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Analysis of Factors Affecting the Quality of Life of Breast Cancer Patients Undergoing Chemotherapy at RSUD Gunung Jati Cirebon in 2024

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ABSTRACT
Breast cancer was the leading cause of cancer-related deaths among women worldwide in 2020 and 2022, particularly in Indonesia. This disease is considered terrifying for many women because of its life-threatening nature, which can cause disruptions in various aspects of life. This means that breast cancer patients are vulnerable to a decreased quality of life. The importance of conducting routine assessments of quality of life lies in identifying and providing early interventions for patients at high risk of deterioration. This study aims to determine the factors that affect the quality of life of breast cancer patients. This research is a cross-sectional study involving breast cancer patients undergoing chemotherapy at RSUD Gunung Jati Cirebon during the period of June to July 2024. Data were collected through patient interviews and medical record reviews. Quality of life (QoL) was assessed using the Indonesian version of the EORTC QLQ-C30 questionnaire. Differences were found in the mean scores across various groups of variables. The results of statistical tests showed significant associations between age ($p < 0.001$), income ($p < 0.001$), cancer stage ($p < 0.001$), nutritional status ($p = 0.045$), and anxiety ($p < 0.001$) with the quality of life of breast cancer patients. Meanwhile, duration of illness ($p = 0.073$) and type of treatment ($p = 0.359$) had no significant effect on QoL. In summary, age, income, cancer stage, nutritional status, and anxiety were the factors that influenced the QoL of breast cancer patients undergoing chemotherapy.

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INTRODUCTION

Cancer is one of the non-communicable diseases that remains a significant global health issue. This disease is a major contributor to mortality, with cases continuing to rise each year. Cancer is characterized by the continuous and uncontrolled growth of abnormal cells, which allows these cells to spread to distant locations and invade the surrounding tissues, leading to unavoidable tissue damage (Ardiani et al., 2019; Aslam et al., 2014; Gita et al., 2023; International, 2022; Lewandowska et al., 2020).

According to the Global Cancer Observatory in 2020 and 2022, breast cancer is the second most common type of cancer after lung cancer and is the most frequently diagnosed cancer among women worldwide. Of all cancer types, the proportion of breast cancer among women in 2022 was approximately 23.8%. In 2022, the incidence of breast cancer constituted 20.8% of all cancer cases among women on the Asian continent. Likewise, in Southeast Asia, breast cancer is the most prevalent cancer among women, with an incidence rate of 27.7% and

third-highest mortality rate at 8.5% in 2020. In 2022, the incidence among women in Southeast Asia rose to 28.0%, with mortality reaching 8.6%. These figures reflect a rising trend in both incidence and mortality rates for breast cancer in Southeast Asia. Asian countries, particularly those with large populations such as China and Indonesia, substantially contribute to the overall burden of this disease (Asia, 2024; Ferlay et al., 2024; Organization, 2020, 2022; Paris & White, 2011).

In Indonesia, breast cancer ranks as the leading cause of cancer-related death among women. In that year, total cancer cases reached 396,858, with 65,858 (16.6%) of those being breast cancer sufferers (Hero, 2020; Liambo et al., 2022). By 2022, cancer incidence increased to 408,661 cases, of which 66,271 (16.2%) were due to breast cancer. The prevalence of breast cancer in Indonesia over the past five years as of 2022 is 209,748 cases, equating to 151 per 100,000 people affected. According to the World Cancer Research Fund International 2022, Indonesia ranked eighth globally in breast cancer incidence, with 66,271 cases. The breast cancer mortality rate for Indonesian women is ranked fourth in the world, at 22,598 deaths.

There are various therapies available, including: surgery, chemotherapy, radiotherapy, hormone therapy, targeted therapy, medical rehabilitation, and palliative therapy (Zafar et al., 2025). However, chemotherapy is considered the most effective and widely used therapy for most malignancies. Initially, chemotherapy was thought to selectively destroy only cancer cells, but it is now understood that chemotherapy drugs also damage normal cells, especially those that rapidly divide, such as cells in the hair, skin, mouth, spinal cord, throat, and gastrointestinal tract. The side effects are profound and cause significant anxiety for most patients, negatively impacting both physical and psychological health and potentially diminishing the quality of life of breast cancer patients (American Cancer Society, 2018; Aslam et al., 2014; Gita et al., 2023; Lenz-Alcayaga et al., 2025).

Although cancer treatment has advanced in recent years, this disease remains a frightening reality for many women due to its life-threatening nature and multidimensional psychological impact—spanning physical, psychological, and social challenges. These challenges ultimately affect the quality of life for patients diagnosed with breast cancer. Cancer exerts a detrimental influence on the quality of life for its sufferers, attributable to the disease process, treatment modalities, and duration of illness (Bozzette, 2011; Jones et al., 2020; Shurtleff & Lawrence, 2012; Wamai et al., 2011; Wang et al., 2010).

Quality of life is defined as an individual's perception of their life, shaped by the culture and environment in which they live, in harmony with standards of living, happiness, and aspirations. A range of factors may influence quality of life. To optimize quality of life, periodic assessments in various life domains are essential; these assessments are designed to identify high-risk patients and enable interventions that can prevent deterioration in quality of life, ultimately improving all aspects of the individual’s life.

Given the persistently high incidence of breast cancer in Indonesia and the critical importance of quality of life in the treatment process, this research seeks to investigate which factors affect the quality of life of breast cancer patients undergoing chemotherapy at RSUD Gunung Jati Cirebon in 2024. An understanding of these determinants may serve as a practical

guideline for readers to help enhance the quality of life for breast cancer patients, according to their respective capacities and roles.

Previous studies have provided foundational insights into factors affecting the quality of life (QoL) in breast cancer patients undergoing chemotherapy, yet gaps remain in the comprehensive evaluation of these factors in specific hospital settings. For instance, Kim et al. (2020) analyzed the impact of sociodemographic and psychological factors on QoL in breast cancer patients, reporting that age, income, and depression significantly influenced functional and emotional domains. However, this study focused primarily on outpatient populations in tertiary urban hospitals, limiting the applicability to semi-urban or regional hospital contexts. Similarly, Zhang et al. (2021) examined the relationship between chemotherapy side effects and QoL, emphasizing physical and symptom domains measured by EORTC QLQ-C30, but did not address the global health domain or evaluate comprehensive multidimensional outcomes in a localized setting.

The purpose of this research is to identify key determinants of QoL in breast cancer patients receiving chemotherapy. The benefits include guiding healthcare providers in tailoring interventions, improving patient outcomes, and strengthening evidence-based oncology practices in regional hospitals. The novelty of this study lies in its comprehensive, multidimensional evaluation of QoL in breast cancer patients within a regional hospital context, thereby addressing a significant gap in the literature.

METHOD

This research was conducted using an observational analytical method with a scientific focus on the fields of surgical oncology, epidemiology, and public health sciences. The place used in this study is the hematoncology polyclinic (HOT) of Gunung Jati Hospital. The target population of this study includes all breast cancer patients undergoing chemotherapy at Gunung Jati Hospital, while the affordable population is breast cancer patients undergoing chemotherapy at Gunung Jati Hospital in May – July 2024. There were 97 respondents who were selected using the non-probabilty sampling technique, consecutive sampling. The inclusion criteria include: breast cancer patients of all stages who have been diagnosed by an oncologist who are undergoing chemotherapy at the HOT polyclinic with a minimum age of 18 years and have undergone chemotherapy for at least one cycle. Samples will be excluded if they are unable to speak verbally, are unwilling to be respondents, and are male. The independent variables of this study were factors (age, income, length of illness, stage, type of treatment, nutritional status, and anxiety), while the bound variables were quality of life.

In this study, the instruments used were primary and secondary data. Primary data were obtained from the results of interviews with patients using the QLQ-C30 questionnaire to assess quality of life and GAD 7 to assess the level of anxiety in the respondents. Meanwhile, to find out the characteristics of the respondents, use closed questions that have been compiled by the author. Then secondary data was obtained from medical records that had been approved by the respondents as a tool to complement anthropometric data as material to assess nutritional status and breast cancer stage data.

Univariate analysis was conducted to describe the distribution of frequency and percentage of each variable, namely age, income, length of illness, stage, type of treatment, nutritional status, and anxiety in breast cancer patients. Bivariate analysis was carried out on two variables that were suspected to be interrelated. The independent variables will be analyzed using the Mann-Whitney statistical tests (income, length of illness, stage, type of treatment) and Kruskal Wallis (age, nutritional status, anxiety)

RESULT AND DISCUSSION

Overview of Respondent Characteristics

This study was conducted on breast cancer patients undergoing chemotherapy at Gunung Jati Cirebon Hospital. Data collection was carried out in the period of May – July 2024. The study involved as many as 97 breast cancer patients who were selected according to inclusion and exclusion criteria and were willing to be used as research samples. The results of the study obtained an overview of the characteristics of the respondents as follows:

Table 1. Overview of Respondent Characteristics

Variable	Frequency	Percentage (%)
Age		
18 – 25 years old	1	1,0
26 – 45 years old	35	36,1
45 – 65 years old	59	60,8
> 65 years old	2	2,1
Income		
< 2.5 Million	71	73,2
≥ 2.5 Million	26	26,8
Long Illness		
< 2 years	65	67,0
≥ 2 years	32	33,0

Based on table one, it was found that the majority of respondents had an age range of 45 – 65 years old with a percentage of 60.8%. Most of the respondents' income is below the UMR (Regional Minimum Wage) worth < 2.5 million, which is 73.2%. Generally, respondents are new patients who have not been diagnosed recently, namely < 2 years old with a percentage of 67%.

Clinical Overview of Respondents

Table 2. Clinical Picture of Breast Cancer Patients

Variable	Frequency	Percentage (%)
Cancer Stadium		
Early Stage	32	34,0
Advanced Stadium	64	66,0
Types of Treatment		
Chemotherapy with Mastectomy	65	67,0
Chemotherapy Without Mastectomy	32	33,0
Nutritional Status		
Less	14	14,4
Normal	40	41,2

Variable	Frequency	Percentage (%)
Excess	29	29,9
Obesity	14	14,4
Anxiety		
Normal	6	6,2
Mild Anxiety	38	39,2
Moderate Anxiety	37	28,1
Severe Anxiety	16	16,5

Based on table two, it was found that 66.0% of respondents had entered the advanced stage. As many as 67.0% of respondents who underwent chemotherapy had had a mastectomy. The majority of respondents had a normal nutritional status of 41.2%, while respondents who had a poor nutritional status were 14.4%. In addition, there were 16.5% of respondents who experienced severe anxiety.

Overview of Respondents' Quality of Life

Table 3. Quality of life score on QoL domains

Quality of Life	Min	Max	Mean±SD
QoL domain/ GHS (Global Health Status)	16,66	100,00	51,46 ± 18,24

Global Health Status is one of the domains that is considered the best reflection in describing respondents' subjective perceptions of general conditions and quality of life of patients in the QLQ-C30 questionnaire. So that this domain can represent all domains and scales contained in the QLQ-C-30 questionnaire. In this domain, the higher the score indicates a better level of quality of life. This QoL score has a minimum value of 16.66 and a maximum value of 100.00. The division of quality of life scores is divided into 3, namely poor, medium and good quality of life. It is said to be bad if the score is ≤33.3, then it is 33.4 – 66.5, and good if it is >66.5. Based on the results of the descriptive analysis in table 11 regarding the description of the respondents' quality of life, the average quality of life score of patients was 51.46 ± 18.24. So that the average respondent has a moderate quality of life.

Overview of Respondent Characteristics

Age Characteristics

Based on table three, it can be seen that 60.8% of respondents have an age range of 45 – 65 years. Previous research has shown that the incidence of breast cancer is very rare in women under the age of 25. This is in line with the results of the current research, in the range of 18-25 years only 1.0% or only 1 respondent was found.25 Respondents with the age of >65 years were only around 2.1%. This is in line with previous research by Vina Asna, et al (2020) which stated that most of the respondents were dominated by patients in the age range of 46 – 65 years with a percentage of 62.5%, while 34.3% of the respondents were in the age range of 26 – 45 years, and only 3.1% were >65 years old.26 This is supported by research conducted by Gusti Ayu, et al. (2016) whose respondents were dominated by the age range of 46 – 65 years with a percentage of 73.15%, while the age range of >65 years only had a percentage of 0.93%.

The age range of 45 – 65 years is the transition period from late adulthood to the elderly. In this age range, the body has begun to experience a decline in organ and hormonal function.27 This is in line with the previous theory that the risk of breast cancer will increase by 3% after the age of 40.28

Income Characteristics

In table three, most of the respondents 73.2% have low incomes, namely <2.5 million or below the UMR. This is in line with previous research by Marwin et al at dr. Kariadi Hospital Semarang, it was found that 63.08% of respondents had an income of <2.5 million.29 Data on other research characteristics also showed the same thing, namely 63.6% of respondents had an income below the UMR.30 According to West Java In Province Figure statistical data in 2024, the average net income of informal workers, especially in the three Cirebon regions, ranges from 800 thousand to 2 million per month. This is in accordance with the results of this research which shows that most respondents have an income below the UMR. The average income in West Java generally depends on how high the education is, people with elementary education have an average income of around 1.6 million per month.31 This is in accordance with the characteristics of the respondents, the majority of whom are elementary school graduates or have not graduated.

Characteristics of Long Illness

Next is the characteristic of long illness. The length of illness was obtained from the beginning of the patient being diagnosed with breast cancer until the study period. In the table, it was found that 67.0% of respondents were new patients diagnosed < 2 years. Meanwhile, 33.0% are old patients who have been diagnosed ≥ 2 years. Another study by Fahimeh Shafaie (2019) found that 80.7% of respondents were patients diagnosed ≤ 2 years, with 60.8% of respondents only diagnosed < 1 year.19 This is in line with the results of Vina Asnari's (2020) research which explained that most of the respondents (59.4%) were new patients (< 1 year) who had recently been diagnosed.26 However, these results are inversely proportional to the research conducted by Rahmiwati (2022) which stated that as many as 76.7% The respondents have been diagnosed > 2 years.32 The length of illness can indicate how much survival life in breast cancer patients is. According to research conducted by Ifan Fadhil, et al. (2021), it shows that the survival span of breast cancer patients based on their immunohistochemistry profile ranges from 3 – 5 years at most.33 This is in accordance with the results of previous research by Vina Asnah (2020), it was found that respondents who were sick for a long time >1 year, the survival rate decreased, especially the length of time the respondents were sick > 6 years only showed a very small percentage, which was 6.2%.26

Characteristics of Cancer Stages

Based on the table, it was found that most of the respondents (66.0%) have entered the advanced stage. This characteristic is in accordance with research that has been conducted previously at the Sahabat Iin Cancer Shelter with 90.9% of respondents being patients with advanced stages with 57.6% of respondents having stage three.30 Another study was also

conducted by Mikiyas Ameru (2022) showing that 54.1% of respondents were advanced stage patients with almost 40.8% being stage three.34 This is in line with research conducted by Vina Asna (2020) who stated that as many as 75% of the respondents had stage three, while the rest were stage four.26 Another study by Alshafiera (2020) also explained that the most clinical stage in its respondents was stage three with a percentage of 26.8%.35 The large number of advanced patients is generally due to the delay in diagnosis at the onset of symptoms. The delay can be caused by several things, such as low levels of education, lack of information exposure, poor public perception of medical treatment, affordability of distance and cost, and lack of support and early detection behaviors which are suspected to be predictors of delayed diagnosis that causes many patients to be diagnosed in advanced stages.36,27

Characteristics of Treatment Types

All respondents in this study were respondents who had undergone at least one cycle of chemotherapy, but the difference was whether or not the mastectomy procedure had been performed. A mastectomy is a procedure to remove part or all of the breast to remove tumor tissue, this procedure is usually performed in stage II and III cancers. As many as 67.0% of respondents have undergone mastectomy procedures, while the rest have not or may not have been performed. This is in line with previous research by Amira Daldoul et. al (2018) which found that 88.6% of respondents had undergone mastectomy surgical therapy.37 Another study by Magdalena (2020) showed that as many as 71.3% of respondents had undergone surgical procedures, either mastectomy or only lumpectomy.38 Then the results of research conducted by Jamilah Yusouf et al. (2022) showed that as many as 94.2% of respondents had received surgical therapy.39 The number of breast cancer patients who choose mastectomy as their treatment option, This is because it has been proven to effectively inhibit the development process of cancer cells, so that the recovery rate can increase.40

Characteristics of Nutritional Status

The majority of respondents (41.2%) had normal nutritional status, followed by overnutrition status of 29.9%, followed by undernutrition status and obesity with a percentage of 14.4% each. This is in line with the results of a study conducted by Sitti Putri (2022) that there was no difference between BMI before and after chemotherapy. The distribution of the most nutritional status was normal/ideal with a percentage of 60.6%, followed by excess nutritional status which was 25.5%, undernutrition status of 9.6%, and obesity which was only 4.3%.41 The results of another study, by Alshafiera (2022) showed that most of the respondents were included in the obese category with a percentage of 53.73%. While the rest were normal (40.29%) and thin (5.97%).35 This is in line with the research conducted by Andree Kurniawan (2015) found that 77.2% of the respondents had normal nutritional status.42 Then the results of the research conducted by Hidayat et. AL (2020) found that 82.4% have normal nutritional status, while the rest are lacking. This result is quite contrary to the theory in general, where in patients with cancer the body will generally experience weight loss which can be caused by the side effects of chemotherapy which can stimulate nausea-vomiting receptors, hypermetabolic conditions that result in increased glucose needs, and malabsorption of nutrients. As a result of

cancer cells or side effects of treatment, cancer patients are more susceptible to weight loss. However, the use of breast cancer therapy regimens such as CMF, anthracycline and taxan has a weight-lifting effect. It was found in 100 patients with weight gain, as many as 1 in 3 of them took CMF. Weight gain in breast cancer patients is called sarcopenic obesity. This condition causes the composition of muscle mass to be replaced by more fat mass. According to Ravasco et al. (2003), breast cancer patients have a lower risk of malnutrition than patients with other types of cancer. So that quite a few breast cancer patients do not experience weight loss.41,43,44

Characteristics of Anxiety Levels

Based on the results of the study using the GAD-7 (Generalized Anxiety Disorders) instrument, it was found that as many as 16.5% of respondents experienced severe anxiety. However, the majority of respondents experienced mild anxiety with a percentage of 39.2%. Then 28.1% of respondents had moderate anxiety, while 6.2% had no anxiety or normal. Previous research by Sumarni, et al. (2022) conducted on breast cancer patients undergoing chemotherapy at Kraton Hospital, Pekalongan Regency using the Anxiety Level Measurement Sheet questionnaire had the same results as this study using the GAD – 7 questionnaire, namely almost all respondents had mild anxiety with scores close to moderate anxiety.45 This is supported by the results of previous research by Callys-Tagoe et al. (2017) which shows that as many as 92.5% of respondents experience anxiety, with mild anxiety of 34.2%, while the remaining 58.3% are moderate to severe anxiety. Other research results show otherwise. A study conducted by Michelle Tania et al. (2019) with the Hospital Anxiety and Depression Scale (HADS) instrument which describes the anxiety level of breast cancer patients, found that the majority of respondents did not experience anxiety with a percentage of 79.4%.46 The variety of anxiety interpretations can be due to the factor of the number of respondents and questionnaire instruments that are different from this study. Low anxiety scores can occur due to the spiritual factors of the sufferer. Their closeness to the Creator and belief in the power of prayer make the respondent calmer in facing something, so that it can relieve the psychological stress contained in their mind. In addition, the social and environmental support provided to breast cancer patients is very effective in suppressing their psychological stress.45,45,47,48

Overview of Respondents' Quality of Life

In this study, the average respondent had a score of 51.46±18.24 which means they had a moderate quality of life. The results of another study by Debby Nomiko (2020) at Raden Mahatter Jambi Hospital showed an average quality of life (QoL) score of 60.71, most of which respondents were in the medium category.49 Previous research by Marwin, Diah, et al. (2018) at dr. Kariadi Hospital Semarang found that the average quality of life (QoL) score of respondents was 72.18±18.94. This shows an assessment of the health condition and quality of life in the respondents of dr. Kariadi is still better than the results of this study, the score is classified as a good quality of life.50 After that, research conducted by Dewa Gede Sudiasta, et al. (2022) at Sanglah Bali Hospital found an average QoL score that is better than before, which is 84.17 with a good quality of life category.51 Then research abroad, by Mikiyas Amare

(2022) in Ethiopia shows that the average QoL score of the respondents is 65.6±18.6 which shows an average score is better than the results of this research. The QoL score is still included in the medium category.34

Factors Affecting the Quality of Life of Breast Cancer Patients

The influence of age on quality of life

In the table, the highest score was obtained in the age range of 26 – 45 years, which was 60.71 ± 17.33 the score was above the average score of the overall quality of life. Followed by the age of ≥ 65 years, which is 50.00 ± 00.00, while the lowest score is in the age range of 45 – 65 years, namely 45.33 ± 16.02. This is in line with previous research by Magdalena Konieczny (2020) which obtained a pvalue of 0.034 < 0.05 showing that age affects the quality of life of breast cancer patients. According to him, old age can worsen the quality of life.38 Meanwhile, young age usually shows a better quality of life than older patients, because aging and decreased physical ability due to illness will cause limitations in the patient's physical function which leads to a decrease in quality of life. However, there are several other studies whose results are inversely proportional to previous theories, this theory shows that patients with young ages i.e. in their 30s to 40s show a more vulnerable quality of life compared to those in their 50s to 60s.52 Such as research conducted by Hamer et. al al in Canada in 2017, showed that patients <50 years showed a worse quality of life than patients >50 years old. This may indicate that the psychological impact of breast cancer is more susceptible to exposure at a young age. Especially the impact of cancer treatment in the form of chemotherapy or mastectomy undergone. This causes partial or complete loss of the breast as a result of surgery, hair loss, blackening of the skin and weight changes, so it can affect the sexual attraction of the sufferer.53

The effect of income on quality of life

The results of the correlation test showed that income had a Pvalue of <0.001 or <0.05 which means that the income factor affects the quality of life of breast cancer patients. In table twelve, income above UMR has an average higher quality of life score than low income, which is 62.17±17.03. The average is above the average of the QoL school as a whole. Meanwhile, the income <UMR has an average score of 47.53±17.15. The score is below the total average quality of life score. Both are still included in the category of moderate quality of life. Another study by Marwin, et al (2021) at dr. Kariadi Semarang Hospital showed a better average and was included in the category of good quality of life. The average score of respondents > UMR was 75.00, higher than respondents <UMR, which was 70.53. Although there was a difference in the average, it turned out that the results of the statistical test in the study showed a p value of 0.410 > 0.05, which means that in Marwin et al.'s study, income did not affect the overall quality of life score.50 Then, a study conducted by Magdalena Konieczny (2020) in Poland obtained a pvalue of 0.000 which means that income affects the quality of life of breast cancer patients. There was a variation in scores between respondents with very sufficient, sufficient, and less income. The highest average score was held in respondents who had a very sufficient

income, namely 59.7±17.1. Followed by respondents with sufficient incomes, namely 54.9±19.0. While the lowest score was had in respondents with less income 45.1±20.7.38 The amount of income is usually influenced by the level of education, in respondents who have higher education it is more likely to get a job and a better income. So that patients with higher incomes can more easily meet access to services and needs caused by the situation.

The effect of long illness on quality of life

The length of illness was obtained from the time the patient was diagnosed with breast cancer by the surgical oncology specialist until the research period took place. Although the length of illness does not affect the quality of life of breast cancer patients (Pvalue 0.073), the two have different averages. Patients who were newly diagnosed <2 years had a better average score (54.35±17.12) than patients who were diagnosed ≥2 years old (45.57±19.28). This is in line with previous research conducted by Fahimeh Sehhatie, et al, (2017) which stated that patients diagnosed ≥2 years had a worse quality of life than patients diagnosed in ≤1 year. This can be caused by mental and psychological problems during the period during the diagnosis period.19 These results are consistent with a study conducted by Reem Arkel, et al, 2017 which stated that patients diagnosed within 1 – 2 years had better physical function compared to patients diagnosed ≥ 5 years.53 This is in contrast to the research of Holzner et al, which states that patients diagnosed ≥2 years (2 – 5 years) begin to improve their quality of life compared to patients diagnosed <2 years. However, the quality of life will decline again if the patient has been diagnosed with breast cancer for >5 years.55In this study, the p value was 0.073 > 0.05. This is supported by research conducted by Vina Asna, et al (2020) using different instruments, namely FACT-B and FACIT Sp-12, it was obtained that the p value of the length of illness was 0.773 > 0.05 which indicates that the length of illness does not directly affect the quality of life of breast cancer patients.

Influence of stage on quality of life

Stage has a significant influence on respondents' quality of life. Respondents with early stages had a higher average (63.38±17.12) with the moderate category, while advanced stages (45.31±15.13) had a higher average. According to research by Vina Asna, et al (2020) using different instruments, namely FACT-B and FACIT Sp-12, a pvalue of 0.015 < 0.05 was obtained which shows that income has an effect on the quality of life of breast cancer patients undergoing chemotherapy. Another study by Toulasik (2019) found that respondents with early stages showed better quality of life compared to advanced stages. As a result of cancer cells that have metastasized and attacked various types of cancer cells in their bodies as well as exposure to the effects of chemotherapy that may last longer, causing patients with advanced stages to generally have more severe physical and psychological problems.

The effect of the type of treatment on quality of life

In the table, it is concluded that the type of mastectomy therapy treatment does not affect or directly relate to the quality of life of breast cancer patients. This is evidenced by the results of the statistical test with a pvalue of 0.350 > 0.05. Respondents who had undergone a

mastectomy actually had a lower average (50.25±18.80) than those who had not/had not had a mastectomy (53.90±17.06). Both scores are included in the medium QoL category. This is in line with the results of a study by May Leng Tan, et al (2014) in Singapore which stated that the type of treatment had no effect on quality of life, as evidenced by a p value of 0.814 > 0.05. However, the average value of mastectomy is still higher than the average obtained in this study, which is 88.21±15.78 which is included in the good category.56 It is also supported by the results of research by Josephine, et al (2024) which stated that there is no average difference between patients with mastectomy and patients with Breast Conservative Surgery (BCS). Self body image between the two had the same high score, but patients with BCS had better scores.57 This result is quite in contrast to the results of previous research by Elvin, Russel, et al (2019) which found that mastectomy affects the quality of life of breast cancer patients. Several significant factors that can affect the quality of life of breast cancer patients undergoing BCS (breast conserving surgery) vs mastectomy. The first factor is that the body image of patients with mastectomy has a worse score than patients with BCS because mastectomy is a more radical surgical procedure. This affects the asymmetrical structure of the breast and reduces the attractiveness of the sufferer.58 This is supported by previous research by Fitri Haryati, et al (2019) which stated that body image is related to the quality of life of breast cancer patients with a p value of 0.000 < 0.05 with an r value of 0.966 which means that the higher the body image, the higher the quality of life. This means that body image affects the quality of life of breast cancer patients. Furthermore, the factors of future perspective in patients with mastectomy have a significant effect on quality of life, generally patients with mastectomy have an effect on a more severe stage of breast cancer and a worse prognosis.57,58

The effect of nutritional status on quality of life

Based on the table, a p value of 0.045 < 0.05 was obtained, which shows that nutritional status has an influence on the quality of life of breast cancer patients. The highest average was experienced in respondents who had the obesity BMI category, which was 56.54±09.34, while the lowest average was experienced by patients with a low BMI, which was 42.26±23.89. Several studies with different instruments in assessing nutritional status. As researched by Susetyowati, et al. (2016) at dr. Sardjito Hospital Yogyakarta stated that there is a significant influence between nutritional status and the quality of life of breast cancer patients as evidenced by the pvalue of 0.012 < 0.05.59 Supported by research by Andree Kurniawan, et al. (2015) stated that nutritional status has a significant influence on the components of quality of life.42 Likewise, research by Shooka Mohammadi, et al. (2013) who showed that nutritional status is closely related to the quality of life of breast cancer patients, this is evidenced by the p value of 0.026 < 0.05.61 However, in contrast to Lua's study, Salihah (2012) in Malaysia, shows the opposite. Nutritional status (BMI) in general had no effect on overall quality of life, with a p value of 0.170 > 0.05, although unrelated, it was known that a higher BMI score showed a better influence on several scales of quality of life, namely emotional and cognitive scales, and rarely experienced physical fatigue.61

The effect of anxiety on quality of life

The table above shows that anxiety has an effect on the quality of life of breast cancer patients. This is evidenced by a p value of <0.001 or < 0.05. There is an average difference in each level of anxiety. The best average quality of life score was obtained by patients who did not have anxiety or were normal, namely 75.00±13.94. Followed by mild anxiety, which is 60.74±13.95. Then moderate anxiety was 44.81±15.99, while the last was bad anxiety with a score of 35.93±12.80 In patients without anxiety, the average score was in the category of good quality of life, while the rest were included in the medium quality of life score. This is supported by the results of previous research by Alifka Deti, et al (2023) which stated that psychological stress (anxiety and depression) can directly affect the quality of life of breast cancer patients, so it is closely related to the long-term survival of the sufferer.(Mokhtari-Hessari & Montazeri, 2020)

This is in line with research conducted by Macarena, et al. (2022) which uses the State Anxiety Inventory (STAI) as a tool to measure anxiety, it was found that anxiety symptoms have an effect on quality of life (QoL) with a p value of 0.000 < 0.05.62 In breast cancer patients, family and social support greatly affect the quality of life of breast cancer patients. The role of a partner or loved one who provides support while undergoing treatment will increase the patient's self-esteem and confidence to recover, so that it can increase the patient's immunity and improve psychological conditions such as anxiety or depression previously suffered by the patient, so that the quality of life can be improved to the maximum.55 Therefore, in the process of cancer treatment, psychological aspects and social support are important to be considered, so that the patient still has great enthusiasm and motivation to keep thinking positively about the treatment he is undergoing(Mokhtari-Hessari & Montazeri, 2020).

CONCLUSION

The study found that breast cancer patients undergoing chemotherapy at Gunung Jati Cirebon Hospital were mostly aged 45–55 years (60.8%), with the majority having incomes below the minimum wage (73.2%), a disease duration of less than two years, advanced cancer stage (66.0%), having undergone mastectomy (67.0%), normal nutritional status (41.2%), and experiencing mild anxiety (39.2%). Quality of life was positively associated with younger age, higher income, earlier cancer stage, better nutritional status, and lower anxiety; length of illness and type of treatment were not significant, although patients without mastectomy and those with a short illness duration reported higher average scores. Future research should explore psychosocial factors and interventions that could further enhance the quality of life for breast cancer patients during chemotherapy in regional hospital settings.

REFERENCES

Ardiani, H., Lismayanti, L., & Rosnawaty, R. (2019). Faktor-faktor yang Berpengaruh terhadap Kualitas Hidup Lansia di Kelurahan Mugarsari Kecamatan Tamansari Kota

Tasikmalaya Tahun 2014. *Healthcare Nursing Journal*, *1*(1), 42–50. http://www.depkes.go.id

Asia, S. E. (2024). *South-eastern asia*. 9–10. https://doi.org/10.1002/ijc.33588

Aslam, M. S., Naveed, S., Ahmed, A., Abbas, Z., Gull, I., & Athar, M. A. (2014). Side Effects of Chemotherapy in Cancer Patients and Evaluation of Patients Opinion about Starvation Based Differential Chemotherapy. *Journal of Cancer Therapy*, *5*(8), 817–822. https://doi.org/10.4236/jct.2014.58089

Biparva, A. J., Raoofi, S., Rafiei, S., Kan, F. P., Kazerooni, M., Bagheribayati, F., Masoumi, M., Doustmehraban, M., Sanaei, M., & Zarabi, F. (2022). Global quality of life in breast cancer: systematic review and meta-analysis. BMJ Supportive & Palliative Care, 13(e3), e528–e536.

Bozzette, S. A. (2011). HIV and cardiovascular disease. *Clinical Infectious Diseases*, *53*, 92–93. https://doi.org/10.1093/cid/cir275

Costa, W. A., Monteiro, M. N., Queiroz, J. F., & Gonçalves, A. K. (2017). Pain and quality of life in breast cancer patients. Clinics, 72(12), 758–763.

Ferlay, J., Rebecca, M. E., & Mph, L. S. (2024). *Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries*. 229–263. https://doi.org/10.3322/caac.21834

Gita, S., Jain, D. P. M. B., & Sharma, D. K. K. (2023). Quality of life of breast cancer patients. *International Midwifery and Nursing Practice*, *6*(1), 22–24. https://doi.org/10.33545/26630427.2023.v6.i1a.130

Hero, S. K. (2020). Faktor Resiko Kanker Payudara. *J Bagus*, *2*(1), 402–406.

International, W. C. R. F. (2022). *Breast Cancer Statistics*. https://www.wcrf.org/cancer-trends/breast-cancer-statistics/

Jones, H. E., Calixte, C., Manze, M., Perlman, M., Rubin, S., Roberts, L., & Romeo, D. (2020). Primary care patients' preferences for reproductive health services needs assessment and service availability in New York Federally Qualified Health Center. *Contraception*, *101*(4), 226–230. https://doi.org/10.1016/j.contraception.2019.12.003

Lenz-Alcayaga, R., Paredes-Fernández, D., Verdejo, F. G., Páez-Pizarro, L., & Hernández-Sánchez, K. (2025). Economic evaluation: Impact on costs, time, and productivity of the incorporation of integrative digital pathology (IDP) in the anatomopathological analysis of breast cancer in a national reference public provider in Chile. Journal of Pathology Informatics, 16, 100417. https://doi.org/https://doi.org/10.1016/j.jpi.2024.100417

Lewandowska, A., Rudzki, G., & Lewandowski, T. (2020). Quality of life of cancer patients treated with chemotherapy. *International Journal of Environmental Research and Public Health*, *17*(19). https://doi.org/10.3390/ijerph17196938

Liambo, I. S., Frisitiohady, A., & Malaka, M. H. (2022). Review: Patofisiologi, Epidemiologi, dan Lini Sel Kanker Payudara. *Pharmauho Jurnal Farmasi Sains Dan Kesehatan*, *8*(1), 17–22. https://doi.org/10.33772/pharmauho.v8i

Mokhtari-Hessari, P., & Montazeri, A. (2020). Health-related quality of life in breast cancer patients: review of reviews from 2008 to 2018. Health and Quality of Life Outcomes, 18(1), 338.

Organization, W. H. (2020). *Global Cancer Observatory, Indonesia Fact Sheet*. https://www.who.int/publications/m/item/cancer-idn-2020

Organization, W. H. (2022). *Global Cancer Observatory, Indonesia Fact Sheet*. https://gco.iarc.who.int/media/globocan/factsheets/populations/360-indonesia-fact-sheet.pdf

Paraskevi, T. (2012). Quality of life outcomes in patients with breast cancer. Oncology Reviews, 6(1), e2–e2.

Paris, D. H., & White, N. J. (2011). South-Eastern Asia. In *Infectious Diseases: A Geographic Guide* (pp. 170–187). https://doi.org/10.1002/9781119971641.ch13

Shurtleff, D., & Lawrence, D. (2012). HIV and substance abuse: a commentary. *Current HIV Research*, *10*(2). https://doi.org/10.2174/157016212802138760

Wamai, R. G., Morris, B. J., & Bailis, S. A. (2011). Male circumcision for HIV prevention: current evidence and implementation in sub-Saharan Africa. *Journal of the International AIDS Society*, *14*, 49. https://doi.org/10.1186/1758-2652-14-49

Wang, Y. L., Wu, D., Nguyen-Huynh, M. N., Zhou, Y., Wang, C. X., Zhao, X. Q., Liao, X. L., Liu, L. P., Wang, Y. J., & Investigators, Pr. S. (2010). Antithrombotic management of ischaemic stroke and transient ischaemic attack in China: A consecutive cross-sectional survey. *Clinical and Experimental Pharmacology and Physiology*, *37*(8), 775–781.