FACTORS INHIBITING CHEMOTHERAPY TREATMENT IN BREAST CANCER PATIENTS: A LITERATURE REVIEW

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ABSTRACT

Background: Breast cancer requires chemotherapy treatment for survival in patients with advanced stages or metastasis. Chemotherapy is a primary treatment modality aimed at destroying or inhibiting the growth of cancer cells remaining after surgery. However, many patients are unable to complete chemotherapy regimens on schedule, resulting in decreased treatment effectiveness and increased risk of recurrence. **Methods**: Scientific articles were obtained from electronic databases including PubMed, Google Scholar, and ScienceDirect, covering publications between 2017 and 2025. **Results**: A review of eight articles meeting the inclusion criteria revealed that key inhibiting factors include psychological conditions (such as anxiety and depression), economic burden, chemotherapy side effects, lack of social support, and ineffective communication and education from health workers. **Conclusions**: This study concludes that multidimensional interventions are needed to improve chemotherapy adherence, including psychosocial empowerment, financial assistance, and enhanced therapeutic communication between patients and healthcare providers.

Keywords: *Barriers to treatment, Chemotherapy, Breast cancer adherence.*

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Introduction

Breast cancer is the most common type of cancer experienced by women worldwide, with incidence and mortality rates continuing to increase every year (Houghton & Hankinson, 2021; Kim et al., 2025; Smolarz et al., 2022). According to the World Health Organization (WHO, 2023), breast cancer has become the leading cause of cancer death in women with an estimated 2.3 million new cases in 2020 (Rahayu et al., 2025). One of the main modalities of breast cancer treatment is chemotherapy, which has an important role in reducing tumor burden and preventing the spread of cancer cells (Farghadani & Naidu, 2022; Wei et al., 2021). However, in practice, many patients do not complete the entire chemotherapy cycle due to various obstacles they encounter.

These barriers have a serious impact on patient prognosis and reduce their life expectancy. Therefore, comprehensively

understanding the inhibiting factors that reduce chemotherapy treatment is crucial in increasing the effectiveness of breast cancer therapy. This study is here to answer this urgency through a systematic literature review.

Previous studies have discussed many issues surrounding cancer patient compliance in undergoing chemotherapy. Several studies have highlighted physiological factors such as side effects of therapy, infectious complications such as febrile neutropenia, and anemia as the main causes of treatment discontinuation (Adekunle, 2022). Meanwhile, psychological aspects are also widely reported, such as anxiety, depression, and fear of medical procedures (Grusdat et al., 2022; Papadopoulou et al., 2022). However, there are still few studies that integrate clinical, psychosocial, cultural, and administrative factors simultaneously in one study framework. For example, Natawidjaja (2019) focused primarily on clinical aspects such as hemoglobin levels and febrile neutropenia as predictors of treatment disruption, without exploring psychological or cultural influences. Similarly, Pratiwi et al. (2017) examined anxiety in breast cancer patients undergoing chemotherapy but did not address clinical or systemic barriers. While these studies provide valuable insights, they do not comprehensively integrate multidimensional factors that simultaneously impact chemotherapy adherence. This literature review attempts to fill this gap by examining relevant recent studies, to gain a comprehensive understanding of the barriers that cause

decreased continuation of chemotherapy in breast cancer patients.

This study aims to identify and critically analyze various factors that hinder the sustainability of chemotherapy treatment in breast cancer patients based on previous research results. The main objective of this study is to answer the following questions: *What are the dominant factors leading breast cancer patients to discontinue chemotherapy, and how are these factors interrelated?* By raising this question, this article not only aims to reveal barriers that are individual and systemic, but also want to map the contribution of each factor to the patient's decision to continue or stop therapy.

Through a literature review approach, this study is expected to provide conceptual contributions for medical personnel, policy makers, and researchers in designing more targeted intervention strategies to improve therapy compliance in breast cancer patients.

Based on the initial synthesis of the reviewed literature, it appears that barriers to chemotherapy continuation cannot be explained by a single causal dimension. A combination of physiological factors such as fatigue and infection, as well as psychological factors such as anxiety and stigma, play a significant role in decreasing patient motivation. In addition, cultural barriers such as belief in alternative medicine, as well as systemic factors such as administrative delays and lack of coordination between medical personnel, also exacerbate this problem (Akeeb et al., 2023; Mao et al., 2022). These findings suggest that a multidimensional and interdisciplinary approach is needed to

address the challenges of breast cancer therapy. Therefore, this study proposes that integrative and locally adaptive interventions are important strategies to improve continuity of chemotherapy care.

These results provide a basis for developing more effective policies and clinical practices in the future.

Methods

The research method employed in this study was a literature review. Relevant articles were identified through searches in reputable electronic databases, namely PubMed, Google Scholar, and ScienceDirect, covering publications from 2017 to 2025. The search strategy was structured using the PICOS (Population, Intervention, Comparison, Outcome, Study design) framework. In this context, the population included female patients undergoing chemotherapy for breast cancer. The intervention referred to any program or factor influencing the continuation of chemotherapy. Comparisons were drawn between patients who completed chemotherapy and those who discontinued treatment. The outcomes assessed were factors inhibiting the continuation of care, while the study designs included observational studies such as cross-sectional, cohort, and case-control research.

Keywords were combined using the Boolean Operator technique to optimize search sensitivity and specificity. The keywords applied included "chemotherapy adherence," "breast cancer," "treatment barrier," "treatment discontinuation," and "chemotherapy interruption." To broaden the scope and ensure comprehensive coverage, additional synonyms such as "compliance," "completion rate," and "persistence" were also incorporated into the search strategy.

Inclusion criteria were: (1) articles published within the last nine years (2017-2025), (2) available in English or Indonesian, (3) accessible in full-text format, (4) published in reputable peer-reviewed journals, and (5) open-access or freely available. Exclusion criteria were: (1) articles in the form of reviews, meta-analyses, or systematic reviews, and (2) studies not specifically addressing factors inhibiting chemotherapy adherence in breast cancer patients.

All stages of identification and screening followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure transparency and reproducibility. PubMed was selected for its extensive indexing of biomedical and clinical research, ScienceDirect for its wide coverage of health sciences journals, and Google Scholar to retrieve grey literature and open-access articles. Other databases such as CINAHL and Embase were excluded due to access limitations and to maintain consistency in indexing standards across the selected sources.

From the initial search results, a total of 520 articles were found. After screening based on title and abstract, 84 articles were excluded because they were not relevant or did not meet the inclusion criteria. Furthermore, 35 articles were set aside because they were not available in full-text or were not written in the specified language. From the full-text screening of 50 articles, 37 articles were not suitable

because they did not use an observational design or did not specifically discuss barriers to chemotherapy continuation. Finally, 8 articles were selected and included in the analysis in this literature review, as explained in the PRISMA flowchart in Figure 1.
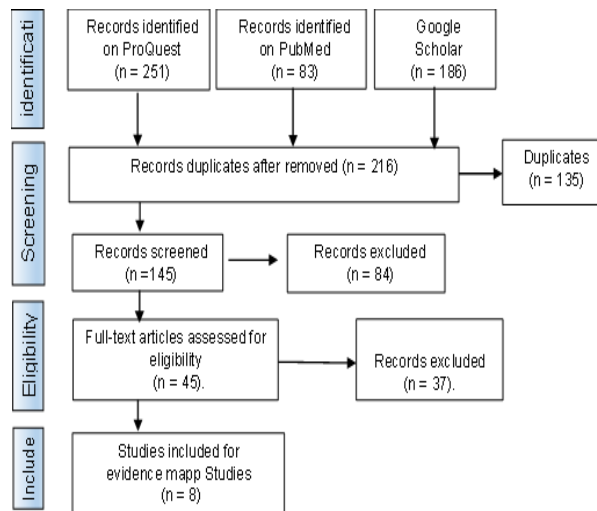

Figure 1. Diagram PRISMA

Results

Based on the eight articles reviewed in this literature review, chemotherapy treatment in breast cancer patients is influenced by various obstacles arising from clinical, psychological, social, and cultural aspects. Decreased compliance with chemotherapy schedules was reported to be caused by multiple factors.

Clinical factors were identified in several studies. Natawidjaja (2019) highlighted that hemoglobin levels below 10 g/dL correlated with longer hospital stays in solid cancer patients, which could disrupt subsequent chemotherapy schedules. Budiana and Febiani (2017) reported that febrile neutropenia remains a high-risk complication associated with chemotherapy, contributing to patients' reluctance to continue treatment. Djuwarno et al. (2023) described that side effects such as nausea, vomiting, and fatigue after chemotherapy were frequently cited as reasons for patients refusing further sessions.

Psychological aspects were also widely reported. Pratiwi et al. (2017) found that breast cancer patients' anxiety was primarily influenced by perceived threats to self-identity, including fear of death, changes in physical appearance, and loss of self-control. Astuti et al. (2022) observed that psychological and spiritual support provided by nurses was associated with reduced anxiety levels among patients undergoing chemotherapy.

Socio-cultural factors emerged as significant barriers in several studies. Meiyenti (2019) described that beliefs in traditional medicine, social influence from family and friends, and limited knowledge about cancer contributed to patients' decisions to delay or decline modern medical treatment. Dewi (2020) reported that compliance with chemotherapy schedules was closely related to patients' perceived quality of life and their relationships with health personnel.

Systemic and administrative challenges were also noted. Lafferty et al. (2020) identified that delays in chemotherapy often resulted from inconsistencies in care plans, late signatures from physicians, and time-consuming laboratory processes, which negatively affected treatment continuity.

The synthesis of these findings indicates that the factors inhibiting chemotherapy adherence are multidimensional and occur

across clinical, psychological, socio-cultural, and systemic domains. A literature review table summarizing the included studies, their objectives, methods, and conclusions is presented below.

Table 1. Literature Review Research Results

Article Title	Author & Year	Objective	Method	Population & Sample	Conclusion
Risk factors affecting length of stay in solid cancer patients with febrile neutropenia after chemotherapy	(Natawidjaja, 2019)	Knowing the risk factors that influence the length of hospitalization of solid cancer patients with FN after chemotherapy	Case control study without matching	46 patients who met the inclusion-exclusion criteria	Hb level < 10 gr/dl was significant as a risk factor for LOS > 5 days. ANC < 1.5 µL in all patients, but not significant for age ≥ 60, comorbid, and albumin < 3 gr/dl.
Overview of Factors Associated with Breast Cancer Patients' Anxiety Undergoing Chemotherapy	(Pratiwi et al., 2017)	Knowing the factors that influence breast cancer patient anxiety during chemotherapy	Quantitative descriptive	97 patient (accidental sampling)	Threat factors to the self-system dominate the patient's anxiety. Psychosocial intervention and relaxation techniques are needed.
The Relationship Between Compliance with Chemotherapy and Quality of Life in Breast Cancer Patients	(Dewi, 2020)	Determining the relationship between chemotherapy compliance and quality of life in breast cancer patients	Cross-sectional	27 patient (accidental sampling)	Compliance with chemotherapy was significantly associated with quality of life (p = 0.017). Support from medical personnel is very important.

Causes and Consequences of Chemotherapy Delays in Ambulatory Oncology Practices	(Lafferty et al., 2020)	Examining the causes and consequences of chemotherapy delays in outpatient oncology practice	Multisite qualitative (ethnography, interviews)	8 oncology practices, 46 interviews	Causes of delays: differences in care plans, last minute changes, delays in physician signatures, lab processes. Communication and documentation are key to improvement.
Febrile Neutropenia in Post Chemotherapy Patients	(Budiana & Febiani, 2017)	Reviewing the detection and management of FN as a complication chemotherapy	Clinical literature review	-	FN is an emergency condition with high mortality, still a feared complication despite the development of therapy. It requires high alertness from clinicians.
Overview of Post-Chemotherapy Treatment for Breast Cancer Patients at Gorontalo Provincial Hospital	(Djuwarno et al., 2023)	Knowing the description of post-chemotherapy side effects in breast cancer patients	Descriptive (SOAP)	1 patient at Gorontalo Regional Hospital	Side effects (nausea, vomiting, weakness) cause patients to be reluctant to continue chemotherapy. Side effects are a strong obstacle to continuing treatment.
Cultural Factors Inhibiting Cancer Patients from	(Meiyenti, 2019)	Examining socio-cultural barriers to	Qualitative (observation and interviews)	Cancer patients who are reluctant to	Cultural barriers : belief in traditional medicine, influence of

Seeking Treatment at Modern Medical Facilities		cancer treatment		go to the hospital	family/friends, lack of knowledge. This makes patients come late to the hospital.
The Influence of Psychological and Spiritual Support by Nurses on the Anxiety Level of Cancer Patients with Chemotherapy	(Astuti et al., 2022)	Measuring the influence of nurses' psychological-spiritual support on patient anxiety	Not explicitly stated in the abstract	Not explained in the abstract	Psychological and spiritual support from nurses is effective in reducing anxiety. This is important to maintain the sustainability of chemotherapy.

Based on the eight articles reviewed in this literature review, chemotherapy treatment in breast cancer patients is influenced by various obstacles arising from clinical, psychological, social, and cultural aspects. Decreased compliance with chemotherapy schedules was reported to be caused by multiple factors.

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The findings summarized in Table 1 collectively indicate that factors inhibiting chemotherapy adherence in breast cancer patients are multidimensional, involving clinical complications, psychological distress, socio-cultural barriers, and systemic issues within healthcare delivery.

Discussion

Discussion of clinical factors in decreasing chemotherapy adherence highlights the need for multidisciplinary interventions focusing on comprehensive management of medical complications. The findings from Natawidjaja (2019) and Budiana and Febiani (2017) confirm that anemia and febrile neutropenia are significant indicators of potential therapy disruption. Given that febrile neutropenia is an emergency condition, delays or insufficient preparedness in handling this complication can result in interruptions or discontinuation of chemotherapy schedules. Furthermore, Djuwarno et al. (2023) described that side effects such as nausea, vomiting, and fatigue directly contribute to patients' reluctance to continue treatment. These observations suggest that strengthening side effect management and increasing clinician preparedness are essential to maintain treatment continuity. Preparing an intensive

side effect monitoring system and providing supportive therapies, including antiemetics and nutritional supplementation, are important measures to address these challenges effectively.

In addition to clinical complications, psychological factors play a crucial role in shaping patients' adherence behaviors. Pratiwi et al. (2017) and Astuti et al. (2022) demonstrated that high anxiety levels, arising from fear of death, physical changes, and loss of autonomy, can undermine patients' motivation to complete chemotherapy protocols. Integrating psychosocial and spiritual support into oncology nursing care plans has shown promise in reducing anxiety and improving adherence. Considering that Eastern cultural contexts are often responsive to spiritual approaches, strengthening patients' religious and internal coping mechanisms may enhance their emotional resilience during prolonged treatment.

Socio-cultural influences further compound the complexity of chemotherapy adherence. Meiyenti (2019) observed that belief in traditional medicine, social influence, and low health literacy delay patients' engagement with modern treatment. These barriers highlight the necessity for participatory, culturally sensitive educational approaches that address misconceptions about cancer and its treatment. Involving community leaders and religious figures can be effective strategies to increase acceptance of chemotherapy and reduce cultural resistance.

Finally, systemic and administrative challenges also emerged as significant factors inhibiting adherence.

Lafferty et al. (2020) and Dewi (2020) identified that delays in scheduling, inconsistencies in care plans, and limited communication among healthcare teams significantly disrupt chemotherapy regimens. To overcome these obstacles, healthcare institutions need to improve service workflows, adopt electronic documentation and reminders, and shorten waiting times. The use of digital technologies, such as application-based scheduling tools and integrated medical records, can support more efficient care delivery and minimize dropout rates.

Overall, the literature indicates that an interdisciplinary, patient-centered approach that addresses clinical complications, psychological distress, socio-cultural barriers, and systemic inefficiencies is critical to improving chemotherapy adherence among breast cancer patients.

Conclusion

Based on this literature review, it can be concluded that decreased adherence to chemotherapy treatment in breast cancer patients is influenced by multiple, interrelated factors. Clinical complications, such as febrile neutropenia, anemia, and side effects including nausea and fatigue, significantly disrupt treatment schedules. Psychological factors, especially anxiety and fear related to treatment, further reduce patients' motivation to complete therapy. Socio-cultural influences, such as beliefs in traditional medicine and limited health literacy, delay or prevent engagement with modern care. Additionally, systemic barriers within healthcare facilities, including administrative delays and inconsistent care coordination, contribute to treatment discontinuation. Addressing these multidimensional challenges requires a comprehensive approach that integrates clinical management, psychological support, culturally sensitive education, and system-level improvements to promote better adherence among breast cancer patients undergoing chemotherapy.

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