A Correlational Study of Self-Efficacy, Marital Status, and Quality of Life in Breast Cancer Patients in Aceh, Indonesia

Endonezya'nın Aceh Şehrindeki Meme Kanseri Hastalarında Öz Yeterlilik, Medeni Durum ve Yaşam Kalitesi Üzerine İlişkisel Bir Çalışma
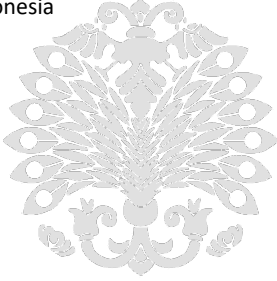
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ABSTRACT

Objective: To investigate the relationship between self-efficacy, marital status, and quality of life among Banda Aceh Hospital chemotherapy patients in Indonesia.

Methods: The descriptive design was correlational with a cross-sectional approach. Sampling type of the research method used purposive sampling. The sample size of 100 breast cancer patients undergoing chemotherapy met the inclusion criteria. Instruments for this research used the Questionnaire Quality of Life-Breast Cancer (QOL-BC) and the Symptom Management Breast Cancer Self-Efficacy Scale (SMSES-BC). Multiple linear regression and spearman rank correlation were used in this analysis.

Results: Self-efficacy ($P<.001$), marital status ($P=.023$), and quality of life affect breast cancer chemotherapy patients. The regression coefficient value indicated that self-efficacy (B=1.013) was the primary factor influencing the quality of life of breast cancer patients who are undergoing chemotherapy treatment.

Conclusion: Self-efficacy and marital status affect breast cancer chemotherapy patients' quality of life in Aceh, Indonesia. High-self-efficacy patients manage themselves well. They avoid treatment side effects, whereas status patients are married, stay together, and improve their husbands' lives. Research findings This suggests that breast cancer patients and their families should be brought together to boost self-efficacy and motivation for treatment.

Keywords: Breast cancer, chemotherapy, marital status, quality of life, self-efficacy

ÖZ

Amaç: Endonezya'daki Banda Aceh Hastanesi kemoterapi hastalarında öz yeterlilik, medeni durum ve yaşam kalitesi arasındaki ilişkiyi araştırmak.

Yöntemler: Yöntem Kesitsel yaklaşıma sahip tanımlayıcı korelasyonel araştırma tasarımıdır. Kullanılan Örneklem türü amaçlı örneklemedir. Kemoterapi gören 100 meme kanseri hastasından oluşan örneklem büyüklüğü içerik kriterlerini karşılamıştır. Araştırma araçları olarak Meme Kanseri Yaşam Kalitesi Anketi (QOL-BC) ve Meme Kanseri Semptom Yönetimi Öz Yeterlilik Ölçeği (SMSES-BC) kullanılmıştır. Analizde çoklu doğrusal regresyon ve Spearman sıra korelasyonu kullanılmıştır.

Bulgular: Öz yeterlilik (P<.001), medeni durum (P=.023) ve yaşam kalitesi meme kanseri kemoterapisi alan hastaları etkilemektedir. Regresyon katsayısı değeri, kemoterapi tedavisi gören meme kanseri hastalarının yaşam kalitesini etkileyen birincil faktörün öz yeterlilik (B=1.013) olduğunu göstermiştir.

Sonuç: Öz yeterlilik ve medeni durum Endonezya'nın Aceh kentindeki meme kanseri kemoterapi hastalarının yaşam kalitesini etkilemektedir. Öz yeterliliği yüksek hastalar kendilerini iyi yönetirler. Statü hastaları evliyken, birlikte yaşarken ve eşlerinin yaşamlarını kolaylaştırırken tedavinin yan etkilerinden kaçınırlar. Araştırma bulguları tedavi olanların öz yeterliliğini ve motivasyonu artırmak için meme kanseri hastaları ve ailelerinin bir araya getirilmesi gerektiğini göstermektedir.

Anahtar Kelimeler: Meme Kanseri, Kemoterapi, Medeni Durum, Yaşam Kalitesi, Öz-yeterlilik

INTRODUCTION

Breast cancer represents the most frequently detected type of cancer and stands as a prominent contributor to female mortality on a global scale.[1] In the year 2020, the global incidence of breast cancer accounted for 11.7% of all reported cases. The incidence of cancer cases in Asian countries is significantly elevated, including 45.4% of documented instances. Furthermore, it is noteworthy that the global mortality rate attributed to cancer stands at 6.9%. It is worth mentioning that Asian nations have the highest fatality rate, reaching 50.5%.[2] Based on the findings of the World Health Organization (WHO)[3], it has provided an estimation indicating that approximately 20 million patients will be diagnosed with cancer and 10 million will die in 2021. The number of breast cancer cases in Indonesia will be the highest among other cancer cases in 2020, reaching 30.8% with a mortality rate of 9.6%.[4] The increase in breast cancer cases follows advances in breast cancer diagnosis and treatment, which can increase life expectancy.[5] Breast cancer patients undergoing chemotherapy experience changes in all their life activities due to breast cancer metastasis. Breast cancer patients experience physical, mental, and economic problems for themselves and their families, requiring changes in the lifestyle and dynamics of family members.[6] Breast cancer patients showed a decreased quality of life in most functions and symptoms because of pain; when general health assessments and the quality of life were not worse than controls, optimism remained positive with the quality of life. According to Finck et al. [7] women diagnosed with breast cancer experience a decline in their quality of life, a phenomenon influenced by factors such as the disease progression, the treatment modality employed, and the duration of the malignancy. The administration of chemotherapy may lead to several unpleasant effects, encompassing but not limited to nausea, dysgeusia, peripheral neuropathy, reduced appetite, myalgia, peripheral oedema, and peripheral neuropathy.[8]

The study conducted by Akin et al.[9] indicated that cancer patients encountered a significant level of weariness, and the overall quality of life for those undergoing chemotherapy was severely compromised. Previous study results revealed that breast cancer patients who had higher self-efficacy had lower anxiety and better adaption to difficult situations, supporting the concept that self-efficacy improves quality of life.[10] Women with high self-efficacy can manage themselves better from the side effects caused by chemotherapy. Shen et al. [11] stated that hope, social support, and self-efficacy accumulate with quality of life. The research results from Papadakos, Berta,

et al.[12] found that high self-efficacy can increase self-esteem in patients diagnosed with breast cancer for six months. Higher self-efficacy contributes significantly to higher chemotherapy self-management. The concept of self-efficacy has been found to have significant implications for various aspects of individual's well-being, including both physical and psychological health. It has been observed to influence pain management, the overall quality of life, one's self-image, the effectiveness of communication between healthcare professionals and patients, as well as individuals' behaviour in accessing health-related information.[13] The highest education of nurses in the cancer ward was master of nursing i.e. 1 person. The others were bachelor nursing 14 persons and nursing diploma (a 3 year nursing education in a university) as 13 persons. Nurses have an essential role in the psychosocial adjustment of women with breast cancer at the time of diagnosis to choose alternative interventions that are effective in improving psychosocial adaptation, thereby increasing self-ability, promoting social support, and motivating effective treatment.[14]

Their marital status significantly influences the quality of life experienced by breast cancer patients undergoing chemotherapy. The research results from Yuan et al.[15] stated that unmarried women have a higher risk of being diagnosed at the final stage with poor quality of life than married women. Wang et al.[16] also stated that unmarried women with ovarian cancer have an increased risk of death compared to married women.

The results of preliminary data collection showed that most breast cancer patients undergoing chemotherapy in Aceh, Indonesia, impacted their physical and psychological conditions, significantly affecting their self-efficacy and quality of life. Some breast cancer patients even felt helpless and intended to stop treatment. Chemotherapy due to a long distance from the hospital, economic limitations, and a lack of family support. Breast cancer is still a trend and issue in all countries, especially in Indonesia, because of the high levels of morbidity and mortality. However, previous research has examined much of the picture of quality of life and self-efficacy, focusing on chronic diseases in general. Nevertheless, there is a scarcity of study being conducted. A correlation has been seen between the marital status of individuals diagnosed with cancer and the influence of chemotherapy on their quality of life. The primary objective of this study is to produce original empirical data concerning the factors that have a substantial influence on the quality of life among breast cancer patients who are undergoing chemotherapy in the region of Aceh, Indonesia.

AIM

This study aimed to make a significant contribution to the improvement of self-efficacy behaviours among breast cancer patients in Aceh, Indonesia, by utilizing a suitably large sample size. The ultimate goal was to enhance the quality of life and autonomy of these individuals. The primary aim of this research was to determine the factors that most influence the quality of life of breast cancer patients undergoing chemotherapy in Aceh Province, Indonesia.

Research Question

1. What is the correlation between age, marital status, the highest level of education, the length of suffering from the breast cancer chemotherapy cycle, self-efficacy, and the chemotherapy cycle that influences the quality of life for breast cancer patients undergoing chemotherapy in Aceh Province, Indonesia?
2. Which factors have the strongest correlation with the quality of life in breast cancer patients undergoing chemotherapy in Aceh Province, Indonesia?

METHODS

Design

The present study employs a correlational descriptive design utilizing a cross-sectional approach. Associated factors (age, marital status, highest education, length of suffering from breast cancer chemotherapy cycle, self-efficacy, and quality of life) among patients with breast cancer undergoing chemotherapy in Aceh province of Indonesia.

Sample and Setting

This research used a purposive sampling method, namely a sample selection method based on specific aims and objectives set by the researcher. The inclusion criteria in this study were being 18 years or older at diagnosis, receiving post-operative chemotherapy, having a level of awareness of compos mentis, and not having been diagnosed with another type of cancer. The number of samples in this study used power analysis techniques. Sample size according to the G*Power application: using the p H1 affect a size correlation level of 0.136. Correlation ρ H1 - This refers to the correlation that the researcher wishes to detect. The smallest effect size that researchers wanted i.e. 0.136, which was in the medium category. Significance level value of α: 0.05, power 1-β: 0.80, and a number of predictors = 5, we obtained a sample size of 100 breast cancer patients who are undergoing chemotherapy treatment.

Data collection

The researcher asked the hospital for permission to conduct research. Then, the researcher requested for help from six enumerators who had received training in collecting research data. Data were collected during chemotherapy sessions. After obtaining approval and agreeing on the time for respondents willing to participate in this research, the researcher would collect data, starting with respondents who met the inclusion criteria. Then, the researcher would explain the aims and procedures of the study. The researcher would provide informed consent to be signed by the respondent. Then, researchers distributed questionnaires directly for respondents to fill out by motivating and convincing patients to fill them out truthfully. The researcher conducted a post-completion review of the questionnaire to verify the respondent's thorough completion of the instrument. Having the questionnaire completed by the respondent, it was rechecked to ensure it had been filled out entirely by the respondent. The present study was conducted within the adult chemotherapy facility at Aceh Hospital over the period spanning from January to December 2023.

Instruments

This study data was collected using the "Symptom Management Self-Efficacy Scale - Breast Cancer (SMSES-BC)" and the "Quality of Life-Breast Cancer (QoL-BC)" questionnaire.

Quality of Life-Breast Cancer (QoL-BC), which was created by Ferrell[17] in 2012. This questionnaire was a type of semantic differentiation scale with 46 questions in which there are four domains of quality of life, namely, physical health, 40 psychological well-being, social relationships, and relationships with the environment. This research questionnaire contains positive and negative questions. The validity test for the QoL-BC questionnaire was 0.78, and the reliability was 0.89.

Symptom Management Self Efficacy Scale - Breast Cancer (SMSES-BC), according to Liang et al.[18] in 2015, in order to evaluate the self-efficacy levels of breast cancer patients who are undergoing chemotherapy treatment, a comprehensive assessment is required. SMSES-BC consisted of 27 questions with a semantic differentiation scale composed of 3 subscales the problem-solving ability, the capacity to mitigate the adverse effects induced by chemotherapy and the capacity to regulate emotional responses. The SMSES-BC questionnaire had a correlation coefficient validity value of 0.40, while its reliability SMSES-BC, Cronbach's alpha value was 0.96.

The scale of answer choices for the QOL-BC and SMSES-BC questionnaire questions was 0-10. The measuring scale in the QOL-BC and SMSES-BC questionnaire used a ratio measuring scale. QOL-BC measuring results are 0-460, and

SMES-BC measuring results are 0-270. A higher score indicates a higher quality of life in breast cancer patients undergoing chemotherapy. A higher score indicates higher self-efficacy in breast cancer patients undergoing chemotherapy. QOL-BC and SMSES-BC used the mean value and standard deviation because the data is normally distributed.

Ethical Consideration

This research activity complies with the principles of the World Medical Association Code of Ethics (The Declaration of Helsinki). The local ethics committee of Aceh Hospital, Indonesia approved this research (Number: 066/EA/FK-RSUDZA/2022; Date: 18th April 2022). Written consent was obtained from participants in this study.

Statistical analysis

This research analysis used the Statistical Package Statistical Program for Social, version 27.0 (IBM Corp., Armonk, New York, the United States of America). This research used descriptive analysis and the Kolmogorov-Smirnov normality test, with the results of the data not being normally distributed with a value of $P <.05$. This study used bivariate Spearman's rank correlation analysis to identify the correlation of each variable: age, marital status, and education. Finally, the length of time spent suffering from breast cancer, chemotherapy cycles, and self-efficacy with the quality-of-life Multiple linear regression analysis was used in multivariate analysis to determine the correlation between age, marital status, highest education, duration of breast cancer, chemotherapy cycles, and self-efficacy with the quality of life. Nominal or numerical scale independent variables and numerical scale dependent variables used multiple linear regression analysis. [19]

RESULTS

Table 1 showed that the respondents in this study were all Muslim (100%), with the majority of their marital status being married (91.0%). Most of the respondents' highest education was middle education (51.0%), with the length of time patients had breast cancer generally being 30-38 months (22.0%). A set of chemotherapy cycles most frequently undergone by respondents was two (22.0%).

Table 2 showed that the mean value of respondent age is 48.22 (SD=8.858), quality of life had a mean value of 248.06 (SD=66.348), and self-efficacy had a mean value of 157.90 (SD=48.781).

In Table 3, the results showed a more significant correlation value for the self-efficacy variable with the quality of life (r=0.938) than for the other variables. The Spearman test analysis yielded a significant correlation *(P< .001)* indicating

a strong association. The objective of this study was to examine the potential connection between self-efficacy

Table 1. Frequency Distribution of Characteristics Respondent at Banda Aceh Hospital, Indonesia (n=100)

Variable	Frequency (n)	Percentage (%)
Religion		
Muslim	100	100
Marital Status		
Married	91	91.0
Not married	9	9.0
Highest Education		
Higher Education	17	17,0
Middle Education	51	51.0
Basic Education	29	29.0
No School	3	3,0
Length of Suffering from Breast Cancer (Months)		
3-11	15	15.0
12-20	21	21.0
21-29	14	114.0
30-38	22	22.0
48-56	14	14.0
57-65	9	9.0
66-74	5	5.0
Chemotherapy Cycle		
1	7	7.0
2	22	22.0
3	17	17.0
4	15	15.0
5	18	18.0
6	15	15.0
8	4	4.0
9	3	3.0

and the quality of life in breast cancer patients undergoing chemotherapy. A positive correlation relationship showed that the higher the self-efficacy level value, the higher the quality-of-life value. The Spearman analytical test yielded a statistically significant correlation between marital status and quality of life (r = -0.227, *P* = .023), indicating a modest negative association. The ensuing research findings revealed a statistically significant positive link between recent schooling and quality of life (r = 0.386, *P*< .001).

Table 2. Mean Age Score, Quality of Life and Self-Efficacy of Respondents at Banda Aceh Hospital, Indonesia (n=100)

Variable	Mean (M)	Standard Deviation (SD)
Age	48.24	8.858
Quality of Life	248.06	66.348
Self-Efficacy	157.90	48.781

Table 3. Distribution of Quality-of-Life Scores According to Respondents' Age, Length of Breast Cancer Suffering, Chemotherapy Cycle and Self-Efficacy at Banda Aceh Hospital, Indonesia (n=100)

Variable	Quality of Life	
	r	P
Age	0.179	.075
Marital Status	-0.227*	.023
Highest Education	0.386**	<.001
Length of Suffering from Breast Cancer	-0.034	.737
Chemotherapy Cycle	-0.129	.202
Self-Efficacy	0.938**	<.001
r, Pearson coefficient; P, significance level (P < .05)		

The findings of the multiple linear regression analysis, as presented in Table 4, indicated that the optimal model consists of self-efficacy and marital status, with the exclusion of the final education variable. The magnitude of the linear regression coefficient in this study, as indicated by the derived equation model. This study examined the evaluation of the quality of life in breast cancer patients who are undergoing chemotherapy. The variables considered in this assessment included a range of 108.546 to 18.781, marital status, and self-efficacy, with an additional factor of 1.013. The examination of the multiple linear regression equation revealed that within the population of breast cancer patients undergoing chemotherapy, those who were not married and possessed elevated levels of self-efficacy are anticipated to observe a favourable influence on their quality of life. A presence of a constant term i.e. 108,546 had substantiated this assertion. The obtained regression coefficient of -18,781, indicated a statistically significant negative association between the marital status of unmarried patients and the quality of life experienced by breast cancer patients undergoing chemotherapy.

According to the analysis, there was a negative association between marital status and quality. On the other hand, the regression coefficient of 1.013 derived from the analysis indicates that there was a positive relationship between self-efficacy and the quality of life experienced by patients after undergoing chemotherapy treatment. The constant value had a probability of $P< .001$ ($P< .005$), indicating statistical significance. Similarly, the probability for the marital status variable was .001 ($P< .005$), again demonstrating statistical significance. Additionally, the self-efficacy variable had a probability of .001 ($P< .005$), further indicating statistical significance. The research indicated a statistically significant association between marital status and self-efficacy with the quality of life among breast cancer patients undergoing chemotherapy. The probability values obtained from the t-tests suggest that the constant value ($P< .001$), marital status ($P= .001$), and self-efficacy ($P< .001$) demonstrated statistical significance at a significance level of less than 0.05. As a result, indicating a noteworthy correlation between marital status and self-efficacy in relation to the quality of life among breast cancer patients undergoing chemotherapy. The results of this study suggested that self-efficacy (B = 1.013) was the primary factor influencing the quality of life of breast cancer patients who are receiving chemotherapy treatment.

DISCUSSION

The findings of this study revealed a robust positive correlation between self-efficacy and the quality of life experienced by breast cancer patients who are undergoing chemotherapy treatment. The results of this study were consistent with the findings of Moradi et al.20, suggesting a significant correlation between self-efficacy and the general well-being of breast cancer patients receiving chemotherapy treatment. This involved multiple characteristics, including bodily health, mental health, social ties, and satisfaction with the surrounding environment. The treatment and management of breast cancer had the potential to influence the overall well-being

Table 4. Multivariate Modeling of Marital Status and Self-Efficacy on the Quality of Life of Breast Cancer Patients with Chemotherapy (n=100)

Model 2	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std Error	Beta	t	P	Tolerance	VIF
(Constant)	108.546	8.639		12.564	**<.001**		
Self-Efficacy	1.013	0.033	0.938	30.270	**<.001**	0.992	1.008
Marital Status	-18.781	5.677	-0.103	-3.308	**.001**	0.992	1.008

Dependent Variable: Quality of Life; B - Standardized coefficients beta (Beta coefficient value of each existing independent variable); t – how far is the influence of marital status and self-efficacy variables in explaining quality of life variables; P - significance level (P < 0.05); VIF – Variance Inflation Factor

of individuals, although there were strategies that may be employed to mitigate the adverse effects and complications associated with these interventions. Previous studies had indicated that the physical and psychological health of breast cancer patients plays a crucial role in minimizing the detrimental consequences and undesirable outcomes that may arise from such treatments.[21,22] Based on the research conducted by Peters et al.[23] it had been shown that individuals who suffered from many chronic disorders and demonstrated to reduced levels of self-efficacy, together with increased disease complications, were more likely to encounter a decline in their overall quality of life. There existed a notable beneficial correlation between self-efficacy in managing symptoms related to breast cancer and the overall quality of life, as demonstrated by previous studies.[10,24] The existence of elevated levels of self-efficacy held the capacity to augment the comprehensive state of well-being and quality of life for those who had been diagnosed with breast cancer and are currently enduring chemotherapy treatment. The degree of self-efficacy demonstrated by individuals with breast cancer had a notable impact on their adherence to and tolerance of standard chemotherapy. However, the negative outcomes of ongoing chemotherapy treatment could potentially reduce an individual's self-efficacy, so affecting their overall quality of life.

This study's results state a negative relationship between marital status and the quality of life. The status of married cancer patients can improve the quality of life during chemotherapy. The results of this study followed research from Peuckmann et al.[26] who stated that married women with breast cancer have a higher quality of life than other groups of women. The research results of Tran et al.[26] also stated that breast cancer patients who lived with their husbands had a better quality of life in general health. However, it differs from the research results obtained by Thomas et al.[27]revealed that women who were unmarried when diagnosed with breast cancer were associated with better survival. Research from Lee & Yoon[28] confirms that the effects of changes in physical and sexual stress are related to marital intimacy, not sexual function, in breast cancer women with chemotherapy. Decreased sexual intimacy in married women with breast cancer causes psychological disorders and decreases the quality of life. Breast cancer can also increase partner stress due to changes in psychosocial behaviour due to changes in the husband's role in managing finances, decision-making, providing emotional support while the patient faces the

disease, and physiological barriers that affect sexual function research results from Banaee et al. [29] stated that partner training positively influenced chemotherapy treatment compliance in breast cancer patients. The need for physical and psychological support from a husband can help breast cancer patients deal with the symptoms they experience so that their quality of life improves while undergoing chemotherapy. Moreover, nurses provided nursing care for patients with cancer comprehensively for six sessions during chemotherapy preparation in Banda Aceh hospital. For example, patients with chemotherapy obtained vomiting. The first step that nurses implement is to give non-pharmacological interventions such as warm water intake, distraction, massage, and aromatherapy. When nurses had conducted several non-pharmacological interventions for the patients however general practitioner prescription was potentially needed.

Limitation of study
The limitations of this study are that it did not investigate the stage of breast cancer and did not follow a series of chemotherapy cycles in the study sample. The further research should be carried out among breast cancer patients with self-efficacy to increase the highest quality of life.

This study aims to examine the relationship between self-efficacy and marital status, and their impact on the quality of life experienced by breast cancer patients undergoing chemotherapy. The findings of this study demonstrate a significant positive association between self-efficacy and quality of life, alongside a moderate negative association between marital status and quality of life. Individuals with a heightened sense of self-efficacy demonstrate greater proficiency in efficiently mitigating the negative consequences associated with chemotherapy treatment. In contrast, a favourable association can be shown between married status and cohabitation with husbands among those diagnosed with breast cancer, resulting in an improved overall quality of life. The results of this study indicate that including a support network comprising persons impacted by breast cancer and their families, yields positive outcomes in augmenting the self-efficacy and motivation levels of breast cancer patients throughout their chemotherapy treatment. The role of nurses is vital to implement psychological intervention programs by providing assistance that supports breast cancer women undergoing the chemotherapy process, such as coping strategies, social support, religious support, and enthusiasm to fight the effects of chemotherapy.

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