MENTAL HEALTH AND QUALITY OF LIFE IN BREAST CANCER PATIENTS: A SYSTEMATIC REVIEW

Sofyan Hadi Hasibuan[1]*, Akhmad Huda[1], Rosliana Dewi[2], Johan Budhiana[2], Iwan Permana[2], Maria Yulianti[2]

[1]Sekolah Tinggi Ilmu Kesehatan Rajekwesi Bojonegoro, Jln Raya Dander, Ngumpak Dalem, Dander, Griya Rajekwesi Indah, Ngumpak Dalem, Bojonegoro, East Java 62171, Indonesia
[2]Sekolah Tinggi Ilmu Kesehatan Sukabumi, Jl. Karamat No.36, Karamat, Sukabumi, West Java 43122, Indonesia
*alyajihanrashid@gmail.com

ABSTRACT
While survival rates of breast cancer patients have improved thanks to advances in early detection and treatment, patients often experience anxiety, depression and stress, which can worsen their emotional and physical recovery. Objective: this study aimed to identify and analyze the relationship between mental health and quality of life of breast cancer patients through a systematic review of the literature. Methods: This study was a systematic literature review using the PRISMA approach including qualitative, longitudinal, prospective, and cross-sectional studies published between 2020-2025 in English, without interventions or comparisons, focusing on articles reporting these relationships. Results: Based on a comprehensive literature search, a total of 36,229 articles were initially identified using keywords from four major academic databases: Scopus (2,578), PubMed (683), Sage Journals (31,999), and Web of Science (969). After removing duplicates and screening based on inclusion and exclusion criteria, 11 articles were selected for full-text review and final inclusion in the systematic review. Conclusions: These studies collectively revealed a consistent and significant relationship between mental health and quality of life (QoL) of breast cancer patients. Anxiety, depression, psychological inflexibility, and emotional distress were found to negatively impact QoL. This synthesis highlights the need for a comprehensive multidisciplinary approach in breast cancer care to support long-term survival.

Keywords: breast cancer; mental health; quality of life

INTRODUCTION
Breast cancer is one of the most common types of cancer experienced by women worldwide, with significant impacts not only on the physical condition of patients but also on their mental health and quality of life. According to the World Health Organization (WHO), breast cancer accounts for around 25% of all cancer cases among women, making it the leading cause of cancer-related deaths among women (Zolfaghary et al., 2023). This phenomenon not only indicates a high incidence rate but also highlights the importance of a deeper understanding of the factors influencing the quality of life of patients following diagnosis and treatment. In recent decades, advancements in early detection and cancer therapy have made a substantial positive impact on breast cancer survival rates. However, despite the increasing survival rates, the major challenge faced by patients is shifting towards improving their quality of life after undergoing lengthy and often exhausting treatment processes (Bitew et al., 2021). In addition to medical treatment, psychological factors are one of the most critical aspects that greatly affect the experiences of patients, influencing how they cope with these challenges and adapt afterward (Hao et al., 2024; Pancakarsa et al., 2024).

Mental health in breast cancer patients is often disturbed by anxiety, depression, and stress related to the diagnosis and medical treatment process. A cancer diagnosis, which threatens

life, and intensive treatments such as surgery, chemotherapy, and radiation can create profound emotional impacts, often accompanied by uncertainty about the future (Lantheaume et al., 2022). Physical experiences such as pain, as well as significant changes in body image due to surgeries or treatment side effects, further exacerbate the mental condition of the patient. These psychological disturbances not only affect the patients' emotions but can also influence their overall quality of life (QoL) (Phoosuwan & Lundberg, 2022). QoL is a concept that encompasses multiple dimensions, including physical, psychological, social, and emotional well-being, all of which can be affected by the medical condition as well as the treatment process. Breast cancer patients often report a significant decline in their quality of life both during and after treatment, caused by factors such as physical fatigue, sleep disturbances, body image changes, and uncertainty about their disease prognosis, all of which heighten stress and anxiety (Lantheaume et al., 2022; Wulandari et al., 2023). Furthermore, limited social support or the lack of an adequate social network can worsen their mental health, leading to feelings of isolation, which in turn further deteriorates their quality of life (Kim & Jang, 2020; Sørensen et al., 2020).

Several studies have shown that stress, anxiety, and depression play a significant role in diminishing the quality of life in breast cancer patients, affecting their ability to manage physical symptoms and reducing their overall satisfaction with life (El kherchi et al., 2021; McKinley et al., 2021; Phoosuwan & Lundberg, 2022). While there are several studies examining the impact of mental health on the quality of life of breast cancer patients, there remains a gap in synthesising the existing evidence. This highlights the need for a systematic review of the literature to explore in greater depth the relationship between mental health and the quality of life in breast cancer patients. A systematic and comprehensive literature review will provide clearer insights into the various psychological factors that influence the quality of life of patients and how mental conditions can either worsen or improve their experience during treatment and afterwards (Li et al., 2022). Therefore, this study aims to identify and analyse the relationship between mental health and the quality of life in breast cancer patients through a systematic literature review. With a deeper understanding of this connection, it is hoped that better insights can be gained to design more effective interventions to improve the overall well-being of breast cancer patients, both psychologically and physically.

This study will present a comprehensive review of relevant literature, covering various psychological aspects that affect the quality of life of breast cancer patients, and provide essential insights into the factors that may contribute to improving their mental well-being. Through a systematic approach, this research is expected to contribute to the development of better support strategies for breast cancer patients, focusing not only on physical treatment but also on the maintenance of their mental health as part of a holistic approach to cancer care.

METHOD
This research is a systematic literature review conducted to address the research questions. The study examines empirical evidence to explore the relationship between mental health and quality of life in individuals with breast cancer. The research was carried out using the PRISMA literature review approach, without performing a meta-analysis of quantitative data. Studies that were either identical or irrelevant to the research question were excluded. The inclusion criteria for this systematic review were defined using the PICOS framework, with the following parameters: Population: patients with breast cancer; Intervention: no intervention; Comparison: no comparison; Outcomes: articles that report a relationship between mental health and quality of life in people with breast cancer; Study Design: qualitative studies, longitudinal studies, prospective studies and cross-sectional studies; Publication Year: 2020-2025; Language: English. Articles that were not related to the relationship between mental health and quality of life in people with breast cancer were

excluded based on the exclusion criteria. Article quality assessment was carried out using the Joanna Briggs Institute guidelines.

RESULT

The search results yielded 8.898 articles, which were then filtered and adjusted based on full text assessment to produce 11 articles. The flow diagram in this research is as follows:
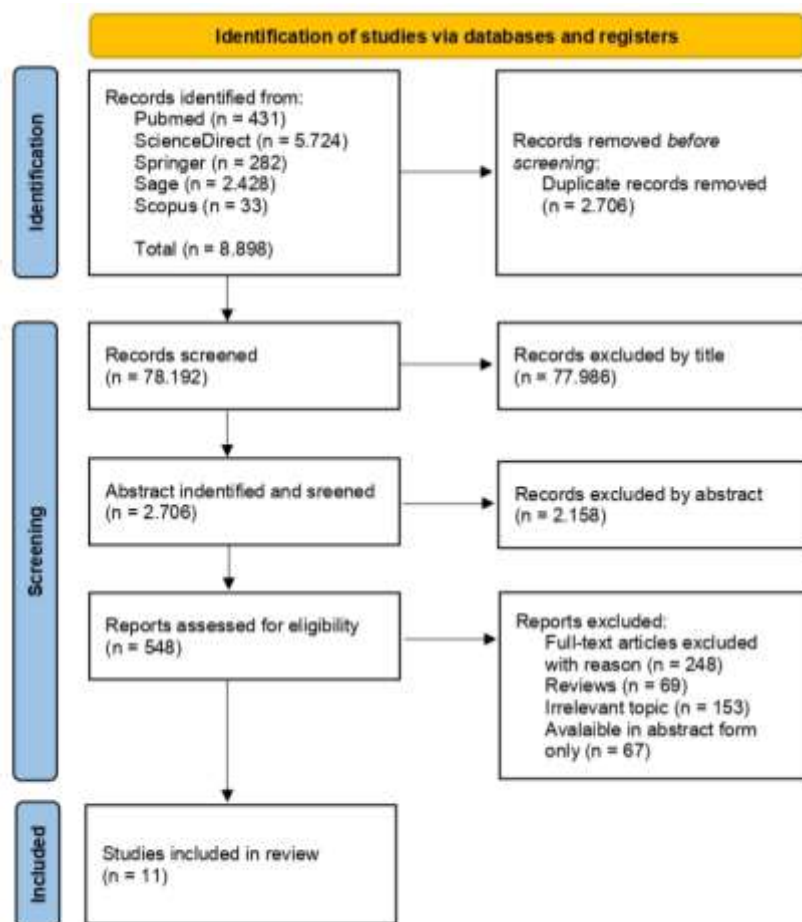

Figure 1. PRISMA flow diagram of the article selection process

Table 1.
Mental Health and Quality of Life in Breast Cancer Patients

No.	Title and Author	Country	Design	Sample	Result
1.	Mental health and quality of life following breast cancer diagnosis in patients seen at a tertiary care hospital in Nairobi, Kenya: A qualitative study (Annamalai et al., 2024)	Kenya	Qualitative study	40	Following BC diagnosis, it was reported that patients faced various physical, social, psychological and spiritual factors affecting their mental health and quality of life. Our interviews with each group indicated that BC patients experienced feelings of stress, anxiety and depression related to treatments and accompanying side effects. Disclosure concerns, financial impacts, relationship strain and negative outlooks on life were common among BC patients. The findings indicate that BC diagnosis and care experiences influence mental health in this population.

No.	Title and Author	Country	Design	Sample	Result
2.	Predictors of quality of life and mental health in breast cancer survivors in Northern Iran (Zolfaghary et al., 2023)	Iran	Cross-sectional study	96	In this study, results showed that 11.5% of women had the optimal quality of life, 31.3% favorable quality of life, and 57.3% undesirable quality of life. The average HADS score was 20.14 ± 3.07, with anxiety scores of 10.21 ± 2.31 and depression scores of 9.93 ± 1.64. On multiple linear regression, marital relationship and the number of children were predictors of quality of life (β=-17.624, p=0.023 and β=-7.427, p=0.016, respectively), as well as the husband's education and having no history of other cancers in the woman, were the most important predictors of HADS (β=0.763, p=0.039 and β=-0.528, p=0.016, respectively).
3.	Determinants of Physical and Mental Healthrelated Quality of Life among Patients with Breast Cancer During COVID-19 Pandemic (Jamil et al., 2023)	Indonesia	Cross-sectional study	260	Respondents aged <50 years (p=0.010; aOR=2.08; 95% CI=1.18–3.67), unemployed (p=0.022; aOR=2.29; 95% CI=1.16–4.53), and had high depression (p=0.026; aOR=2.41; 95% CI=1.13–5.12) have a more likelihood to have low physical HRQoL. In addition, unemployed respondents (p=<0.001; aOR=4.15; 95% CI=2.14–8.04) and had high anxiety (p=0.004; aOR=2.71; 95% CI=1.38–5.33) have more likelihood to have low mental HRQoL.
4.	Psychological distress and health-related quality of life among women with breast cancer: a descriptive cross-sectional study (Phoosuwan & Lundberg, 2022)	Sweden	Descriptive cross-sectional study	481	Psychological distress was related to HRQoL in terms of body image, future perspective, side efects of systemic therapy, breast symptoms, arm symptoms, and hair loss. Women with lower age were associated with increased symptoms of anxiety, while those having undergone breast reconstruction were associated with increased symptoms of depression. Breast reconstruction and chemotherapy worsened body image, low support from partner decreased sexual functioning and enjoyment, and low support from physicians and nurses worsened future perspective, side efects of systemic therapy, breast symptoms, and indignation about hair loss.
5.	Quality of life and psychological distress during cancer: a prospective observational study involving young breast cancer female patients (Muzzatti et al., 2020)	Italy	Prospective study	106	At T0, participants showed a better physical functioning (p = 0.001) than the female normative sample, whereas their mental functioning was worse (p < 0.001). In this time, mental functioning within our sample was weaker than physical functioning (p < 0.001). Over time, physical functioning decreased (p < 0.001), whereas mental functioning increased (p < 0.001). Both at T0 and T1, anxiety was higher than depression (p < 0.05). Both distress dimensions decreased over time (p <

No.	Title and Author	Country	Design	Sample	Result
					0.001). Nevertheless, at T0 the 25.5 and 26.4% of the sample were respectively possible and probable cases of anxiety, whereas the 17.9 and 9.4% were possible and probable cases of depression. At T1, the percentages were 17.9 and 18.9% for anxiety, and 8.5 and 6.6% for depression. In both considered times, a better QoL corresponded to less psychological distress. However, QoL and psychological distress assessed at T0 did not predict the QoL at T1.
6.	Quality of life and mental health in breast cancer survivors compared with non-cancer controls: a study of patient-reported outcomes in the United Kingdom (Carreira et al., 2021)	United Kingdom	Cross-sectional study	608	A total of 356 breast cancer survivors (8.1 years post diagnosis) and 252 women with no prior cancer participated in the study. Compared with non-cancer controls, breast cancer survivors had poorer QoL in the domains of cognitive problems (adjusted β (aβ) = 1.4, p = 0.01), sexual function (aβ = 1.7, p = 0.02) and fatigue (aβ = 1.3, p = 0.01), but no difference in negative feelings, positive feelings, pain, or social avoidance. Breast cancer survivors had higher odds of borderline-probable anxiety (score $\geq$ 8) (adjusted OR = 1.47, 95%CI:1.15–1.87), but no differences in depression. Advanced stage at diagnosis and chemotherapy treatment were associated with poorer QoL.
7.	Factors Associated With Health-Related Quality of Life Among Cancer Survivors in the United States (Han et al., 2021)	United States	Cross-sectional study	877	Cancer survivors' mean GPH (49.28, SD ¼ 8.79) and mean GMH (51.67, SD ¼ 8.38) were similar to general population means (50, SD ¼ 10). Higher family income was associated with better GPH and GMH scores, whereas a greater number of comorbidities and lower physical activity were statistically significantly associated with worse GPH and GMH. Survivors last treated 5 years ago and longer had better GPH than those treated during the past year, and current smokers had worse GMH than nonsmokers (all b > 3 and all P < .001).
8.	Emotional state, fatigue, functional status and quality of life in breast cancer: exploring the moderating role of psychological inflexibility (Novakov, 2021)	Serbia	Cross-sectional study	64	The significant moderating effect of PI was obtained in the relationship of QOL with the depression, anxiety, fatigue and functional status. As anxiety, depression, fatigue and functional difficulties decrease, participants who are psychologically flexible report better QOL. On the other hand, psychologically inflexible individuals consistently report impaired QOL, regardless of whether indicators of depression, anxiety, fatigue and diminished functional status are prominent or not. Our findings support the notion that PF may have an

No.	Title and Author	Country	Design	Sample	Result
					important role in the improvement of emotional state and QOL in breast cancer patients.
9.	Changes in Fatigue, Psychological Distress, and Quality of Life After Chemotherapy in Women with Breast Cancer (Oh & Cho, 2020)	South Korea	Prospective study	50	A significant increase in fatigue (F = 41.95, P < .001) and psychological distress (F = 26.55, P < .001) from prechemotherapy to postchemotherapy was noted. Improvement was observed 6 months after the completion of chemotherapy. A positive or negative change in fatigue was associated with the same in psychological distress. Quality of life (F = 65.22, P < .001) also showed similar change patterns as observed with fatigue and psychological distress. Fatigue had a greater impact on quality of life at postchemotherapy, but psychological distress had a greater impact at prechemotherapy and at the 6-month follow-up.
10.	Fatigue, Anxiety, and Quality of Life in Breast Cancer Patients Compared to Non-Cancer Controls: a Nationwide Longitudinal Analysis (Williams et al., 2021)	United States	Cross-sectional study	944	Patients reported greater fatigue and anxiety compared to controls at all time points (p's < 0.001, 35% clinically meaningful anxiety at baseline). From A1 to A2, patients experienced a significant increase in fatigue (β = 8.3, 95% CI = 6.6, 10.0) which returned to A1 values at A3 but remained greater than controls' (p < 0.001). General, mental, and physical fatigue subscales increased from A1 to A2 remaining significantly higher than A1 at A3 (p < 0.001). Anxiety improved over time (A1 to A3 β = -4.3, 95% CI = -2.6, -3.3) but remained higher than controls at A3 (p < 0.001). Among patients, fatigue and anxiety significantly predicted one another and quality of life. Menopausal status, higher BMI, mastectomy, and sleep problems also significantly predicted change in fatigue.
11.	Factors Related to Anxiety, Depressive Symptoms and Quality of Life in Breast Cancer (Cáceres et al., 2022)	Spain	Cross-sectional study	200	Thirty-eight percent of the patients in the sample had moderate to severe anxiety, which was related to the time of diagnosis, advanced stage of illness and surgical treatment. We found that 28% of patients had depressive symptoms, related mainly with time of diagnosis, adjuvant therapy and number of cycles of chemotherapy (CT). Patients with the longest time since diagnosis, in stage III, and in treatment with CT, especially those with the greatest number of cycles, had the worst scores in QoL. We found a positive association between depressive symptoms and anxiety with QoL in patients with BC.

DISCUSSION

Breast cancer is a chronic illness that affects not only the physical but also the psychological well-being of patients, making mental health a central component of survivorship. As survival rates improve, a growing body of research underscores the necessity of focusing on long-term mental health and quality of life (QoL). Fatigue, depression, anxiety, cognitive and social functioning difficulties are prominent issues among breast cancer survivors, often persisting long after treatment ends. Oh and Cho (2020) identified fatigue as a major predictor of QoL post-chemotherapy, while psychological distress—such as anxiety and depression—was found to have a profound and lasting effect from the early stages through to survivorship. Novakov (2021) expanded on this by highlighting psychological inflexibility as a moderating factor, where patients with low flexibility consistently reported poorer QoL regardless of symptom severity, supporting the application of Acceptance and Commitment Therapy (ACT) to strengthen psychological resilience. Similarly, Han et al. (2021) demonstrated that socioeconomic status, health behaviours, and time since treatment substantially influenced both physical and mental health scores.

The importance of a holistic and long-term support system is further affirmed by studies examining psychosocial dynamics. Carreira et al. (2021) and Williams et al. (2021) revealed that survivors, especially those who underwent aggressive therapies or were diagnosed at later stages, experienced lingering issues with cognitive functioning, sexual health, and emotional regulation. These issues often stemmed from or were exacerbated by comorbidities, age, employment status, and insufficient post-treatment services. Cross-national studies also affirm the pivotal role of social and spiritual support. Research from Sweden (Phoosuwan & Lundberg, 2022), Kenya (Annamalai et al., 2024), Iran (Zolfaghary et al., 2023), and Spain (Cáceres et al., 2022) collectively demonstrate that social connections, family involvement, and spiritual coping mechanisms significantly alleviate psychological burdens and improve emotional well-being. These findings suggest that QoL outcomes cannot be optimally addressed through clinical care alone.

The COVID-19 pandemic intensified the psychological strain on breast cancer patients. Jamil et al. (2023) reported a surge in anxiety and depression, particularly among younger, unemployed patients, correlating with lower QoL scores during the pandemic. Disruptions in care, fear of infection, and prolonged uncertainty compounded the existing emotional vulnerabilities of patients. This reinforces the view that psychological care must remain a cornerstone of cancer management, especially in times of crisis. Additionally, Muzzatti et al. (2020) emphasized the therapeutic value of psychosocial interventions such as expressive therapy and mindfulness practices, which help patients reinterpret their cancer experiences, find new meaning, and establish emotional equilibrium.Beyond psychological and emotional support, several clinical and demographic factors also significantly shape QoL outcomes. Studies consistently point to advanced cancer stages, repeated chemotherapy cycles, and reconstructive surgeries as contributing to negative body image and higher depression scores. Demographic vulnerabilities such as younger age, lower education levels, and greater family burdens further compound these effects. In cultural contexts like sub-Saharan Africa, as Annamalai et al. (2024) found, stigma, gendered relational conflicts, and spiritual uncertainty intensify psychological challenges. Yet, spirituality remains a dual-edged sword—serving both as a source of hope and a trigger for existential crises, depending on the patient's belief system and support environment.

Collectively, these findings assert that mental health is a decisive factor in shaping breast cancer patients' quality of life. Anxiety, depression, and emotional distress significantly deteriorate physical functioning and social relationships, particularly when compounded by inadequate psychosocial support. Clinical severity, lifestyle factors, and sociocultural contexts further intensify these burdens. Thus, modern oncology care must adopt a multidisciplinary

framework—one that integrates regular psychological assessments, culturally sensitive spiritual guidance, and tailored psychosocial interventions. Empowering family, community, and healthcare providers to create a robust support ecosystem is essential for facilitating psychological recovery and achieving long-term improvements in breast cancer survivors' quality of life.

CONCLUSION

Based on the synthesis of eleven international journals, it can be concluded that mental health—particularly anxiety and depression—is a primary determinant of diminished quality of life (QoL) among breast cancer patients. Social support from partners, family members, and healthcare professionals has consistently been shown to alleviate psychological symptoms and enhance health-related quality of life (HRQoL). Clinical factors such as cancer stage and treatment type, alongside socio-demographic variables including younger age, unemployment, and lower educational attainment, further exacerbate the psychological burden experienced by patients. The COVID-19 pandemic has intensified these mental health challenges, underscoring the urgent need for responsive and resilient healthcare systems capable of addressing the psychosocial impact of global crises.Community-based psychosocial interventions and culturally adaptive spiritual approaches emerge as promising strategies for comprehensive patient rehabilitation. These findings highlight the necessity for cancer care institutions to integrate interdisciplinary mental health services into the management of breast cancer patients. Routine assessments of psychological well-being and QoL should be embedded within clinical protocols, accompanied by access to tailored psychological therapies and context-sensitive spiritual interventions aligned with the cultural values of the patient population

REFERENCES

Annamalai, D., Helova, A., Saleh, M., Gikaara, N., Rupani, S., Abayo, I., Karimi, N., Sharma, K., Omedo, I., Owuor, K., Gutnik, L., & Turan, J. M. (2024). Mental health and quality of life following breast cancer diagnosis in patients seen at a tertiary care hospital in Nairobi, Kenya: A qualitative study. Cambridge Prisms: Global Mental Health, 11, e96. https://doi.org/10.1017/gmh.2024.79

Bitew, T. D., Ayenew, W., Baye, T., & Eshetu, E. (2021). Health Related Quality of Life and Its Determinants Among Breast Cancer Patients in Africa: A Systematic Review and Meta-Analysis. Research Square. https://doi.org/10.21203/rs.3.rs-482636/v1

Cáceres, M. C., Nadal-Delgado, M., López-Jurado, C., Pérez-Civantos, D., Guerrero-Martín, J., & Durán-Gómez, N. (2022). Factors Related to Anxiety, Depressive Symptoms and Quality of Life in Breast Cancer. International Journal of Environmental Research and Public Health, 19(6), 3547. https://doi.org/10.3390/ijerph19063547

Carreira, H., Williams, R., Dempsey, H., Stanway, S., Smeeth, L., & Bhaskaran, K. (2021). Quality of life and mental health in breast cancer survivors compared with non-cancer controls: a study of patient-reported outcomes in the United Kingdom. Journal of Cancer Survivorship, 15(4), 564–575. https://doi.org/10.1007/s11764-020-00950-3

El kherchi, O., Aquil, A., El khoudri, N., Mouallif, M., Daghi, M., Guerroumi, M., Saad, E. madani, Benider, A., Jayakumar, A. R., & Elgot, A. (2021). Anxiety and Depression Comorbidities in Moroccan Patients With Breast Cancer. Frontiers in Psychiatry, 11. https://doi.org/10.3389/fpsyt.2020.584907

Han, X., Robinson, L. A., Jensen, R. E., Smith, T. G., & Yabroff, K. R. (2021). Factors Associated With Health-Related Quality of Life Among Cancer Survivors in the United States. JNCI Cancer Spectrum, 5(1). https://doi.org/10.1093/jncics/pkaa123

Jamil, M., Merdawati, L., Krisdianto, B. F., Khambri, D., Harahap, W. A., & Arifin, H. (2023). Determinants of Physical and Mental Health-related Quality of Life among Patients with Breast Cancer During COVID-19 Pandemic. Nurse Media Journal of Nursing, 13(3), 263–273. https://doi.org/10.14710/nmjn.v13i3.54738

Kim, J., & Jang, M. (2020). Stress, Social Support, and Sexual Adjustment in Married Female Patients with Breast Cancer in Korea. Asia-Pacific Journal of Oncology Nursing, 7(1), 28–35. https://doi.org/10.4103/apjon.apjon_31_19

Lantheaume, S., Fernandez, L., Lantheaume, S., Moták, L., & Conceição, S. B.-D. (2022). Quality of life in patients with non-metastatic breast cancer: evolution during follow-up and vulnerability factors. Supportive Care in Cancer, 30(3), 1935–1943. https://doi.org/10.1007/s00520-021-06203-y

Li, M., Xie, X., Xu, H., & Li, H. (2022). A Psychological Nursing Intervention for Patients with Breast Cancer on Inflammatory factors, Negative emotions and Quality of Life. Iranian Journal of Public Health. https://doi.org/10.18502/ijph.v51i9.10559

McKinley, L. E., Hua, S., Stal, J., D'Eon, M. S., Afari, N., & Cronan, T. A. (2021). Predictors of Quality of Life Among Breast Cancer Patients. Californian Journal of Health Promotion, 19(1), 1–12. https://doi.org/10.32398/cjhp.v19i1.2642

Muzzatti, B., Bomben, F., Flaiban, C., Piccinin, M., & Annunziata, M. A. (2020). Quality of life and psychological distress during cancer: a prospective observational study involving young breast cancer female patients. BMC Cancer, 20(1), 758. https://doi.org/10.1186/s12885-020-07272-8

Novakov, I. (2021). Emotional state, fatigue, functional status and quality of life in breast cancer: exploring the moderating role of psychological inflexibility. Psychology, Health & Medicine, 26(7), 877–886. https://doi.org/10.1080/13548506.2020.1842896

Oh, P.-J., & Cho, J.-R. (2020). Changes in Fatigue, Psychological Distress, and Quality of Life After Chemotherapy in Women with Breast Cancer. Cancer Nursing, 43(1), E54–E60. https://doi.org/10.1097/NCC.0000000000000689

Pancakarsa, E. P., Monty P. Soemitro, Arief Budianto, Maman Abdurahman, Kiki Ahmad Rizki, Yohana Azhar, & Dodi L. H. L. Gaol. (2024). Analysis of Risk Factors for Psychological Stress in Breast Cancer Patients: Observational Study in West Java, Indonesia. Bioscientia Medicina : Journal of Biomedicine and Translational Research, 8(7), 4648–4656. https://doi.org/10.37275/bsm.v8i7.1037

Phoosuwan, N., & Lundberg, P. C. (2022). Psychological distress and health-related quality of life among women with breast cancer: a descriptive cross-sectional study. Supportive Care in Cancer, 30(4), 3177–3186. https://doi.org/10.1007/s00520-021-06763-z

Sørensen, H. L., Schjølberg, T. K., Småstuen, M. C., & Utne, I. (2020). Social support in early-stage breast cancer patients with fatigue. BMC Women's Health, 20(1), 243. https://doi.org/10.1186/s12905-020-01106-2

Williams, A. M., Khan, C. P., Heckler, C. E., Barton, D. L., Ontko, M., Geer, J., Kleckner, A. S., Dakhil, S., Mitchell, J., Mustian, K. M., Peppone, L. J., Kipnis, V., Kamen, C. S., O'Mara, A. M., & Janelsins, M. C. (2021). Fatigue, anxiety, and quality of life in breast cancer patients compared to non-cancer controls: a nationwide longitudinal analysis. Breast Cancer Research and Treatment, 187(1), 275–285. https://doi.org/10.1007/s10549-020-06067-6

Wulandari, S. M., Yunitasari, E., Kusumaningrum, T., Myint, N. M. M., & Subu, M. A. (2023). Body image perception among breast cancer patients after mastectomy: A phenomenology study. The Journal of Palembang Nursing Studies, 2(3). https://doi.org/10.55048/jpns87

Zolfaghary, F., MashaghiTabari, R., Dezhman, M., Bijani, A., Kheirkha, F., & Adib-Rad, H. (2023). Predictors of quality of life and mental health in breast cancer survivors in Northern Iran. BMC Women's Health, 23(1), 378. https://doi.org/10.1186/s12905-023-02533-7