often report lower levels of anxiety and depression, and better overall quality of life. Spiritual health can also help patients deal with the uncertainty and fear that often accompanies a cancer diagnosis.

Spiritual health in patients with cancer affects both their physical and mental health, and the potential mechanisms that can occur in the body include changes in the perception of cancer resulting in the activation of the parasympathetic nervous system and the release of endorphins. The effects on physical health include improved immune system function, decreased blood pressure, reduced pain intensity, and improved sleep. The effects on the mental health of cancer patients include reduced levels of anxiety and depression, an increased sense of optimism, increased psychological resilience, and improved coping with stress.

Social support plays a crucial role in the cancer patient's journey [27]. There are several types of social support that can help patients deal with the physical and emotional challenges of cancer. Informational support involves providing accurate information about the disease and treatment. Emotional support includes empathy, love, and care from loved ones. Facilities support involves practical assistance such as transportation to the hospital or assistance with household tasks. Based on this study, evaluation support is the main domain in social support with a loading factor of 39.029. This result differs from

previous studies that showed that evaluation support, which involves recognizing the patient's strengths and resilience, is also crucial. Social support can come from various sources, including family, friends, healthcare professionals, peer support groups, and the community.

Healthcare professionals play an important role in supporting the spiritual health of cancer patients. This starts by recognizing the importance of the spiritual aspects of holistic care. They must conduct sensitive spiritual assessments and respect the diversity of the patients' spiritual beliefs and practices. It is important to create an environment that supports the patients' spiritual expression and facilitates access to appropriate spiritual resources. In addition, health professionals can integrate spiritual considerations into the treatment plan. This may include referring patients to spiritual counselors or religious leaders or helping them find meaning and purpose in their cancer experience. Training healthcare professionals in spiritual competence is also important to enhance their ability to support their patients' spiritual health.

Recommendations to improve this aspect of cancer care include the integration of a spiritual assessment into standard treatment protocols, the training of medical staff on spiritual competence, the development of comprehensive social support programs, and collaboration with religious leaders and spiritual counselors. Further research is necessary to better understand the mechanisms underlying the benefits of spiritual health and social support, as well as to develop effective interventions.

In conclusion, the model for fulfilling the basic needs of cancer patients involving spiritual health (subdomains of individualistic and material) and social support (subdomains of informational, emotional, facilities, and evaluation) has a significant influence on anxiety level (subdomains of feelings of anxiety, autonomic symptoms, behavior, cardiovascular symptoms, depression feelings, gastrointestinal symptoms, physical symptoms, sleep disorder, somatic sensory symptoms, stress, and urogenitalia symptoms) and all subdomains for quality of life. Spiritual health and social support are integral components of holistic cancer care. Both aspects play an important role in improving quality of life, coping, and treatment outcomes. It is important for all parties involved in the care of patients with cancer to recognize and support the spiritual health and social support that are a part of the patients' needs.

Author Contribution Statement

Author 1 studied the conception and design of the experiments; study supervision; critical revisions for important intellectual content; data analysis, manuscript writing; and references.

Authors 2, 3, 4, 5, and 6: Study supervision; critical revisions for important intellectual content; data collection; literature review/analysis. All authors have approved the final manuscript.

Acknowledgements

We would like to thank the managers and caregivers of the East Java Branch of Rumah Singgah Peduli (Mrs. E) and the East Java Branch of the Indonesian Cancer Foundation (Mr. S), as well as the Director and board of directors of Dr. Moewardi Surakarta Hospital for granting research permission. We would also like to thank all cancer patients and their families who are willing to be respondents in this study.

Funding Statement

This research was supported by the Adi Husada Health Science College and the Panti Kosala Health Science College (Grant Number: 95/SK/STIKES-AH/IX/2024).

Ethical Declaration

The study protocol was reviewed and approved by the Adi Husada Ethical Review Board in Surabaya (approval number 850.1/ERB/STIKES-AH/IX/2024) and the Hospital Dr. Moewardi in Surakarta (ethical clearance number 2.256/ IX/ HREC/ 2024). All respondents provided written informed consent before participating in the study.

Conflict of Interest

The authors affirm that any known competing financial interests or personal relationships did not influence the work reported in this paper.

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