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Breast Cancer Patients' Experiences Undergoing Radiotherapy: A Qualitative Study

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Abstract:
Breast cancer is a chronic condition that often requires long-term treatment, including radiotherapy, which may affect patients physically, psychologically, socially, and spiritually. Although previous studies have documented the side effects of radiotherapy, limited evidence exists regarding the lived experiences of breast cancer. This study aimed to explore the lived experiences of women with breast cancer undergoing radiotherapy. A qualitative study with a phenomenological approach was conducted. Ten women diagnosed with breast cancer who had undergone at least five sessions of radiotherapy and were able to communicate their experiences were purposively recruited. Data were collected through semi-structured, in-depth interviews and supported by field notes. Interviews were audio-recorded, transcribed verbatim, and analyzed using the Colaizzi method to identify significant statements, formulate meanings, cluster themes, and describe the essential structure of the participants' lived experiences. The essence of the participants' lived experiences reflected a journey from fear and uncertainty toward acceptance and hope, supported by interpersonal relationships and spirituality. This experience was expressed through six interconnected themes: (1) initial perceptions of radiotherapy, (2) perceived physical and emotional impacts, (3) challenges during treatment, (4) coping strategies, (5) social support throughout the treatment process, and (6) motivation and expectations for recovery. Participants described radiotherapy as a complex experience involving fear, uncertainty, physical discomfort, and emotional distress, while gradually developing resilience through family support, compassionate healthcare providers, adaptive coping strategies, and spiritual beliefs. The findings demonstrate that the lived experiences of breast cancer patients undergoing radiotherapy are multidimensional, highlighting the importance of holistic, patient-centered care that addresses physical, psychological, social, and spiritual needs. Clinical interventions should strengthen therapeutic communication, facilitate family involvement, provide spiritual support according to patients' beliefs and preferences, and promote adaptive coping throughout radiotherapy. Future studies are recommended to employ quantitative or mixed-methods approaches to further examine the relationships among patient experiences, coping strategies, social support, spiritual well-being, and quality of life.

Keywords: breast cancer, holistic care, lived experiences, phenomenological study, radiotherapy.

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INTRODUCTION

Cancer is one of the leading causes of morbidity and mortality worldwide and remains a major public health challenge. Among all cancer types, breast cancer is the most frequently diagnosed cancer in women and the second most commonly diagnosed cancer overall. According to the Global Cancer Observatory (GLOBOCAN) 2022, approximately 2.3 million women were newly diagnosed with breast cancer worldwide, and nearly 666,000 died from the disease. Asia bears the largest burden of cancer globally, accounting for approximately 9.7 million new cancer cases and 4.3 million cancer-related deaths in 2022, highlighting the substantial regional impact of cancer on health systems (Bray et al., 2024).

In Indonesia, breast cancer remains the most frequently diagnosed cancer, with 66,271 new cases (16.2% of all cancer cases) reported in 2022, making it the leading cancer among women. In the same year, breast cancer was responsible for approximately 22,598 deaths, reflecting its considerable contribution to cancer-related mortality in the country. These figures demonstrate that breast cancer continues to represent a significant health burden in Indonesia and emphasize the need not only for effective treatment but also for comprehensive supportive care throughout the treatment trajectory (Osborne et al., 2025).

Breast cancer is a life-threatening disease that requires timely diagnosis and appropriate management to improve survival and quality of life. Current treatment modalities include surgery, chemotherapy, endocrine therapy, targeted therapy, and radiotherapy, either alone or in combination depending on disease stage and clinical characteristics (Kimta et al., 2026). Radiotherapy is one of the most commonly used treatments for breast cancer and employs high-dose ionizing radiation to destroy cancer cells and reduce the risk of recurrence (Polgár et al., 2022). Although radiotherapy provides substantial clinical benefits, it is frequently associated with adverse effects such as skin erythema, fatigue, pain, breast edema, hair loss, sore throat, pulmonary complications, and bone damage (Sowunmi et al., 2020).

Previous studies have extensively documented the physical and psychological consequences of radiotherapy. Skin toxicity affects approximately 70–100% of women receiving radiotherapy for early-stage breast cancer and is often accompanied by anxiety, stress, depression, and diminished self-esteem, ultimately reducing patients' quality of life (Bottesi et al., 2021). However, these studies have predominantly focused on measurable treatment outcomes and symptom burden. Comparatively little is known about how women undergoing radiotherapy make sense of their lived experiences by integrating physical suffering, emotional responses, family support, social relationships, coping strategies, and spiritual beliefs throughout the treatment process. Such holistic understanding is particularly important in the Indonesian cultural context, where family involvement and spirituality frequently influence illness perceptions, coping mechanisms, and treatment adherence.

Therefore, this phenomenological study seeks to explore the lived experiences of Indonesian women with breast cancer undergoing radiotherapy. Understanding these experiences from physical, psychological, social, and spiritual perspectives may provide valuable evidence for developing holistic, patient-centered interventions that better address patients' comprehensive care needs during radiotherapy.

METHODS

Study Design

This study employed a qualitative design using a descriptive phenomenological approach to explore the lived experiences of breast cancer patients undergoing radiotherapy. The study was conducted at the radiotherapy unit of RSU Sembiring, Indonesia, and data were collected from January to June 2025. The study followed the Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines to ensure comprehensive and transparent reporting of qualitative research.

Research Team and Reflexivity

The interviews were conducted by the first author, a female nursing professional internship student with formal training and experience in qualitative research, including conducting in-depth interviews. Prior to data collection, she had no clinical, professional, or personal relationship with the participants and was not involved in their treatment or care. Before each interview, participants were informed that the interviewer was a nursing professional internship student and researcher conducting the study to explore the lived experiences of breast cancer patients undergoing radiotherapy. Reflexivity was maintained through field notes, reflective journaling, and documentation of the researcher's assumptions, perspectives, and methodological decisions throughout the data collection and analysis process to minimize potential bias.

Study Setting and Participants

The study was conducted at RSU Sembiring, a healthcare facility providing radiotherapy services for breast cancer patients in Deli Tua. Participants were breast cancer patients who were currently undergoing or had completed radiotherapy at the hospital. A total of ten participants were recruited using a non-probability purposive sampling technique. Inclusion criteria included: (1) diagnosed with breast cancer, (2) currently undergoing or having completed radiotherapy, (3) aged 18 years or older, (4) able to communicate effectively, (5) physically and mentally capable of participating in interviews, and (6) willing to provide informed consent. Exclusion criteria included patients with severe health conditions, cognitive or communication impairments, or those who declined or withdrew participation.

Sampling and Recruitment

Participants were identified and approached in the radiotherapy unit. The purpose of the study was explained verbally and in writing. Those who agreed to participate provided written informed consent before data collection commenced. Recruitment and data collection were conducted concurrently, allowing preliminary analysis after each interview. Data saturation was reached after the ninth interview, when no new codes, meanings, or themes emerged from the data. One additional interview was conducted to confirm the stability and completeness of the findings. The decision that data saturation had been achieved was made collaboratively by the research team through regular discussions and ongoing review of the interview transcripts and emerging themes.

Data Collection

Data were collected through semi-structured, in-depth interviews lasting approximately 20–40 minutes. Although the interview duration was relatively brief, it was considered appropriate because most participants had recently undergone radiotherapy and experienced physical fatigue, discomfort, and reduced endurance. To minimize participant burden while maintaining the depth of inquiry, the interviewer used probing and follow-up questions to encourage rich descriptions of their lived experiences. Data collection continued until data saturation was achieved, with no new themes or meanings emerging from subsequent interviews.

An interview guide consisting of five open-ended questions was developed based on a review of the relevant literature on the lived experiences of breast cancer patients undergoing radiotherapy and aligned with the study objective. Prior to data collection, the interview guide was reviewed by two experts in qualitative research and one oncology nursing expert to ensure the relevance, clarity, and comprehensiveness of the questions. The guide was subsequently pilot-tested with two breast cancer patients who met the inclusion criteria but were not included in the final study sample. Minor revisions were made to improve the wording and sequencing of several questions without changing the overall content. During data collection, no substantial modifications to the interview guide were required because it adequately facilitated an in-depth exploration of participants' lived experiences.

Probing questions were used to elicit deeper and more detailed responses. Interviews were conducted in a private and comfortable setting within the hospital to ensure confidentiality and participant comfort. All interviews were audio-recorded with participants' consent. Field notes were

used to capture contextual information, including interview conditions and non-verbal expressions. In addition, a demographic questionnaire was used to collect participant characteristics, including age, gender, religion, marital status, education level, occupation, and duration of radiotherapy.

Data Analysis

This study adopted a descriptive phenomenological approach because it aims to describe and understand the essence of participants' lived experiences as they were perceived, without imposing predetermined theoretical interpretations. This approach was considered appropriate for exploring how breast cancer patients experienced radiotherapy across physical, psychological, social, and spiritual dimensions. Colaizzi's phenomenological method was selected because it provides a rigorous and systematic analytic framework for identifying significant statements, formulating meanings, clustering themes, and developing the essential structure of lived experiences while incorporating participant validation through member checking, thereby enhancing the credibility of the findings.

All interviews were transcribed verbatim and checked against the audio recordings to ensure accuracy and completeness. Data collection and analysis were conducted concurrently. Data were analyzed using Colaizzi's seven-step phenomenological method. First, each transcript was read repeatedly to obtain a comprehensive understanding of the participants' lived experiences. Second, significant statements directly related to the phenomenon under investigation were identified and extracted. Third, meanings were formulated from these significant statements while remaining faithful to the participants' descriptions. Fourth, the formulated meanings were organized into clusters of themes, and related themes were integrated into broader thematic categories. Fifth, an exhaustive description of the phenomenon was developed by integrating all identified themes. Sixth, the exhaustive description was refined into the fundamental structure of the lived experience. Finally, the findings were returned to the participants through member checking to verify the accuracy and credibility of the interpretations, and participants confirmed that the findings adequately reflected their experiences.

The analysis was conducted manually without the use of qualitative data analysis software. The first author performed the initial coding and formulation of meanings, while the co-authors independently reviewed the significant statements, formulated meanings, and thematic clusters. Regular discussion meetings were held throughout the analysis process to compare interpretations and resolve any differences through consensus. When discrepancies arose, the research team revisited the original transcripts to ensure that the final themes accurately reflected the participants' accounts and remained consistent with Colaizzi's phenomenological approach.

Trustworthiness

Trustworthiness was established by ensuring credibility, dependability, confirmability, and transferability throughout the research process. Credibility was enhanced through prolonged engagement with the data, concurrent data collection and analysis, and member checking. After the themes and the fundamental structure of the lived experiences had been developed using Colaizzi's seven-step phenomenological method, the findings were returned to the participants to verify whether the interpretations accurately reflected their experiences of undergoing radiotherapy. The participants confirmed that the findings were consistent with their experiences, and no major revisions to the themes were required. Dependability was maintained by documenting all stages of the research process, including participant recruitment, interview procedures, field notes, transcription, coding, theme development, and analytical decisions, thereby providing a clear audit trail. Confirmability was achieved through reflexive journaling, documentation of the researchers' assumptions throughout the study, and regular discussions among the research team during data analysis. Any differences in interpretation were resolved through consensus after revisiting the original interview transcripts to ensure that the themes remained grounded in the participants' narratives rather than the researchers' perspectives. Transferability was supported by providing a detailed description of the study setting,

participant characteristics, sampling strategy, data collection procedures, and analytical process, enabling readers to determine the applicability of the findings to similar clinical and cultural contexts.

RESULTS

Table 1 shows that most participants were aged 56–65 years (late elderly) (n = 5, 50%). The majority were married (n = 6, 60%) and identified as Muslim (n = 9, 90%). Regarding educational background, most had completed junior high school (n = 4, 40%). Most participants were homemakers or unemployed (n = 7, 70%) and reported having no personal income (n = 7, 70%). Clinically, the majority had stage II breast cancer at the time of diagnosis (n = 8, 80%).

Table 1. Participant demographic and clinical characteristics (n = 10)

Characteristics	**n**	**%**
Age (year), median (IQR) 58.5 (53-62)		
36–45 (Late adulthood)	1	10.0
46–55 (Early elderly)	3	30.0
56–65 (Late elderly)	5	50.0
> 65 (Older elderly)	1	10.0
Marital status		
Married	6	60.0
Widowed	4	40.0
Religion		
Muslim	9	90.0
Protestant	1	10.0
Education level		
Higher education	2	20.0
Senior high school	3	30.0
Junior high school	4	40.0
Elementary school	1	10.0
Occupation		
Self-employed	2	20.0
Farmer	1	10.0
Homemaker/Unemployed	7	70.0
Income		
> Rp 2,500,000	1	10.0
Rp 1,500,000–2,500,000	1	10.0
< Rp 1,500,000	1	10.0
No income	7	70.0
Cancer stage		
Stage II	8	80.0
Stage III	1	10.0
Stage IV	1	10.0
Duration of illness (years), median (IQR): 1.5 (0.8-2.5)		
< 1	4	40.0
1–3	5	50.0
> 3	1	10.0
Number of radiotherapy sessions, median (IQR) 20.5 (12-32)		
< 10	2	20.0
10–20	3	30.0
21–30	2	20.0
> 30	3	30.0
Total	10	100

Regarding disease duration, most participants had been diagnosed with breast cancer one to three years before the interview (n = 5, 50%), indicating the time elapsed since their initial diagnosis rather than the duration of a specific disease stage. In terms of treatment exposure, participants had commonly undergone 10–20 radiotherapy sessions (n = 3, 30%) or more than 30 sessions (n = 3, 30%).

Based on the results of the analysis, several themes were identified: (1) initial understanding of radiotherapy, (2) perceived impacts of undergoing radiotherapy, (3) challenges experienced during treatment, (4) patients' coping strategies, (5) social support throughout the treatment process, and (6) patients' motivation and expectations [Figure 1].

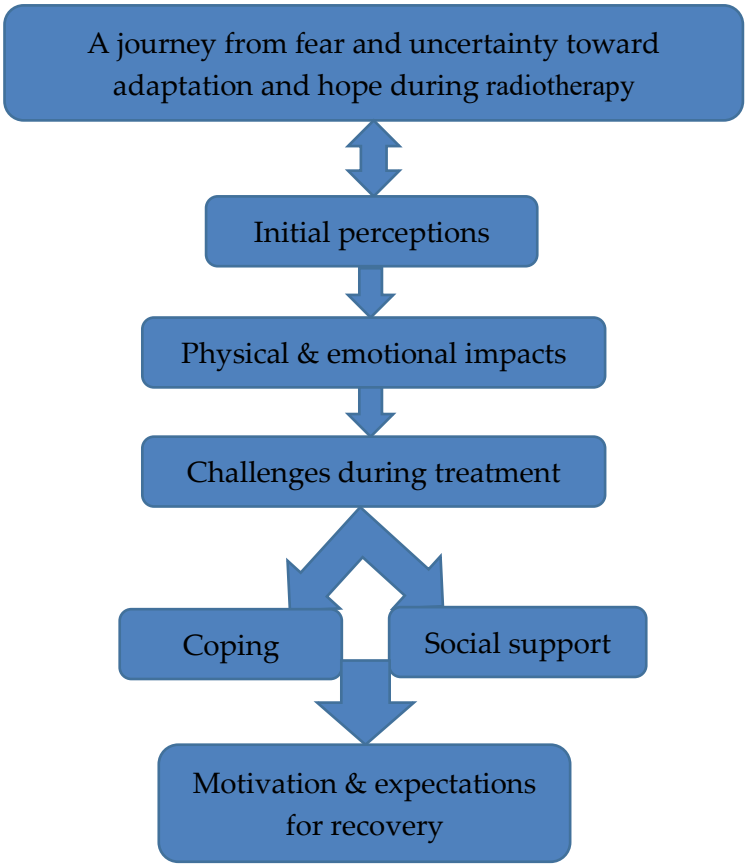

Figure 1. Breast cancer patients' experiences undergoing radiotherapy

Theme 1. Initial Perception of Radiotherapy

Most participants reported that, at the beginning of their radiotherapy treatment, they had limited knowledge about the purpose, procedure, and expected outcomes of radiotherapy. This lack of understanding was primarily attributed to insufficient information before treatment, leaving them uncertain about what they would experience.

> *"No explanation about radiotherapy was provided; I did not know anything about it at all." (Participant 1)*

The lack of information contributed to feelings of uncertainty and fear, as participants often imagined radiotherapy as a painful and life-threatening procedure. Many associated the word "cancer" with hopelessness and death, which further shaped their negative expectations before starting treatment.

> *"Because, since long ago, whenever I heard the word cancer, I believed that life would not last long." (Participant 5)*
>
> *"At first, I thought it would feel as if my body was being burned."* (Participant 8)

However, participants described that these initial perceptions gradually changed after receiving explanations from healthcare professionals and experiencing the treatment process firsthand. Better

understanding of the radiotherapy procedure and equipment reduced their anxiety and increased their confidence in the treatment.

"I received a detailed explanation from the doctor who handled my surgery." (Participant 8)

"At first, I didn't know anything about the equipment, but after I understood how it works, I felt reassured and safe." (Participant 7)

Theme 2. Perceived Physical and Emotional Impacts

Participants described radiotherapy as an emotionally challenging experience, particularly at the beginning of treatment. Fear, anxiety, and uncertainty were dominant emotional responses, largely driven by limited knowledge about radiotherapy and concerns about pain, treatment outcomes, and the seriousness of their illness. These emotions reflected not only apprehension toward the treatment itself but also the psychological burden of living with a breast cancer diagnosis.

"At first, I was scared… I didn't even know what it was called, what the radiation treatment would be like." (Participant 10)

"Yes, afraid… anxious, worried." (Participant 5)

Several participants also described feelings of embarrassment during the early stages of treatment. These feelings were associated with vulnerability related to the treatment procedures and changes in their physical condition rather than embarrassment itself.

"Even though I am already older, I still felt embarrassed. At the beginning, there was definitely a sense of shame." (Participant 9)

As participants became more familiar with the treatment process and experienced no severe harm, their emotional responses gradually shifted from fear and uncertainty toward acceptance, confidence, and optimism. This adaptation reflected an important psychological transition throughout the radiotherapy journey.

"At first, I was afraid, wondering what would happen and whether it would be painful, but it turned out there was no problem." (Participant 8)

"There's no fear. Since it's treatment, it has to be done—we just have to stay motivated." (Participant 2)

Physical impacts

Participants reported various physical symptoms during radiotherapy, including fatigue, weakness, dizziness, nausea, fever, reduced appetite, swallowing difficulties, sleep disturbances, and skin reactions in the irradiated area. These symptoms often occurred simultaneously and affected participants' daily activities, nutritional intake, sleep quality, and overall physical well-being.

"Sometimes during radiotherapy, I felt nauseous, dizzy, and tired." (Participant 5)

"Yesterday my throat couldn't swallow—it was painful. By the ninth radiotherapy session, there were already sores on my neck." (Participant 9)

"Sometimes my mouth tastes bitter, so I have to force myself to eat." (Participant 1) "Sometimes at night it's also hard to sleep." (Participant 10)

"There was a burning sensation. My neck and underarm became dark, then developed sores." (Participant 9)

Despite these physical challenges, participants actively attempted to adapt by maintaining food intake, managing their symptoms, and continuing treatment, reflecting their determination to complete radiotherapy.

Spiritual responses

Beyond the physical and emotional consequences of radiotherapy, participants described profound spiritual changes throughout their treatment journey. Living with breast cancer encouraged them to strengthen their relationship with God through prayer and religious practices. Spirituality provided emotional comfort, fostered acceptance of their illness, and became an important source of hope and resilience during treatment.

"We become closer to God because we remember Him more. Perhaps in these ways God is removing our sins." (Participant 10)

"My worship has become stronger and more consistent; I have become closer to God." (Participant 3)

Theme 3. Challenges during Treatment

Participants described several practical and psychosocial challenges that complicated their radiotherapy journey. These challenges extended beyond the physical effects of treatment and included limited family accompaniment, geographical barriers, and financial difficulties, all of which influenced their ability to continue treatment and maintain emotional well-being. Some participants underwent radiotherapy without the support of a spouse or close family member, requiring them to rely on their own physical and emotional resources. The absence of immediate family support increased their sense of responsibility and highlighted the importance of personal resilience throughout the treatment process.

"The one who helps me is myself. There is no one else. I live on my own, so I must encourage myself and depend on my own strength. My husband has already passed away." (Participant 1)

Geographical distance from the hospital was another major challenge. Participants living in remote areas were often unable to travel daily and therefore had to stay temporarily near the treatment center. This situation disrupted their family routines and added emotional and logistical burdens during radiotherapy.

"My home is far from the hospital, in the village. So I stay here temporarily." (Participant 3)

Financial constraints further complicated the treatment experience. Participants emphasized that the economic burden was not limited to medical expenses but also included transportation, temporary accommodation, and loss of household income when family members stopped working to provide care. These cumulative costs created additional stress while they were undergoing treatment.

"Because of the expenses, staying here also costs money. My husband is not working because he has to accompany me." (Participant 5)

Theme 4. Coping strategies

Participants described various coping strategies that helped them adapt to the physical and emotional demands of radiotherapy. These strategies included emotional regulation, maintaining a positive outlook, physical self-care, and spiritual practices. Together, these approaches enabled participants to gradually regain a sense of control and resilience throughout the treatment process. To cope with emotional distress, participants consciously tried to manage their thoughts by avoiding excessive worry and accepting their situation. Rather than focusing on uncertainty, they attempted to remain calm and emotionally balanced while undergoing treatment.

"I just take it slowly and try not to overthink it. Whatever happens, I don't let it get into my head." (Participant 10)

Participants also emphasized the importance of maintaining hope and a fighting spirit. Positive thinking and determination to recover became important psychological resources that motivated them to continue radiotherapy despite the challenges they encountered.

"I stay motivated and keep fighting against this cancer. I want to prove that I can do it." (Participant 7)

Managing physical well-being was another important coping strategy. Participants adapted their daily routines by prioritizing adequate rest and limiting strenuous activities to reduce fatigue and conserve energy during treatment.

"If I'm not strong enough, I just take a rest." (Participant 8)

"I still do the housework, but I avoid lifting things or doing anything too heavy." (Participant 2)

Spirituality also emerged as an important coping resource. Participants described prayer and other religious practices as sources of emotional comfort, inner peace, and strength. Their illness encouraged a deeper relationship with God, helping them accept their condition and maintain hope throughout the radiotherapy process.

"We have to draw closer to God, pray more, and give charity, even if it's only a little." (Participant 1)

Theme 5. Social Support throughout the Treatment Process

Participants consistently described social support as an essential resource that helped them cope with the challenges of radiotherapy. Support from family members, fellow patients, and healthcare professionals provided emotional reassurance, practical assistance, and encouragement, enabling participants to maintain their motivation and continue treatment despite physical and psychological difficulties. Immediate family members, particularly spouses and children, were identified as the primary source of emotional and practical support. Participants emphasized that encouragement from their families strengthened their determination to continue treatment and fostered hope for recovery. For those accompanied by their spouses, this support created a sense of security and reduced the emotional burden associated with radiotherapy.

> *"My motivation is my desire to recover. My husband encourages me to get well and to think about our children; that gives me strength." (Participant 7)*

Interactions with fellow patients also played an important role in reducing fear and uncertainty. Participants gained reassurance by sharing experiences with individuals who had previously undergone radiotherapy. Learning from peers helped normalize the treatment experience, increased confidence, and encouraged adherence to medical treatment. Some participants also reflected on their own experiences to encourage others to seek timely medical care rather than delaying treatment.

> *"From a friend of mine who also had cancer. I shared with her and asked, 'What is radiotherapy like?' She said, 'It's fine, it's safe,' so I decided to continue." (Participant 7)*
>
> *"If there is a lump in the breast, it's better to seek medical treatment directly, not alternative therapy, because we don't know. From my experience, I was afraid and delayed going to the hospital, and it had already spread by the time I sought medical care." (Participant 5)*

Participants also perceived healthcare professionals as an important source of support throughout radiotherapy. Compassionate communication, respectful attitudes, and consistent emotional support from doctors and nurses helped alleviate anxiety and created a therapeutic environment in which participants felt safe, respected, and cared for. These positive interactions strengthened participants' trust in the treatment process and enhanced their confidence in continuing radiotherapy.

> *"The doctor is excellent, gives advice and medication. The nurses are kind too. Everyone is nice and welcoming. I feel calm receiving therapy here." (Participant 7)*

Theme 6. Motivation and Expectations for Recovery

Participants described the desire to recover as the strongest motivation for continuing radiotherapy despite the physical and emotional challenges they experienced. Their determination to complete treatment was driven not only by the hope of restoring their health but also by a sense of responsibility toward their families, particularly their children. Family responsibilities provided participants with a meaningful purpose that strengthened their resilience throughout the treatment journey.

> *"I have to get better with this radiotherapy. I must recover." (Participant 9)*
>
> *"Then I remembered my children, so I have to stay strong and keep my spirit up." (Participant 5)*

Beyond completing treatment, participants hoped to regain a healthy and independent life without experiencing disease recurrence. Their expectations extended beyond physical recovery to include maintaining quality of life, reducing the burden on their families, and, for some, entrusting their future to God while continuing to hope for healing. These hopes reflected the integration of physical, psychological, social, and spiritual dimensions in their recovery journey.

> *"Hopefully I recover and this illness doesn't come back again. I hope to get well soon." (Participant 3)*
>
> *"Even though I'm already in an advanced stage, I still hope God will grant a miracle so I can recover." (Participant 5)*

Participants also expressed expectations regarding the continuity of supportive healthcare services. They valued compassionate communication, respectful attitudes, and consistent care from healthcare professionals, believing that these qualities fostered trust, comfort, and confidence throughout radiotherapy. Maintaining these positive interactions was considered an important aspect of patient-centered care.

"I hope nothing changes—please keep the same attitude and service in the future. They are friendly, so I hope it stays that way." (Participant 1)

DISCUSSION

The findings of this study indicate that most participants initially demonstrated a limited understanding of radiotherapy, characterized by insufficient knowledge and lack of information regarding the procedure prior to undergoing treatment. This lack of awareness contributed to feelings of fear and anxiety, as well as the development of negative perceptions and apprehensive expectations about the therapy they were about to receive. These findings are consistent with the study conducted by Cui et al. (2025), which reported that most cancer patients demonstrated inadequate knowledge regarding radiotherapy, although some adopted a proactive approach to their care practices. This lack of knowledge was associated with only moderately positive attitudes toward radiotherapy, suggesting that insufficient information may negatively influence patients' perceptions of the treatment process. The study further emphasized that patient education plays a crucial role in improving understanding and fostering more positive attitudes toward radiotherapy.

However, over time, with explanations provided by healthcare professionals and patients' direct experiences during therapy, their understanding gradually shifted in a more positive direction. This finding is consistent with research by Fink et al. (2025), which demonstrated that patient education effectively reduces anxiety, facilitates shared decision-making, and improves patients' understanding of the radiotherapy process and treatment outcomes. These results support the notion that providing accurate and comprehensive information by healthcare professionals can transform patients' initial fear and uncertainty into more positive perceptions, as they gain a clearer understanding of the procedures, purposes, and potential effects of radiotherapy.

The findings of this study indicate that participants experienced several psychological impacts at the beginning of radiotherapy, including anxiety, fear, and feelings of apprehension. However, as the treatment progressed and adaptation occurred, most participants gradually accepted their condition and demonstrated more positive psychological responses, such as increased calmness and reduced stress. This finding is consistent with previous studies indicating that patients commonly experience a range of psychological responses throughout the course of illness and treatment, including denial, anxiety, depression, and eventual acceptance (Saeidi et al., 2021). In a study conducted by Moser et al. (2024), survey findings indicated that a substantial proportion of patients undergoing radiotherapy experienced significant psychological distress and anxiety, with prevalence rates ranging from 25% to 50%. The study further reported that patients expressed a need for relaxation strategies to help alleviate treatment-related anxiety, suggesting that the heightened anxiety observed at the initiation of therapy may decrease when adequate psychological support is provided. Acceptance of one's illness is therefore considered a crucial component of the psychological adaptation process among patients with cancer.

The physical impacts experienced by the participants included fatigue, dizziness, nausea, sleep disturbances, skin changes, and decreased appetite. This finding is consistent with the study by Manajreh et al. (2025), which reported that patients with breast cancer undergoing radiotherapy frequently experience fatigue, skin irritation, and sleep disturbances as common treatment-related side effects. Radiation exposure used in medical treatments such as radiotherapy can damage body tissues and organs and may result in a range of physical side effects. The likelihood and severity of these adverse effects depend on several factors, including the radiation dose administered, tissue sensitivity, and each patient's overall condition. Higher radiation doses are associated with an increased risk of observable physical reactions, such as skin changes and damage to normal tissues. Interestingly, several participants also reported improvements in their physical condition after undergoing radiotherapy, suggesting that despite the presence of side effects, the clinical benefits of the treatment were still perceived and experienced by patients (Talapko et al., 2024). This finding aligns with the study by Burkon et al. (2025), which found that although patients experienced side effects during radiotherapy,

many reported better quality of life after completing treatment. This suggests that radiotherapy, despite its temporary adverse effects, can provide important long-term benefits for recovery and adaptation.

This study indicates that radiotherapy encouraged participants to strengthen their spiritual connection with God through prayer, worship, and a greater sense of surrender and acceptance of their condition. This finding is consistent with research by Daniels et al. (2025), which reported that most patients undergoing radiotherapy rely heavily on their spiritual beliefs to cope with their diagnosis and treatment process, making spirituality an important coping mechanism. Similarly, a study on the influence of spirituality on psychological resilience in cancer patients found that spiritual beliefs significantly contribute to patients' resilience, promoting inner peace and improving their ability to adapt to the challenges of treatment (Gutierrez-Rojas et al., 2025). These findings suggest that spirituality is not merely a ritual practice but also plays a meaningful role in enhancing inner peace and strengthening patients' adaptive capacity while coping with the treatment process (Gutierrez-Rojas et al., 2025). Previous studies have shown that engaging in spiritual practices and drawing closer to God can help patients manage emotional distress and promote inner peace during the course of treatment (Aggarwal et al., 2023).

The main challenges faced by participants were limited family support, long travel distances to the hospital, and financial difficulties. Some participants did not have a spouse or close family member to accompany them during radiotherapy, so they had to manage the treatment process on their own. This made it harder to cope with side effects and frequent therapy schedules. These findings highlight the important role of family support in maintaining patients' well-being, especially in Asian cultural settings where family involvement is a key part of care (Ali et al., 2023). Previous research indicates that, within Indonesian culture, the family plays a central role in caring for relatives living with cancer (Kristanti et al., 2019). Family support goes beyond emotions and is often seen as a cultural duty. Strong family ties help patients during treatment and improve their quality of life. Breast cancer patients need people who understand their fears and anxiety and can guide them through treatment. Usually, family members provide this support. Having family support helps patients feel better emotionally and may improve their health outcomes and survival (Kadambi et al., 2020). Despite facing many challenges, participants remained committed to undergoing radiotherapy, showing strong resilience and motivation to recover. Sihvola et al. (2023) found that psychological resilience helps cancer patients adapt to their illness and treatment, cope with stress, stay positive, and remain committed to completing therapy despite side effects and challenges. Education and psychosocial support interventions were shown to strengthen resilience and improve patients' ability to manage cancer treatment. Patients undergoing radiotherapy face several access challenges, such as long travel distances, need for family support, limited transportation, and treatment costs. These issues can increase stress for patients and their families. Healthcare access depends on five factors: availability (enough services and staff), accessibility (ease of reaching care), accommodation (services that fit patient needs), affordability (ability to pay), and acceptability (trust and good relationship with providers). These factors show that access is not just about distance or cost, but also about how care is organized and delivered (Ramashia et al., 2025).

Participants used psychological coping strategies, such as managing stress, staying positive, and accepting their illness. These strategies helped reduce anxiety and increase calmness during therapy. Previous studies have shown that stress management strategies play a key role in improving the psychological well-being of cancer patients. Patients with effective coping skills tend to experience higher psychological well-being during radiotherapy (Negash & Alelign, 2025). Positive thinking helps patients endure difficult situations by enhancing self-acceptance, adaptability, and resilience. It allows individuals to focus on positive experiences, strengthen self-esteem, and improve emotional regulation (Helmreich et al., 2017). As a result, patients feel calmer, more hopeful, better able to handle stress, and experience reduced anxiety and depression (Vaziri et al., 2021).

Participants used physical coping strategies such as getting enough rest, adjusting daily activities, and maintaining a healthy diet and lifestyle. Previous studies have shown that managing fatigue and maintaining good nutrition help cancer patients preserve their physical health during

therapy (Misiag et al., 2022). In one study, participants improved their diet by avoiding sweets, processed foods, and preservatives, while increasing intake of fish, vegetables, and boiled foods (Clemente-Suárez et al., 2023). For social activities, some participants spent time with friends or went for walks to reduce stress and improve their mood (Cohn-Schwartz, 2020). Participants coped spiritually through prayer, worship, and dhikr. These practices helped them feel calm, find strength, reduce stress, and stay hopeful. They expressed gratitude for their experiences and believed their illness had a purpose, which strengthened their spirituality and acceptance of their condition (Hayden et al., 2022). Prayer and worship played a key role in managing stress and maintaining hope throughout the treatment (Upenieks, 2023).

Support from immediate family, fellow patients, and healthcare providers positively influenced participants' motivation and psychological resilience. Emotional and practical support from family enhanced patients' sense of security, while support from fellow patients fostered a sense of togetherness. Family served as a key source of both moral and material support (Lee et al., 2024). Study by Sari et al. (2019) highlights that support from family, partners, and the surrounding environment is crucial for reducing stress, enhancing motivation, and helping patients positively accept their condition, which in turn contributes to treatment success. Social support may enhance patients' motivation and psychological resilience during radiotherapy by reducing emotional distress and strengthening their ability to cope with treatment-related challenges. According to the Stress and Coping Theory proposed by Lazarus and Folkman, social support functions as an important coping resource that buffers the negative effects of stressful events and promotes adaptive coping strategies. In the context of cancer treatment, emotional encouragement, practical assistance, and empathetic communication from family members and healthcare professionals can foster hope, improve treatment adherence, and increase patients' confidence in managing the physical and emotional demands of radiotherapy. These findings are consistent with previous studies showing that stronger perceived social support is associated with lower levels of anxiety and depression, better quality of life, and greater resilience among patients with breast cancer undergoing treatment. Furthermore, supportive relationships with fellow patients may provide opportunities for shared experiences and mutual encouragement, helping patients normalize their concerns and reduce feelings of isolation. Collectively, these findings highlight that social support is not merely a source of comfort but also a critical psychosocial resource that facilitates positive adaptation throughout the radiotherapy journey (Seiler & Jenewein, 2019).

Participants' motivation to recover was driven by the desire to regain full health and the hope of living well and spending time with their families. Their expectations for healthcare also included consistent services and friendly, supportive attitudes from healthcare providers. These findings align with Seiler and Jenewein (2019), which reported that participants demonstrated a strong determination to keep fighting for recovery despite facing unexpected diagnoses. Their commitment was reflected in consistent efforts to regain health, even after experiencing changes that affected their perception of their body and overall well-being. Patients' motivation to undergo radiotherapy is driven by the desire to recover fully and stay healthy. They hope for a future where they can live well and spend time with their families. Patients also expect timely, high-quality healthcare and kind, supportive attitudes from healthcare providers. Many participants expressed strong hopes for their future, especially regarding their own survival and their children's well-being. Concern for their children served as a key motivator to face health challenges. This shows that participants maintain a strong forward-looking orientation, even while coping with serious health conditions (Man et al., 2023).

CONCLUSION

This study found that undergoing radiotherapy for breast cancer involves changes in perception, multidimensional impacts, and patients' adaptive abilities. Initially, most patients had negative views of radiotherapy due to limited information, which caused anxiety and fear. Over time, with education and support from healthcare providers, patients' understanding became more positive. Radiotherapy affected patients psychologically, physically, and spiritually, including early-stage anxiety and fear,

physical complaints such as fatigue, dizziness, skin changes, and sleep disturbances, as well as increased spiritual closeness through prayer and acceptance. Despite challenges such as limited family support, distance from the hospital, and financial constraints, patients managed to undergo therapy using adaptive coping strategies. Social support from family, fellow patients, and healthcare providers played a key role in enhancing motivation, emotional calm, and treatment continuity.

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CONFLICT OF INTEREST
The authors declare that there is no conflict of interest.

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ETHICAL CONSIDERATIONS
Ethical approval was obtained from the Research Ethics Committee of Institut Kesehatan Deli Husada Deli Tua, Indonesia (Approval No. 1741/KEP-IKDH/X/2025). Written informed consent was obtained from all participants before data collection. All procedures were conducted in accordance with relevant ethical guidelines and regulations.

INFORMED CONSENT
Written informed consent was obtained from all participants before data collection. Before participation, each participant received verbal and written information regarding the purpose of the study, study procedures, potential benefits and risks, and their rights as research participants. Participants were informed that their participation was entirely voluntary and that they could withdraw from the study at any time without affecting their medical care or treatment. Permission was also obtained to audio-record the interviews. All participants provided written informed consent before participating in the study.

DATA AVAILABILITY STATEMENT
The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request. To protect participant confidentiality, interview transcripts and identifiable data are not publicly available.

AUTHOR CONTRIBUTIONS
Fahrizal Alwi contributed to the conceptualization of the study, study design, methodology, supervision, formal data analysis, interpretation of findings, project administration, and drafting of the original manuscript. Mery Silvia Harahap contributed to data collection, participant recruitment, conducting interviews, data curation, transcription, initial coding, and drafting of the manuscript. Winingsih Frihafni, Siti Marlina, Rini Debora Silalahi, Nur Mala Sari, Megawati Sinambela, and Meta Rosaulina contributed to data validation, interpretation of findings, critical review of the manuscript, and revision of the intellectual content. Hien Thi Nguyen contributed to the study methodology, supervision, validation of the qualitative analysis, and critical revision of the manuscript. Shujen Chen contributed to the conceptualization of the study, methodological guidance, supervision, validation of the findings, and critical review and editing of the manuscript. All authors read and approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

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