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The Influence of Hospital Service Standards on Quality of Life and Level Severity Chemotherapy Induces Nausea Vomiting (CINV) in Breast Cancer Patients

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ABSTRACT

Background: Globally and in Indonesia, breast cancer is a major cause of both new cases and fatalities. One of the recommended therapies for people with breast cancer is chemotherapy. Measuring the quality of life of breast cancer patients receiving chemotherapy is necessary to evaluate the treatment provided. Side effects of chemotherapy include nausea and vomiting (CINV).
Purpose: The purpose of the study is to ascertain how hospital service standards impact the quality of life and severity of chemotherapy-induced nausea and vomiting (CINV) in patients receiving chemotherapy for breast cancer**.**
Methods: A non-equivalent control group design and a quasi-experimental research methodology were employed. The study population included patients with breast cancer receiving chemotherapy at the Baladhika Husada Hospital Jember Chemotherapy Unit and the nearby hospital Soebandi Jember. The study period was 3 weeks and the sample size was 60 patients.
Results: The significance value (two-tailed) of WHOQOL from Paired Sample T-Test is less than 0.000 or 0.05, this indicates that his WHOQOL score before and after the exam differed significantly. As for his MAT results, there is no significant difference between the pre-test and post-test phases, as indicated by the significance value p of MAT being more than 1.00 or 0.05.
Conclusion: The outcomes demonstrate that while the hospital's standard of has a positive impact on the quality of life but not proven effective in reducing patients' CINV complaints for patients receiving chemotherapy for breast cancer.

Keywords: hospital service standards, quality of life, Chemotherapy Include Nausea and Vomiting (CINV), breast cancer, chemotherapy

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BACKGROUND

According to the data, there were 684,996 breast cancer-related deaths and 2.2 million new cases globally. Global Cancer Observatory (Globocan) 2020. In the meantime, 68,858 new instances of breast cancer and nearly 22,000 fatalities were reported in Indonesia (Globocan, 2020). It was found that breast cancer accounts for 7% of deaths worldwide and 10% of all new infections in IndonesiaThese delays in diagnosing and treating breast cancer, and the delays in patients seeking treatment at hospitals, are responsible for the highest degree of perplexity and the greatest amount of burstiness (Hafiza et al., 2023; Hutajulu et al., 2022; Solikhah et al., 2020).

According to Nedeljković & Damjanović (2019), chemotherapy is a form of breast cancer treatment. This method utilizes cytostatic drugs to serve as agents to counteract cancerous cells (Ezzati et al., 2020; Pun & Jeong, 2021). The prescribed medicine works to eliminate harmful cells and prevent their development (Shin et al., 2020). There exist three variants of chemotherapy: complementing treatment, pre-treatment, and simultaneous treatment (Baldini et al., 2024). Chemotherapy can be a monotherapy or combined with surgery, radiotherapy, and immunotherapy for breast cancer treatment (Kong et al., 2022; Yu et al., 2019). Due to the fact that chemotherapy is the preferred treatment for breast cancer when paired with surgery, several Indonesian referral hospitals offer chemotherapy to patients (Gondhowiardjo et al., 2020).

Chemotherapy-treated breast cancer patients' quality of life must be measured in order to assess the effectiveness of the treatment (Lewandowska et al., 2020; Mu & Dwi Windarwati, 2023). Most breast cancer patients with Chemotherapy will experience changes related to their quality of life (Binotto et al., 2020). This is due to many factors, including the wrong side effects of Chemotherapy. The only one is nausea and vomiting as a consequence of Chemotherapy (CINV) (Dielenseger et al., 2019). It is hoped that the quality of life in these patients can be well maintained so that they can maintain their independence, carry out their daily activities well, and have a good health status during treatment.

When undergoing chemotherapy, patients can experience many side effects (Haidinger & Bauerfeind, 2019; Joly et al., 2019). These side effects can occur before, during, and even days after chemotherapy (Prieto-Callejero et al., 2020). There are also side effects that occur long after chemotherapy treatment (Joly et al., 2019). Physical or psychological symptoms are possible adverse effects (Lewandowska et al., 2020). Chemotherapy patients are most uncomfortable when they have chemotherapy-induced nausea and vomiting (CINV) (Iddrisu et al., 2020).

The most prevalent physical side effect that people with breast cancer experience as a result of chemotherapy is chemotherapy-induced nausea and vomiting (CINV) (Gautam et al., 2023). Patients' CINV varies in severity (Childs et al., 2019; Efe Ertürk & Taşcı, 2021). Age, gender, medical history, and the chemotherapy regimen all have an impact on how severe CINV is (Mosa et al., 2020). CINV can happen either right away or after cytotoxic therapy is administered (Huang et al., 2021; Naito et al., 2020).

Hospitals that provide standard hospital services carry out medical operations in accordance with the standard operating procedures (SOPs) created for every service that already exists. Refer to the SOPs of your local medical facility for breast cancer services. Breast cancer patients receiving chemotherapy can obtain her one-day chemotherapy service at Soebandi Jember and return home the same day. At Baladika Husada Jember Hospital, on the other hand, patients are required to check in one day prior to chemotherapy, start treatment on the second day, and leave the hospital the following day. There are no post-chemotherapy follow-up services available at these two hospitals. Therefore, the goal of the

study is to ascertain how hospital service standards impact the quality of life and severity of chemotherapy-induced nausea and vomiting (CINV) in patients receiving chemotherapy for breast cancer.

OBJECTIVE

Therefore, the goal of the study is to ascertain how hospital service standards impact the quality of life and severity of chemotherapy-induced nausea and vomiting (CINV) in patients receiving chemotherapy for breast cancer.

METHOD

This study employed a nonequivalent control group design and a quasi-experimental research methodology. The researcher met the respondent during chemotherapy for the pretest, and the responder completed the posttest when they adhered to the treatment plan. Patients receiving chemotherapy for breast cancer made up the study population at Chemotherapy room in Soebandi Jember and Baladhika Husada Hospital Jember. The research period was 3 weeks.

Using a purposive sampling methodology, the researcher selects samples based on distinctive qualities that align with the study goals. With a sample size of 60 participants, the researcher desires a 95% confidence level or a 5% margin of error. Chemotherapy-induced nausea and vomiting (CINV) was assessed using the Multinational Society for Supportive Care in Cancer (MASCC) Antiemetic Tools Questionnaire (MAT), whereas anxiety was assessed using the WHOQOL-BREF (World Health Organization Quality of Life) questionnaire. Data analysis with a paired sample t test using the IBM SPSS v.25 for Windows programme. This research obtained evidence of ethical worthiness with number No. 5107/UN10.F17.10.4/TU/2023 from the Health Research Ethics Committee, Faculty of Health Sciences, Brawijaya University.

RESULTS

The findings from this survey data are as follows:

Table 1. Characteristics of respondents

		Frequency	Percentage
Gender	Woman	120	100%
Citizenship	Jember	81	67%
	Beyond Jember	39	33%
Chemotherapy	Adjuvant	58	48%
	Neoadjuvant	62	52%

The respondent characteristics provided above indicate that women make up the majority of respondents who have breast cancer. Three-quarters of the respondents came from outside Jember, whereas the majority of them are inhabitants of Jember Regency. Adjuvant chemotherapy was administered to up to 48% of responders, whilst neoadjuvant chemotherapy was given to the remaining 52%.

Table 2. Characteristics of Quality of Life and CINV in Respondents

		Pre-test		***Post-test***	
		Frequency	**Percentage**	**Frequency**	**Percentage**
Quality pf Life (WHOQOL)	< 80	50	83 %	50	75 %
	> 80	10	17 %	10	25 %

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		Pre-test		***Post-test***	
		Frequency	**Percentage**	**Frequency**	**Percentage**
CINV (MAT)	Nausea < 24 hours	60	100%	60	100%
	Nausea > 24 hours	57	95 %	57	97 %
	Vomiting < 24 hours	3	5 %	3	5 %
	Vomiting > 24 hours	9	15 %	9	15 %

From Table 2, the quality of life of breast cancer patients is mostly below the value 80. That is, 83% before the test and even 75% after the test. In comparison, the majority of nausea for CINV measures happened less than 24 hours after chemotherapy at both pre- and post-trials, while the majority of vomiting happened more than 24 hours after chemotherapy. It has been demonstrated.

Table 3. *Paired Sample T-Test* on Anxiety and CINV

	Mean	Std. Dev	Std. Error	**Sig.**
WHOQOL Pre-Test – WHOQOL Post-Test	-.76667	.85105	.10987	**,000**
MAT Pre-Test – MAT Post-Test	.00000	1.17891	.15220	**1,000**

The significance value (two-tailed) of WHOQOL is less than 0.000 or 0.05, as can be shown in Table 3 above. This indicates that his WHOQOL score before and after the exam differed significantly. As for his MAT results, there is no significant difference between the pre-test and post-test phases, as indicated by the significance value p of MAT being more than 1.00 or 0.05. Based on these data, we conclude that whereas conventional hospital care has a significant impact on patients' quality of life, chemotherapy-induced nausea and vomiting (CINV) has little to no effect on patients receiving chemotherapy for breast cancer.

DISCUSSION

According to the facts above, women are more likely than men to develop breast cancer. Based on studies conducted by Solikhah et al., (2020), it was discovered that women who use hormonal contraceptives had a higher risk of developing breast cancer. It does not, however, rule out the chance that men can potentially develop breast cancer (Pruitt et al., 2020). Women also have higher levels of the hormone oestrogen than do men, which increases the risk of breast cancer, according to (Dedey et al., 2016). By utilising hormonal contraceptives to prevent pregnancy, a woman's risk of developing breast cancer is increased (Megawati & Rahayu, 2021). Thus, compared to men, women are more likely to acquire breast cancer.

Most of the people who responded are residents of Jember. The reason for this is that the treatment of patients is greatly affected by the distance between their residence and healthcare facilities (Kartikasari et al., 2022; Ramadhan et al., 2019). Health service accessibility and distance have an impact on how diseases are treated as well (Fitch et al., 2016). Because cancer treatment is expensive and time-consuming, respondents' financial situation has an impact on the course of their care. Therefore, having health insurance helps patients reduce the financial burden of the disease they are suffering from (Amalia et al., 2021; Mu & Dwi Windarwati, 2023). The distance from home to a medical facility affects the patient's treatment process if they become ill.

Adjuvant chemotherapy was the kind that was administered to the majority of respondents. The state that the majority of Indonesians who are afflicted with breast cancer

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receive an advanced diagnosis (Gondhowiardjo et al., 2020). Lack of public awareness regarding early breast cancer diagnosis. Marfianti (2021) and Rizka et al (2023) says the comparatively poor public education levels, which postpone screening and treatment, are two contributing factors. Kugbey et al (2019) found that women with higher socioeconomic status have more access to health services compared to those with lower socioeconomic status. Socioeconomic position and educational attainment have an impact on the diagnosis and, consequently, how the patient's treatment plan is implemented.

The results of measuring the quality of life in patients showed that most respondents experienced declining quality of life. The degree and quality of life of patients with breast cancer receiving chemotherapy have not been thoroughly documented in any other research. According to de Souza et al (2021) and Hassen et al (2019), the degree of nausea and vomiting a patient experiences during therapy may have an impact on their quality of life. The minor the patient's complaints during Chemotherapy, the higher the value of the patient's quality of life (Adamowicz & Baczkowska-Waliszewska, 2020). Quality of life is influenced by patient characteristics from patients (Dwi Windarwati, 2020). It is essential to measure the patient's quality of life during Chemotherapy to facilitate evaluation of the treatment that has been carried out.

The majority of patients have nausea and vomiting 24 hours after getting chemotherapy medicines, which is well-known when calculating CINV. Salihah et al., (2016) notes that nausea and vomiting are typical chemotherapy side effects. Chemotherapy-induced nausea and vomiting (CINV) can occur a few days or short while after treatment, according to Naito et al., (2020). The majority of chemotherapy drugs, including cyclophosphamide and anthracyclines, show mild emetogenic characteristics (Celio et al., 2019; Dupuis et al., 2020). Consequently, it is critical to track the symptoms of nausea and vomiting in patients after chemotherapy in order to support the assessment of CINV treatment.

It has been demonstrated through testing that standard hospital treatment has a positive impact on the quality of life for patients receiving chemotherapy for breast cancer. This is because patients are taught how to lower their chance of experiencing adverse effects from treatment as part of normal care. Current standard treatment in hospitals for breast cancer patients with Chemotherapy focuses on education about complaints during hospital treatment and education on how to reduce post-chemotherapy complaints while at home (Dielenseger et al., 2019). (Mu & Dwi Windarwati, 2023) stated that providing standard care in hospitals is quite good in maintaining the quality of life of patients with Chemotherapy. Ritvo et al., (2017) also conveyed a similar thing, stating that standard hospital care can maintain the patient's quality of life even though it does not improve significantly without additional intervention. Therefore, an exceptional standard of care is needed to maintain and improve the quality of life in breast cancer patients with Chemotherapy to complement the standard care currently available in hospitals.

The results obtained in the CINV measurement results were that standard hospital care was not proven effective in reducing patients' CINV complaints. This is due to standard hospital care; the ability to manage post-chemotherapy nausea and vomiting in patients is not good, and from the hospital, there is no ongoing care for complaint management while at home, resulting in patients' complaints of nausea and vomiting not decreasing when undergoing subsequent Chemotherapy (Huang et al., 2021). The current standard treatment in hospitals for breast cancer patients with Chemotherapy only focuses on education about complaints during hospital treatment, and there is no follow-up care while at home (Dielenseger et al., 2019). This causes patients and families to be confused about how to deal with complaints after the patient is taken home (Efe Ertürk & Taşcı, 2021). This also causes

many complaints of nausea and vomiting in patients while at home, which is not handled correctly and results in many other physical complaints during treatment (White et al., 2020). Therefore, exceptional standards of care are needed to help patients reduce and manage CINV complaints while undergoing Chemotherapy in addition to the current standards of care in hospitals.

CONCLUSION

Worldwide and in Indonesia, breast cancer is the most frequent type of cancer. Chemotherapy, a commonly used treatment for breast cancer, has an impact on patients' quality of life as well as cause adverse consequences, such as chemotherapy-induced nausea and vomiting (CINV). The outcomes of the Paired Samples Test demonstrate that while the hospital's standard of care has been shown to be important in preserving the patient's quality of life, it has no bearing on lowering the degree of Chemotherapy Nausea Vomiting (CINV) that the patient experiences in patients with breast cancer receiving chemotherapy. Good standard care is needed and is able to cover all patient needs so that breast cancer patients undergoing chemotherapy can maintain their current quality of life and minimise complaints of nausea and vomiting that patients may experience while undergoing chemotherapy.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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