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ORIGINAL ARTICLE

Mothers' Knowledge of Breast Cancer and Anxiety Levels in Preoperative Patients.

Dodik Hartono[1]*

[1] Universitas Hafshawaty Zainul Hasan Probolinggo, Indonesia
* Corresponding Author: ners.dodikhartono@gmail.com

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ABSTRACT

Background: *Breast cancer is one of the most feared diseases among women due to its uncertain etiology, limited preventive measures, unpredictable disease progression, and the potential for pain and disability in advanced stages. Limited knowledge about breast cancer and surgical procedures may contribute to anxiety among patients, particularly during the preoperative period, which can negatively affect psychological readiness and clinical outcomes.* ***Objective:*** *This study aimed to examine the relationship between mothers' knowledge of breast cancer and anxiety levels among preoperative breast cancer patients.* ***Methods:*** *A correlational study with a cross-sectional design was conducted among preoperative breast cancer patients scheduled for surgery in a central surgical unit. A total of 84 respondents were recruited using accidental sampling. Data were collected using structured questionnaires to assess knowledge levels and the Hamilton Anxiety Rating Scale (HARS) to measure anxiety. Statistical analysis was performed using Spearman's rho correlation test with a significance level of 0.05.* ***Results****: The analysis showed a statistically significant relationship between mothers' knowledge of breast cancer and anxiety levels among preoperative breast cancer patients (p = 0.013), indicating that lower knowledge levels were associated with higher anxiety.* ***Conclusion****: There is a significant association between mothers' knowledge of breast cancer and preoperative anxiety levels. Strengthening patient education through structured health counseling and standardized operating procedures may help reduce anxiety and improve psychological preparedness before surgery.*

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A. Introduction

Breast cancer is the most common cancer among women worldwide and remains a major public health concern due to its high incidence, complex etiology, and substantial physical and psychological burden (World Health Organization [WHO], 2023). Despite advances in early detection and treatment, many patients continue to experience significant distress associated with diagnosis and treatment, particularly in low- and middle-income settings. The disease trajectory is often unpredictable, and advanced stages may involve severe pain, functional impairment, and reduced quality of life (Faller et al., 2013).

Beyond its physical consequences, breast cancer has profound psychological implications. Anxiety is one of the most prevalent psychological responses following

diagnosis and during treatment, affecting patients' emotional stability and coping capacity (Herschbach & Weis, 2018). Psychological distress in cancer patients has been associated with poorer treatment adherence, impaired immune function, and unfavorable clinical outcomes (Mystakidou et al., 2005). Therefore, addressing psychological aspects is an essential component of comprehensive breast cancer care.

Surgical intervention remains a cornerstone of breast cancer management, particularly for patients with operable disease. However, the preoperative period is often characterized by heightened anxiety related to uncertainty about surgical outcomes, anesthesia, postoperative pain, and potential changes in body image (Montgomery et al., 2010). Preoperative anxiety is not merely an emotional reaction but a clinically relevant condition that can influence physiological responses and postoperative recovery.

Evidence suggests that elevated preoperative anxiety is associated with increased postoperative pain, delayed recovery, and reduced patient satisfaction (Montgomery et al., 2010; Khan et al., 2010). Patients experiencing high anxiety levels may also demonstrate reduced cooperation with perioperative care and longer hospitalization. Consequently, identifying modifiable factors that contribute to preoperative anxiety is critical for improving surgical outcomes.

One important factor influencing anxiety is patients' knowledge regarding breast cancer and planned surgical procedures. Adequate knowledge enables patients to understand their condition, anticipate the treatment process, and develop effective coping strategies (Sjöling et al., 2003). Conversely, insufficient or inaccurate information may increase uncertainty, fear, and catastrophic thinking, thereby exacerbating anxiety (Khan et al., 2010).

Several studies have demonstrated that structured preoperative education and information provision can significantly reduce anxiety and improve psychological readiness for surgery (Sjöling et al., 2003; Faller et al., 2013). Psycho-oncological interventions that enhance patients' understanding and sense of control have been shown to reduce emotional distress and improve quality of life among cancer patients (Faller et al., 2013). These findings highlight the importance of knowledge as a key determinant of psychological adaptation in cancer care.

However, despite growing evidence supporting the role of patient education, empirical data examining the direct relationship between patients' knowledge levels and preoperative anxiety in breast cancer surgery remain limited. Existing studies often focus on general psychological distress rather than knowledge-specific factors influencing anxiety (Herschbach & Weis, 2018). This gap underscores the need for research exploring how patients' understanding of breast cancer relates to their anxiety levels prior to surgery.

Therefore, this study aims to examine the relationship between mothers' knowledge of breast cancer and anxiety levels among patients undergoing preoperative breast cancer surgery. Understanding this relationship is expected to provide evidence-based support for developing structured educational interventions to reduce anxiety and improve psychological preparedness in surgical breast cancer care.

B. Methods

This study employed a correlational design with a cross-sectional approach to examine the relationship between mothers' knowledge of breast cancer and anxiety levels among preoperative breast cancer patients. The cross-sectional design allowed for the simultaneous assessment of knowledge and anxiety at a single point in time, making it appropriate for identifying associations between variables without intervention or follow-up.

The study population consisted of breast cancer patients scheduled for surgical treatment in a central surgical unit. A total of 84 respondents were included in the study using accidental sampling, whereby eligible patients who met the inclusion criteria and were available during the data collection period were recruited. Inclusion criteria comprised adult female patients diagnosed with breast cancer, scheduled for elective surgery, and able to communicate effectively. Patients with severe cognitive impairment or diagnosed psychiatric disorders were excluded.

Two main variables were assessed in this study: knowledge of breast cancer as the independent variable and anxiety level as the dependent variable. Knowledge was defined as patients' understanding of breast cancer, including its nature, treatment options, and surgical procedures. Anxiety was defined as an emotional state characterized by feelings of tension, worry, and physiological arousal experienced prior to surgery.

Data were collected using validated instruments. Patients' knowledge of breast cancer was measured using a structured questionnaire developed based on relevant literature and clinical guidelines. Anxiety levels were assessed using the Hamilton Anxiety Rating Scale (HARS), a widely used and validated instrument for measuring anxiety severity in clinical populations. Higher scores on the HARS indicate greater levels of anxiety.

Prior to data collection, ethical approval was obtained from the relevant institutional authority. All participants received an explanation of the study objectives and procedures and provided informed consent. Confidentiality and anonymity were strictly maintained, and participants were informed of their right to withdraw from the study at any time without consequences.

Data analysis was performed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics were used to summarize respondents' characteristics and variable distributions. The relationship between knowledge levels and anxiety scores was analyzed using Spearman's rho correlation test, as the data were not assumed to be normally distributed. Statistical significance was set at a p-value of less than 0.05.

C. Results and Discussion

A total of 84 preoperative breast cancer patients participated in this study. Most respondents were aged over 40 years (61.9%), had a senior high school educational background (58.3%), and were housewives (52.4%). These characteristics indicate that the majority of participants were middle-aged women with moderate educational attainment.

Regarding knowledge of breast cancer, 45.2% of respondents demonstrated a moderate level of knowledge, while 32.1% had good knowledge and 22.7% had poor knowledge. Anxiety levels assessed using the Hamilton Anxiety Rating Scale (HARS) showed that 48.8% of respondents experienced mild anxiety, 38.1% moderate anxiety, and 13.1% severe anxiety.

Table 1. Distribution of Knowledge Levels and Anxiety Among Preoperative Breast Cancer Patients (n = 84)

Variable	Category	n	%
Knowledge	Good	27	32.1
	Moderate	38	45.2
	Poor	19	22.7
Anxiety	Mild	41	48.8
	Moderate	32	38.1
	Severe	11	13.1

Cross-tabulation analysis demonstrated that patients with good knowledge predominantly experienced mild anxiety, whereas those with poor knowledge were more likely to experience moderate to severe anxiety.

Table 2. Association Between Knowledge Level and Anxiety Severity (n = 84)

Knowledge Level	Mild Anxiety	Moderate Anxiety	Severe Anxiety	Total
Good	21 (25.0%)	6 (7.1%)	0 (0.0%)	27 (32.1%)
Moderate	18 (21.4%)	17 (20.2%)	3 (3.6%)	38 (45.2%)
Poor	2 (2.4%)	9 (10.7%)	8 (9.6%)	19 (22.7%)
Total	**41 (48.8%)**	**32 (38.1%)**	**11 (13.1%)**	**84 (100%)**

Spearman's rho correlation analysis revealed a statistically significant positive correlation between knowledge level and anxiety severity ($p = 0.013$), indicating that lower knowledge levels were associated with higher anxiety among preoperative breast cancer patients.

The results indicate that nearly half of the respondents had a moderate level of knowledge regarding breast cancer, while more than one-fifth demonstrated poor knowledge. This finding suggests that despite increasing public awareness of breast cancer, substantial gaps in patient understanding remain. Limited health literacy may hinder patients' ability to interpret medical information accurately.

Anxiety was prevalent among preoperative breast cancer patients, with more than half experiencing moderate to severe anxiety. This finding aligns with previous studies reporting that anticipation of surgery, fear of anesthesia, uncertainty about prognosis, and concerns about body image contribute significantly to preoperative anxiety (Montgomery et al., 2010).

The significant correlation between knowledge level and anxiety supports the hypothesis that insufficient understanding of breast cancer is associated with higher anxiety. Patients with good knowledge predominantly experienced mild anxiety, whereas those with poor knowledge were more likely to report severe anxiety. This pattern is consistent with evidence that inadequate information exacerbates psychological distress in cancer patients (Sjöling et al., 2003; Faller et al., 2013).

From a psychological perspective, knowledge enhances patients' perceived control and coping capacity. Patients who understand their disease and treatment options are better able to anticipate surgical procedures and manage emotional responses. Conversely, lack of knowledge may promote uncertainty and catastrophic thinking, thereby intensifying anxiety (Khan et al., 2010).

These findings highlight the importance of structured preoperative education as part of comprehensive breast cancer care. Psycho-oncological and educational interventions have been shown to reduce emotional distress and improve psychological preparedness for surgery

(Faller et al., 2013). Nurses and healthcare providers play a central role in delivering accurate and empathetic information tailored to patients' educational levels.

The larger sample size in this study strengthens the reliability of the findings compared with smaller studies. However, the cross-sectional design limits causal inference, and anxiety levels were measured at a single time point. Longitudinal studies are recommended to assess changes in anxiety across the perioperative period.

Overall, this study confirms that patients' knowledge of breast cancer is significantly associated with anxiety levels during the preoperative phase. Enhancing patient education through standardized, evidence-based health education protocols may reduce anxiety and improve psychological readiness for breast cancer surgery.

D. Conclusion

This study demonstrates a statistically significant relationship between mothers' knowledge of breast cancer and anxiety levels among preoperative breast cancer patients. Patients with lower levels of knowledge were more likely to experience moderate to severe anxiety prior to surgery, whereas those with better knowledge predominantly reported mild anxiety. These findings indicate that knowledge plays an important role in shaping patients' psychological responses during the preoperative phase. Enhancing patients' understanding of breast cancer and surgical procedures is therefore essential to reduce anxiety and improve psychological readiness for surgery.

E. Recommendations

Healthcare providers should prioritize structured and evidence-based preoperative education programs for breast cancer patients, focusing on improving knowledge about the disease, surgical procedures, and postoperative expectations. Nurses, in particular, play a central role in delivering clear, empathetic, and patient-centered education to help reduce uncertainty and anxiety.

Hospitals are encouraged to develop and implement standardized operating procedures for preoperative patient education as part of comprehensive breast cancer care. Future research should involve longitudinal or interventional designs to evaluate the effectiveness of educational interventions in reducing anxiety over time and to explore additional factors, such as social support and coping strategies, that may influence preoperative anxiety among breast cancer patients.

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