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Quality of Life of Breast Cancer Patients with Chemotherapy

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Abstract. Background: Breast cancer does affect the physical condition and biopsychosocial and spiritual aspects as a whole. Current breast cancer interventions focus not only on disease control but also on maintaining and improving life quality. Objective: The study aims to describe the quality of life and factors related to breast cancer patients' quality of life with chemotherapy. Method: The study employed observational with the cross-sectional approach. The samples were 42 respondents taken with the sampling technique using purposive sampling adjusted to the inclusion criteria (patients aged 25-65 years who underwent adjuvant chemotherapy). The data processing used nonparametric statistical tests, namely Mann Whitney and Kruskal Wallis. Result: The average score of quality of life in the domain of physical health (6.25), psychological well-being (6.58), social welfare (7.06), and spiritual well-being (8.76). The stage of cancer and chemotherapy was statistically related to the physical health domain (P = 0.001 and P = 0.000). Cancer stage, frequency of chemotherapy, and chemotherapy were statistically related to the psychological well-being domain (P = 0.000, P = 0.022 and P = 0.000). The stage of cancer and chemotherapy were associated with both social well-being and spiritual well-being domains (each had a P = 0.000 value). Age, marital status, education, employment status, income, frequency of chemotherapy, and length of treatment were not related to the domain of quality of life for breast cancer patients with chemotherapy. Conclusion: Quality of life is highest in the domain of spiritual well-being. Factors related to the domain of quality of life for breast cancer patients with chemotherapy are cancer stage, chemotherapy frequency, and comorbidity.
Abstract min 100 words and max 250 words

Keywords: Quality of Life, Breast Cancer, Chemotherapy

1. INTRODUCTION

Cancer is one of the leading causes of death worldwide [1]. According to the World Health Organization (WHO) report in 2018, breast cancer is the most common cancer among women. Breast cancer affects 2,088,849 (11.6%) women worldwide, with a mortality incidence of 626,679 (6.6%) cases [2]. Breast cancer ranks first among the most common cancers in women in Indonesia, with an estimated 58,256 (16.7%) new cases of breast cancer in 2018, and a mortality incidence reaching 22,692 (11%) [3].

Breast cancer is considered a serious and chronic disease that has been described as taking away the hope and certainty of patients [1]. Diagnosis and treatment of breast cancer negatively impact life, leading to a low quality of life [4]. Breast cancer not only affects physical condition but also impacts overall aspects such as psychological well-being, social interactions, and spiritual wellness [5].

Research conducted by Al Zahrani et al. (2019) and Huang et al. (2017) reported that the quality of life of breast cancer patients is low, particularly in the physical and psychological aspects. Patients with breast cancer symptoms are reported to have more problems in all aspects, such as mobility issues, self-care, daily activities, pain/discomfort, and anxiety/stress [6].

The quality of life of breast cancer patients is related to various factors, one of which is chemotherapy. Research by Nugraha & Melati (2016) proves that female cancer patients undergoing chemotherapy experience physical

problems and severe depression. The side effects of chemotherapy include nausea and vomiting, myelosuppression, alopecia, and stomatitis [7]. The patient is overwhelmed by feelings of worthlessness, anxiety from feeling like a burden to others, and shame from not having significance to others. Sometimes there is also a feeling of alienation and loneliness due to being far from friends or worries about those left behind. Breast cancer interventions not only focus on disease control but also on maintaining and enhancing the quality of life for women with breast cancer [8]. Quality of life assessment is important for women with breast cancer, particularly concerning treatment planning and rehabilitation. Quality of life is beneficial for optimally addressing cancer symptoms as it can provide additional information in monitoring and evaluating patient responses [9].

A preliminary study conducted at RSUD Panembahan Senopati Bantul found that the quality-of-life scores for patients are still low. The patient is experiencing physical health issues such as nausea, difficulty sleeping, and loss of appetite, due to chemotherapy. As a result, some of the patient's hair is falling out. Psychological well-being, such as the fear of undergoing cancer treatment. Social welfare is like the inability to carry out daily activities as usual. Spiritual welfare is like the inability to participate in religious activities. The high incidence of breast cancer and the still low quality of life for patients has led researchers to be interested in measuring the quality of life in breast cancer patients, as it has important benefits for assessing a clinical intervention.

2. METHODS

The research method used is a type of observational research with a cross sectional approach design. The population of breast cancer patients undergoing chemotherapy, a sample of 42 respondents, with a sampling technique using purposive sampling adjusted to the inclusion criteria (patients aged 25-65 years who underwent adjuvant chemotherapy). The research instrument used is the Quality-of-Life Breast Cancer Scale (QOL-BCS) published by the National Medical Center and Beckman Research Institute City of Hope by measuring the domains of physical health, psychological well-being, social well-being, and spiritual well-being. Data processing uses nonparametric statistical tests, namely Mann Whitney and Kruskal Wallis with the SPSS program.

3. RESULTS AND DISCUSSION

This section is the real meat of the paper. In this section, you should interpret your results in light of the theory and other information in the Introduction section. This is where you would compare your result with theory or other observations. Describe how the result fits or doesn't fit current models. The results section should aim to narrate the findings without trying to interpret or evaluate them and provide a direction to the discussion section of the research paper. The results are reported and reveal the analysis. The analysis section is where the writer describes what was done with the data found. The Results section of a scientific research paper represents the core findings of a study derived from the methods applied to gather and analyze information. It presents these findings logically without bias or interpretation from the author, setting up the reader for later interpretation and evaluation in the Discussion section. A major purpose of the Results section is to break down the data into sentences that show its significance to the research question(s).

3.1. Result

a. Characteristics Respondent

The respondents in this study were breast cancer patients undergoing chemotherapy at Panembahan Senopati Hospital Bantul totaling 42 respondents. The frequency distribution of respondent characteristics in this study can be seen as follows:

Table 1. Characteristics of Respondents of Breast Cancer Patients with Chemotherapy

Characteristics Responden	***f***	**%**
Age		
<50 years	22	52,4%
>50 years	20	47,6%
Marital Status		
Marry	38	90,5%
Divorce	4	9,5%
Religion		
Islam	39	92,8%
Protestant Christianity	2	4,8%

Characteristics Responden	*f*	%
Catholic	1	2,4%
Education		
Primary Education	25	59,5%
Secondary Education	10	23,8%
Higher Education	7	16,7%
Employment Status		
Work	23	54,8%
Not Working	19	45,2%
Household Income		
< MSEs (Rp. 1,790,500)	27	64,3%
> MSEs (Rp. 1,790,500)	15	35,7%
Stadium Kanker		
Early Stage	16	38,1%
Advanced Stage	26	61,9%
Frequency of Chemotherapy Cycles		
<3 cycles	11	26,2
>3 cycles	31	73,8
Length of Treatment		
< 1 Year	26	61,9%
> 1 Year	16	38,9%
Comorbidities		
Ada	17	40,5%
No	25	59,5%
Types of Comorbidities		
Hypertension and High Cholesterol	2	11,76%
Diabetes and Obesity	1	5,88%
Hypertension	6	35,29%
Diabetes	1	5,88%
Anemia	3	17,65%
High cholesterol	2	11,76%
Heart	1	5,88%
Obesity	1	5,88%

Based on Table 1, the results were obtained that most of the patients were <50 years old (52.4%), married (90.5%), Muslim (92.9%), had basic education (59.5%), worked (54.8%), had an income of <UMK (64.3%), were in the advanced stage (61.9%), had undergone >3 cycles of chemotherapy (73.8%)), treatment <1 year (64.3%) and no comorbidities (59.5%), having hypertension (35.29%).

b. Quality of Life

The description of the research results of the quality of life is as follows:

Table 2. Quality of Life Domain of Breast Cancer Patients with Chemotherapy

Quality of Life Domain	$\overline{X}$	SD	Information
Physical Health	6,25	1,15	Less
Psychological Well-Being	6,58	1,02	Less
Social Welfare	7,06	1,01	Less
Spiritual Well-Being	8,76	1,11	Good

Based on Table 2, the results of the physical health domain had a *mean value* of 6.25 and a standard deviation of 1.15, the psychological well-being domain had a *mean value of* 6.58 and a standard deviation of 1.02, the social welfare domain had a *mean value* of 7.06 and a standard deviation of 1.01, the spiritual well-being domain had a *mean value* of 8.76 and a standard deviation of 1.11.

c. Bivariate Analysis

The data analysis techniques used for bivariate analysis are nonparametric statistical tests, namely *Mann Whitney (*nominal data) and *Kruskal Wallis* (ordinal data). The results of the cross-tabulation between the quality-of-life domain and factors related to quality of life can be seen in the table below:

Table 3. Results of Correlation Test between Quality-of-Life Domain and Respondent Characteristics of Breast Cancer Patients with Chemotherapy

Variable	Quality of Life Domain							
	Physical Health		Psychological Well-Being		Social Wel Being		Spiritual Well-Being	
	$\overline{X}$	*p-value*	$\overline{X}$	*p-value*	$\overline{X}$	*p-value*	$\overline{X}$	*p-value*
Age		**0,820**		**0,496**		**0,553**		**0,595**
≤50 years	21,91		20,27		22,57		20,55	
>50 years	21,05		22,85		20,33		22,55	
Marital Status		**0,255**		**0,653**		**0,440**		**0,966**
Marry	22,20		21,78		21,97		21,53	
Divorce	14,88		18,88		17,00		21,25	
Education		**0,625**		**0,415**		**0,447**		**0,885**
Primary Education	20,02		19,86		20,46		20,92	
Secondary Education	23,20		21,90		20,35		23,15	
Higher Education	24,36		26,79		26,86		26,86	
Employment Status		**0,486**		**0,495**		**0,369**		**0,525**
Work	22,70		22,67		23,04		22,59	
Not Working	20,05		20,08		19,63		20,18	
Household Income		**0,237**		**0,168**		**0,226**		**0,979**
≤ UMK (Rp. 1.790.500)	19,83		19,56		19,80		21,46	
> MSEs (Rp. 1,790,500)	24,50		25,00		24,57		21,57	
Stadium Kanker		**0,001***		**0,000***		**0,000***		**0,000***
Early Stage	29,81		31,59		31,81		29,91	
Advanced Stage	16,38		15,29		15,15		16,33	
Frequency of Chemotherapy Cycles		**0,295**		**0,022***		**0,169**		**0,232**
≤3 siklus	18,18		14,23		17,14		17,73	
>3 cycles	22,68		24,08		23,05		23,05	
Length of Treatment		**0,669**		**0,468**		**0,551**		**0,958**
≤ 1 Year	22,13		20,42		22,38		21,42	
> 1 Year	20,47		23,25		20,06		21,63	
Comorbidities		**0,000***		**0,000***		**0,000***		**0,000***
Ada	11,71		11,00		11,76		11,50	
None	28,16		28,64		28,12		28,30	

* value *p-value* < 0.05, meaning that there is a relationship between the quality of life domain variable and the respondent's characteristic variable

The results of the statistical test showed that the stage of cancer was related to quality of life in the domains of physical health (**0.000*),** psychological well-being (**0.001*),** social well-being (**0.000*)** and spiritual well-being (**0.000*).** The results of the statistical test showed that the frequency of chemotherapy cycles was related to quality of life in the domains of physical health, psychological well-being (**0.022*).** The results of the statistical test showed that comorbidities were related to quality of life in the domains of physical health (**0.000*),** psychological well-being (**0.000*),** social well-being (**0.000*)** and spiritual well-being (**0.000*).**

3.2. Discussion

Quality *of life* (QoL) is a multi-dimensional concept that includes domains related to physical, psychological, social and spiritual health [10]. The results of the research conducted showed that the patient's quality of life score was the lowest in the physical health domain and the highest was in spiritual well-being. These results are in line with previous research Huang et al. (2017); Setyowibowo et al. (2018); Al Zahrani et al. (2019); Hashemi et al. (2019) proved that breast cancer patients had the lowest quality of life value in the physical and psychological health domains.

The results of the research conducted showed low physical health. Fertility/menstrual disorders and problems Vaginal dryness/menopause is caused by systemic cancer treatments, such as chemotherapy, hormonal therapy, or manipulation (ovarian compression or detachment) [13]. Cancer treatment with chemotherapy can interfere with hormone production [14]. Pain experienced as a result of the treatment measures undertaken [15]. Pain will affect

changes in sleep and fatigue can wake a person up from normal sleep, prevent them from falling asleep, and contribute to a loss of energy or fatigue [15]. Weight changes and reduced appetite are one of the side effects of chemotherapy. Chemotherapy causes patients to experience nausea and vomiting. Nausea is an uncomfortable sensation felt in the throat and epigastrum that can cause gastric contents to come out. Vomiting is the discharge of stomach contents through the mouth caused by the motor reflex. This condition reduces the patient's appetite and causes weight loss, as well as lowering the patient's quality of life [16]. Breast cancer patients who are in advanced stages are reported to have a worse quality of life than patients with early-stage cancer [17] [18] especially in role and cognitive function. Symptoms and pain are more often felt and painful than in the early stages, In addition, patients experience nausea and vomiting, pain, and fatigue [19]. Comorbidities mainly disease Hypertension and diabetes are reported to have negative associations with various domains of breast cancer patients' quality of life even 12 months after treatment.

The results of the research conducted showed low psychological well-being. Research conducted by Srivastava *et al*. (2015) stated that patients suffering from breast cancer will generally experience psychological problems at every stage, starting from prediagnosis to the terminal phase. Diagnosis and treatment of breast cancer can be a *stressful situation* for patients, increasing negative emotions and psychological distress, especially symptoms of anxiety and depression [20]. Research conducted by Huang *et al*. (2017) stated that advanced stage and the presence of other comorbidities at the time of cancer diagnosis and chemotherapy treatment put patients diagnosed with breast cancer at greater risk of emotional distress to survive [11]. Research conducted by Dehkordi *et al.* (2009) proved that the frequency of chemotherapy affects the psychological and emotional status of patients. Symptoms associated with chemotherapy can reduce the daily activities of breast cancer patients and cause them to only lie in bed and not be able to meet their needs in activities [21].

The results of the research conducted showed low social welfare [22] stated that breast cancer and its treatment affect sexual problems, generally faced by cancer patients within 2 years of diagnosis, including the inability to achieve satisfaction and reduced sexual activity in general. Setyowibowo *et al*. (2018) states that diagnosis and treatment can deprive a person of the function of their role in the family and society causing psychological distress. The psychological stress experienced during a breast cancer diagnosis can interfere with their ability to mobilize, take care of themselves, and carry out daily activities. Social functioning becomes worse when individuals use avoidance and escape methods, or feel that cancer is preventing them from doing what they want to do and that cancer threatens self-esteem [23]. Sanders *et al*. (2014) stated that the presence and level of family and social support will be very helpful in overcoming their psychological and psychosocial problems.

The results of the research conducted show high spiritual well-being. Wei *et al*. (2016) states that spirituality is a resource or inner aspect of a person that is used to overcome major stressors, such as breast cancer. This state is generally defined as a construction that includes a meaning component, a belief-based component, and an existential coping component [24]. The majority of studies state that involvement in religious activities improves mental and physical health, overcoming illness, and medical outcomes. The relationship between God and other religious activities creates a sense of comfort, calm and peace, making it easier for patients to be more positive about their illness because they have a handle [25]; [26].

4. CONCLUSIONS

Based on the results of the research and discussion that has been carried out, conclusions can be drawn the lowest quality of life for breast cancer patients is in the physical health domain, the highest quality of life for breast cancer patients is in the domain of spiritual well-being. Factors related to the quality-of-life domain of breast cancer patients are cancer stage, chemotherapy frequency and comorbidities.

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