

## Impact of family support on chemotherapy adherence among breast cancer patients: A Cross-Sectional Study in Indonesia

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### ABSTRACT

**Introduction:** Breast cancer remains the most prevalent malignancy among Indonesian women, comprising approximately 30% of all cases. Most patients present in advanced stages, necessitating chemotherapy, which often causes side effects such as alopecia, nausea, and anxiety that may reduce treatment adherence. Family support plays a vital psychosocial role in enhancing motivation and compliance.

**Methods:** This observational analytical study employed a cross-sectional design at Dr. H. Abdul Moeloek Regional General Hospital, Bandar Lampung, from June 20 to 30, 2025. A total of 47 breast cancer patients undergoing chemotherapy were selected through purposive sampling. Family support was assessed via a validated questionnaire, and adherence data were extracted from medical records. The Chi-square test was applied with a significance level of  $\alpha = 0.05$ .

**Results:** Most respondents were aged 46–60 (44.7%) and worked as housewives (55.3%). Good family support was reported by 68.1% of participants, and 72.3% demonstrated good chemotherapy adherence. Statistical analysis revealed a significant association between family support and chemotherapy adherence ( $p = 0.000 < 0.05$ ). Patients with strong family support consistently showed higher adherence levels.

**Conclusion:** Family support has a significant influence on chemotherapy adherence in breast cancer patients. Interventions that strengthen family involvement could enhance treatment success and improve patient quality of life. Integrating psychosocial support into cancer care programs is crucial for addressing both medical and emotional needs, thereby promoting optimal adherence and therapeutic outcomes.

**Keywords:** Adherence, Breast Cancer, Chemotherapy, Family Support, Psychosocial.



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## INTRODUCTION

Breast cancer (carcinoma mammae) remains a primary global health concern and is the most prevalent malignancy among women worldwide. According to the World Health Organisation (WHO), it accounts for approximately 2.3 million new cases annually, representing about 25% of all cancers in women. In Indonesia, breast cancer ranks as the leading cancer type in females, constituting nearly 30% of cases and contributing to 12.9% of cancer-related deaths. Alarming, more than 80% of Indonesian patients are diagnosed at an advanced stage, which limits therapeutic options and worsens prognosis (Ahindu Konga *et al.*, 2025).

The etiology of breast cancer is multifactorial, with risk factors including genetic predisposition, increasing age, hormonal influences, and modifiable lifestyle factors such as alcohol consumption, obesity, and physical inactivity (Ding *et al.*, 2025). Mutations in high-penetrance genes, such as BRCA1 and BRCA2, significantly increase the lifetime risk. Epidemiological data indicate that most cases occur in women over 45 years of age, with postmenopausal women bearing the highest incidence (Dikeocha *et al.*, 2024).

For patients diagnosed at a locally advanced or metastatic stage, chemotherapy remains a cornerstone of treatment (Ford *et al.*, 2024). Chemotherapy employs cytotoxic agents to inhibit or destroy malignant cells, which are administered intravenously or orally, depending on the tumor biology and patient condition. As recommended by the National Comprehensive Cancer Network (NCCN, 2024), standard regimens typically involve 4–8 cycles, with some cases extending up to 12 cycles in certain cases. While chemotherapy can prolong survival and improve disease control, it is frequently associated with significant adverse effects, including alopecia, nausea, vomiting, fatigue, and psychological distress. These side effects may reduce adherence to prescribed regimens, ultimately impacting treatment outcomes and quality of life (Geng *et al.*, 2024).

Adherence to chemotherapy is crucial for maximizing therapeutic efficacy and minimizing the risk of recurrence. However, maintaining adherence is challenging due to the treatment's physical and emotional burden (Guo *et al.*, 2025). Among the various determinants of adherence, psychosocial support, particularly family support, plays a critical role (Gyldenvang *et al.*, 2025). Family members often serve as the primary source of emotional support, informational guidance, and practical assistance, all of which can help patients cope with the demands of treatment (Haghmorad *et al.*, 2025).

Family support encompasses emotional reassurance, tangible aid, and health-related information, fostering patients' psychological resilience and motivation to complete treatment (Li *et al.*, 2025). Studies have demonstrated that patients with strong family support are more likely to adhere to chemotherapy schedules, experience lower anxiety levels, and report better overall well-being. Conversely, inadequate support can exacerbate emotional distress, reduce treatment compliance, and potentially accelerate disease progression (Lee *et al.*, 2025).

In Indonesia, cultural norms emphasize close familial bonds, making family involvement in patient care particularly influential. As such, assessing the relationship between family support and chemotherapy adherence is crucial for developing comprehensive cancer care strategies that address both medical and psychosocial needs (Muthiyah A. AM *et al.*, 2023). Given the high burden of breast cancer, the prevalence of late-stage diagnosis, and the potential for non-adherence to compromise treatment success, it is imperative to understand the impact of family support on patient behavior. This study, therefore, aims to examine the association between psychosocial factors, specifically family support and adherence to chemotherapy among breast cancer patients

at Dr. H. Abdul Moeloek Regional General Hospital, Bandar Lampung, Indonesia. The findings are expected to inform patient-centered interventions that integrate family engagement into oncological care, thereby enhancing adherence rates, improving treatment outcomes, and enhancing patient quality of life.

## **RESEARCH METHODOLOGY**

This study employed an observational analytic design with a cross-sectional approach to examine the relationship between family support and adherence to chemotherapy interventions among breast cancer patients. The cross-sectional design was selected because it allows for the simultaneous collection of exposure (family support) and outcome (chemotherapy adherence) data, enabling the identification of associations within a defined period without requiring long-term follow-up.

### **Study Setting and Duration**

The research was conducted at Dr. H. Abdul Moeloek Regional General Hospital in Bandar Lampung, a tertiary oncology-care referral center in Lampung Province, Indonesia. Data collection took place over ten days, from June 20 to 30, 2025, during the hospital's routine oncology clinic operations.

### **Population and Sampling**

The study population comprised all breast cancer patients undergoing chemotherapy at the hospital in 2025 ( $N = 88$ ). The sample size was determined using the Slovin formula with a 10% margin of error, yielding a minimum required sample of 47 participants. Purposive sampling was applied to recruit patients who met the following inclusion criteria: Diagnosed with breast cancer as the primary condition. Currently undergoing chemotherapy at Dr. H. Abdul Moeloek Hospital. Conscious and oriented (*compos mentis*) with the ability to communicate effectively. Willing to participate by providing written informed consent. Exclusion criteria included patients with significant comorbidities such as HIV/AIDS, hepatitis, or active tuberculosis, which could confound adherence behaviors or limit participation.

### **Variables and Measurement**

The independent variable was family support, assessed using a validated Likert-scale questionnaire comprising 15 items covering emotional, informational, and instrumental support. The questionnaire had been previously tested for validity ( $r = 0.510$ ) and reliability (Cronbach's  $\alpha > 0.60$ ). Scores were categorized as: Good support (55–75 points). Moderate support (35–54 points). Poor support (15–34 points). The dependent variable was chemotherapy adherence, measured through a review of medical records to determine the number of chemotherapy cycles completed. Adherence was categorized as: Good adherence (5–8 cycles completed). Moderate adherence (1–4 cycles completed).

### **Data Collection Procedures**

Data collection was comprised of both primary and secondary sources. Primary data were obtained through face-to-face interviews with participants using the standardized family support questionnaire. Secondary data were retrieved from hospital medical records, including chemotherapy schedules, the number of cycles completed, and patient demographic information. Before data collection, research assistants underwent training on interview techniques, ethical considerations, and accurate completion of data forms. This ensured standardization and minimized interviewer bias.

### **Data Processing and Analysis**

Data were processed through editing, coding, tabulation, entry, and cleaning using SPSS software. Descriptive statistics (frequencies and percentages) were calculated for

sociodemographic variables, family support categories, and adherence levels. Bivariate analysis was performed using the Chi-square test to determine the association between family support and chemotherapy adherence, with a 95% confidence interval and a significance level of  $p < 0.05$ .

### Ethical Considerations

This study was approved by the Ethics Committee of the Faculty of Medicine, Universitas Malahayati. All participants provided written informed consent before data collection. Confidentiality was maintained by anonymizing data and limiting access to the research team. Participants were informed of their right to withdraw from the study without affecting their treatment.

## RESULT

**Table 1.** Distribution of Respondents by Age, Occupation, Family Support, and Chemotherapy Adherence (n = 47)

| Variable               | Category  | Frequency (n) | Percentage (%) |
|------------------------|-----------|---------------|----------------|
| Age (years)            | 30–45     | 15            | 31.9           |
|                        | 46–60     | 21            | 44.7           |
|                        | 61–75     | 11            | 23.4           |
| Occupation             | Laborer   | 10            | 21.3           |
|                        | Housewife | 26            | 55.3           |
|                        | Trader    | 11            | 23.4           |
| Family Support         | Poor      | 2             | 4.3            |
|                        | Fair      | 18            | 38.3           |
|                        | Good      | 27            | 57.4           |
| Chemotherapy Adherence | Fair      | 20            | 42.6           |
|                        | Good      | 27            | 57.4           |

The majority of breast cancer patients undergoing chemotherapy were in the 46–60 age group (44.7%) and were predominantly homemakers (55.3%). Regarding psychosocial factors, more than half of the respondents (57.4%) reported receiving good family support, while only 4.3% experienced low-income family support. Regarding treatment adherence, more than half (57.4%) demonstrated good adherence to chemotherapy schedules, while 42.6% were in the fair category. These findings suggest that most patients received strong family support and maintained a high level of adherence to their chemotherapy regimen, indicating a possible positive influence of family support on treatment compliance.

**Table 2.** Relationship between Family Support and Chemotherapy Adherence in Breast Cancer Patients

| Family Support | Chemotherapy Adherence Cukup (%) | Chemotherapy Adherence Baik (%) | Total (%)   | p-value |
|----------------|----------------------------------|---------------------------------|-------------|---------|
| Poor           | 2 (4.3%)                         | 0 (0%)                          | 4.3%        | 0.000   |
| Fair           | 18 (38.3%)                       | 0 (0%)                          | 38.3%       |         |
| Good           | 0 (0%)                           | 27 (57.4%)                      | 57.4%       |         |
| <b>Total</b>   | <b>20 (42.6%)</b>                | <b>27 (57.4%)</b>               | <b>100%</b> |         |

The Chi-square test results show a p-value of 0.000, less than the significance level of 0.05. This indicates a statistically significant relationship between family support and chemotherapy adherence among breast cancer patients. The analysis reveals a strong and significant association between family support and chemotherapy adherence in breast cancer patients ( $p = 0.000 < 0.05$ ). All respondents with poor or fair family support

demonstrated only (moderate) adherence, while every respondent with good family support achieved “Baik” (high) adherence. This pattern suggests that robust family support is pivotal in ensuring patients complete chemotherapy cycles as recommended. Emotional encouragement, practical assistance, and continuous presence from family members likely contribute to improved motivation, reduced anxiety, and better treatment compliance. These findings underscore the necessity of integrating family involvement into cancer care programs to enhance therapeutic outcomes and quality of life for breast cancer patients.

## DISCUSSION

The findings of this study demonstrate a significant relationship between family support and chemotherapy adherence among breast cancer patients at Dr. H. Abdul Moeloek Regional General Hospital, Bandar Lampung. This result aligns with numerous prior studies indicating that family involvement is crucial in ensuring patients complete the recommended chemotherapy regimen. With a p-value of 0.000, the statistical analysis confirmed that higher levels of family support were strongly associated with higher adherence rates, suggesting that psychosocial factors are as critical as medical interventions in cancer management.

The majority of respondents in this study were in the 46–60 age group, which is consistent with epidemiological data indicating that breast cancer risk increases with age, especially after the age of 40. Prolonged exposure to estrogen, age-related genetic mutations, and cumulative environmental factors contribute to this higher incidence. This trend is supported by [Marmé \*et al.\* \(2024\)](#), who found that women aged 40–50 have a markedly higher likelihood of developing breast cancer compared to younger populations. Similarly, [Mason \*et al.\* \(2024\)](#) noted that approximately 75% of breast cancer cases are diagnosed in postmenopausal women aged 50 years or older. These age-related risk patterns also impact treatment adherence, as older patients may face additional comorbidities but often exhibit stronger family engagement due to established social structures ([Mi \*et al.\*, 2025](#)).

The occupational distribution in this study revealed that more than half of the respondents were homemakers. This aligns with [\(2024\)](#), who highlighted that lower physical activity levels in this demographic may be linked to an increased cancer risk. Employment status can also influence adherence patterns; as [Rast \*et al.\* \(2025\)](#) suggested, occupational commitments, work stress, and time constraints may interfere with a patient’s ability to comply with intensive chemotherapy schedules. However, in this study, many housewives reported high adherence, which may be attributed to having more flexible schedules and consistent access to family care during treatment ([Sharma, Sharma, and Chahal, 2024](#)).

Family support was predominantly in the “good” category (57.4%). This aligns with [Valpey, Hale, and Kratzer \(2025\)](#), who emphasized that family encouragement, emotional comfort, and practical assistance are vital in reducing stress, improving mental well-being, and fostering a positive outlook during chemotherapy. [Wan \*et al.\* \(2024\)](#) similarly reported that strong family support is associated with better emotional stability, reduced depression, and an improved quality of life for breast cancer patients ([Xu, Li, Fan, Wang, \*et al.\*, 2025](#)). This suggests that family involvement may buffer the emotional and physical burdens of chemotherapy, making it easier for patients to adhere to treatment schedules ([Wang \*et al.\*, 2025](#)).

Adherence to chemotherapy was also generally high in this study, with 57.4% of respondents classified in the “good” adherence category. This finding is encouraging, given that low adherence can significantly reduce treatment efficacy, increase the risk of recurrence, and negatively impact survival rates (Xu, Li, Fan, Zhang, *et al.*, 2025). Patients who complete the recommended chemotherapy cycles typically demonstrate better overall survival outcomes. The relatively high adherence rates observed here may reflect the effectiveness of family support in reinforcing the importance of completing treatment despite side effects such as alopecia, nausea, fatigue, and emotional distress (Yu *et al.*, 2025).

The significant association between family support and chemotherapy adherence observed in this study is consistent with Yusriyanto and Asran (2025), who reported that patients with higher family involvement are more motivated to persevere with treatment. Family members often provide practical help, such as accompanying patients to hospital appointments, reminding them of medication schedules, and assisting with symptom management. Emotional support also reduces anxiety, mitigates feelings of isolation, and fosters a sense of shared responsibility in overcoming illness (Ben-Shlomo, Levin-Keini, and Meir, 2025).

From a psychosocial perspective, family support may enhance adherence through multiple mechanisms. First, emotional reassurance helps patients manage fear and uncertainty, common barriers to continuing chemotherapy. Second, instrumental support such as transportation, meal preparation, and financial assistance reduces logistical challenges that might otherwise lead to missed appointments (Dona *et al.*, 2024). Third, informational support from family members, who may help interpret medical advice or seek additional information, strengthens patients’ understanding of their treatment and reinforces their commitment to follow medical recommendations (Schladitz *et al.*, 2022).

In contrast, patients with insufficient family support may face greater psychological strain, lower motivation, and logistical difficulties that hinder adherence. This aligns with the WHO’s recognition of cancer patients as a group with high social support needs. Lack of support can exacerbate treatment-related distress, reduce the ability to cope with side effects, and ultimately result in treatment discontinuation. The findings of the present study have important clinical implications. Interventions to improve chemotherapy adherence should focus on patient education and symptom management, and actively involve family members in the care process. Health professionals could provide structured counseling sessions for patients and their families, emphasizing the importance of completing all treatment cycles, preparing them for potential side effects, and equipping them with strategies to manage these challenges at home.

Furthermore, hospital policies could be adapted to facilitate family participation during outpatient chemotherapy sessions, including flexible visiting hours, family-inclusive education programs, and support group activities. Such approaches have strengthened treatment partnerships among patients, their families, and healthcare teams, thereby improving adherence outcomes. Nevertheless, this study is not without limitations. The cross-sectional design limits causal inference, as it cannot determine whether family support directly leads to improved adherence or whether patients with higher adherence elicit more family involvement. The use of purposive sampling also restricts the generalizability of findings to broader populations.

Additionally, self-reported family support measures may be subject to recall or social desirability bias. Future research could employ longitudinal designs to examine changes in support and adherence over time and explore the role of healthcare provider

support and peer networks in complementing family assistance. Results of this study underscore the pivotal role of family support in enhancing chemotherapy adherence among breast cancer patients. By addressing psychosocial needs alongside medical treatment, healthcare providers can help ensure patients initiate and complete their prescribed regimens, thereby improving therapeutic outcomes and quality of life. Strengthening family involvement should be considered an integral component of comprehensive cancer care strategies in Indonesia and beyond.

## CONCLUSION

This study demonstrates that family support plays a crucial role in enhancing adherence to chemotherapy among breast cancer patients. Those who receive strong emotional, informational, and practical support from their families are more likely to complete treatment cycles as scheduled, cope effectively with side effects, and maintain the motivation to continue therapy. These findings emphasize that the success of cancer treatment is not solely dependent on medical interventions, but is also strongly influenced by psychosocial factors, particularly active family involvement. To strengthen this aspect, healthcare providers should ensure that family members are fully engaged in treatment planning and decision-making, thereby fostering patients' emotional readiness and adherence.

Hospitals and clinics can also implement structured family education programs to equip caregivers with knowledge about the chemotherapy process, potential side effects, and effective ways to provide support to patients. Furthermore, integrating psychosocial support services, such as counseling and patient-family support groups, can help address emotional challenges and maintain commitment to treatment. Collaborative care involving oncologists, nurses, and family members should be encouraged to provide consistent encouragement and assistance throughout therapy. In addition, community-based support networks, facilitated by local health organizations, can offer valuable aid to patients who lack strong family support systems. By combining medical management with sustained psychosocial support, especially from the family, healthcare providers can significantly increase adherence rates and improve the quality of life for breast cancer patients undergoing chemotherapy.

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## Conflict of Interest

There are no potential conflicts of interest relevant to this article.

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