



COMMUNITY-BASED NURSING CARE FOR PREOPERATIVE ANXIETY IN BREAST CANCER: A CASE REPORT

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ABSTRACT

Preoperative anxiety is a psychological problem frequently experienced by older adults with breast cancer and can affect sleep quality and emotional wellbeing. Lavender aromatherapy combined with deep breathing relaxation may help reduce anxiety, although its application in community-based gerontological nursing care in Indonesia remains limited. To describe community-based nursing care using lavender aromatherapy and deep breathing relaxation in an older adult with breast cancer experiencing preoperative anxiety. A descriptive case study was conducted on a 61-year-old woman with breast cancer awaiting surgery after six chemotherapy cycles. Assessment used the PSQI, GDS-SF, SPMSQ, MNA, Modified Katz Index, and Hendrich II Fall Risk Model, supported by previous evidence of validity and/or reliability. Anxiety was established based on the Indonesian Nursing Diagnosis Standard. The intervention was provided over three home visits, and data were analysed descriptively by comparing the client's condition across visits. Anxiety verbalisation decreased, eye contact and affective expression improved, sleep duration increased from 5 to 6-7 hours/night, and GDS-SF score decreased from 5 to 3. No side effects occurred. The intervention was associated with improvements in anxiety-related signs and symptoms, emotional wellbeing, and sleep quality and may be considered a complementary non-pharmacological intervention.

Keywords: anxiety; breast cancer; deep breathing relaxation; lavender aromatherapy; older adult

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INTRODUCTION

Breast cancer is one of the major health problems in the world, with incidence and mortality rates that remain high among women. According to Global Cancer Statistics 2022 (GLOBOCAN), there were approximately 2.3 million new cases and 666,103 deaths from breast cancer worldwide (WHO, 2026). The global distribution of breast cancer shows that this disease is the most frequently occurring malignancy among women in 158 of 185 countries and the leading cause of cancer death among women in 111 countries (Bray et al., 2024). This high incidence and mortality indicate that breast cancer remains a global health challenge requiring comprehensive management, including through nursing care.

In Indonesia, based on GLOBOCAN 2022 data, more than 408,661 new cancer cases and around 242,099 cancer deaths were recorded, with breast cancer being one of the most commonly found cancers among women (Kemenkes RI, 2026). The incidence of breast cancer reaches 42 cases per 100,000 population, with a mortality rate of around 17 per 100,000 population. Around 70% of new cases are still diagnosed at an advanced stage, so treatment options become more limited and the psychological burden on patients increases. This situation is influenced by low health literacy, limited access to screening, and various social and cultural barriers that cause women to delay early examination at health care facilities (Kemenkes RI, 2026).

An increase in breast cancer cases has also been observed in the Special Region of Yogyakarta and its surrounding areas. The Central Java Provincial Health Office reported that the number of breast cancer patients increased from 8,287 cases in 2021 to 10,530 cases in 2022, an increase of around

27% in a single year (Dinkes Jateng, 2022). One such case was found in Padukuhan Gedogan, Bantul Regency, which required home- and community-based nursing care. This condition demonstrates the importance of a nursing approach that focuses not only on physical aspects but also addresses patients' psychological needs.

In addition to causing physical disturbances, breast cancer is often accompanied by psychological problems, particularly anxiety ahead of surgery. Anxiety can be triggered by the perceived threat of death, a lengthy course of treatment, the surgical procedure itself, and uncertainty about the course of the disease. A systematic review and meta-analysis reported that the prevalence of anxiety among breast cancer patients reaches 41.9%, with higher rates among patients undergoing chemotherapy or awaiting scheduled surgery (Bray et al., 2024). In older adults, anxiety is often difficult to recognise because its symptoms resemble comorbidities or physiological changes associated with ageing. If left unaddressed, this condition can reduce sleep quality, impair adherence to treatment, lower immunity, and increase the risk of cancer recurrence or death (Carlson et al., 2023).

Managing anxiety in geriatric oncology patients requires a safe approach, as the use of anxiolytic medication in older adults carries a risk of adverse effects due to polypharmacy and declining organ function. Evidence-based non-pharmacological interventions are therefore increasingly used in nursing practice. One intervention that has been widely studied is lavender aromatherapy (*Lavandula angustifolia*). The linalool and linalyl acetate content of lavender essential oil produce a sedative and anxiolytic effect through stimulation of the olfactory pathway to the limbic system, particularly the amygdala and hippocampus, which play a role in emotional regulation (Yana et al., 2024).

A literature review of 13 articles showed that inhaled lavender aromatherapy is effective in reducing anxiety levels while also helping to stabilise patients' haemodynamic status, and is therefore recommended as a complementary therapy in the management of anxiety (Taramun & Siswadi, 2024). Other literature reports that the relaxing effect of lavender aromatherapy begins to appear around 7–10 seconds after inhalation (Yana et al., 2024). These findings indicate that lavender aromatherapy is a practical, relatively safe intervention that is easy for nurses to apply, including in community-based nursing services.

In Padukuhan Gedogan, Bantul Regency, a breast cancer patient was found to be experiencing anxiety ahead of surgery and in need of ongoing nursing support. The results of a preliminary study showed that the patient's psychological problems had not been optimally addressed, indicating the need for an intervention that focuses not only on physical conditions but also on psychological aspects. In addition to being supported by scientific evidence, lavender aromatherapy was chosen because it is easy to apply, relatively affordable, and can be carried out independently by the patient after receiving education from a nurse.

Although the effectiveness of lavender aromatherapy in reducing anxiety has been widely reported, most studies have been conducted in hospital settings. Evidence on the application of a combination of lavender aromatherapy and deep breathing relaxation in older adults with breast cancer experiencing preoperative anxiety in a community setting remains limited. This case study therefore aims to describe the application of community-based nursing care using a combination of lavender aromatherapy and deep breathing relaxation in an older adult with breast cancer experiencing preoperative anxiety, as a form of non-pharmacological intervention in nursing practice.

METHOD

This case report was prepared in accordance with the CAse REport (CARE) Guideline. The case reported is Mrs. W, a 61-year-old woman who lives with her family in Padukuhan Gedogan RT 07, Sumbermulyo Village, Yogyakarta. The client has a confirmed medical diagnosis of breast cancer,

has completed six cycles of chemotherapy, is awaiting scheduled surgery, and has type 2 diabetes mellitus as a comorbidity. Based on the results of a nursing assessment using the Indonesian Nursing Diagnosis Standard, the client was found to have preoperative anxiety. Nursing care was carried out over three home visits on 2, 9, and 16 May 2026, with each visit lasting approximately 30–60 minutes.

Data were collected through interviews, observation, physical examination, medical record review, and assessment of the home environment. The gerontological assessment included the Pittsburgh Sleep Quality Index (PSQI) to assess sleep quality, the Geriatric Depression Scale–Short Form (GDS-SF) to screen for depressive symptoms, the Short Portable Mental Status Questionnaire (SPMSQ) to assess cognitive function, the Mini Nutritional Assessment (MNA) to assess nutritional status, the Modified Katz Index to assess the level of independence, and the Hendrich II Fall Risk Model to assess fall risk. Anxiety was not assessed using a standardised anxiety assessment instrument, but was instead based on the major and minor defining characteristics of the anxiety diagnosis according to SDKI indicators.

The instruments used in the gerontological assessment have been supported by previous studies demonstrating validity and/or reliability. The PSQI demonstrated good content validity (CVI = 0.92-1.00) and internal consistency (Cronbach's α = 0.803) (Fauzi et al., 2024). The GDS-SF demonstrated good content validity (I-CVI = 1.00) and internal consistency (Cronbach's α = 0.80) (Snellman et al., 2024). The SPMSQ demonstrated good construct validity (r = 0.661, p < 0.001) and test-retest reliability (ICC = 0.984) (Dikmeer et al., 2025). The MNA demonstrated good predictive validity (AUC = 0.845-0.900) and internal consistency (Cronbach's α = 0.797) (Oumer et al., 2022). The Modified Katz Index demonstrated good internal consistency (Cronbach's α = 0.82) and test-retest reliability (ICC = 0.94, 95% CI = 0.89-0.96, p < 0.001), as well as strong concurrent validity (r = 0.91, p < 0.001) (Rathnayake et al., 2023). The Hendrich II Fall Risk Model demonstrated moderate predictive validity, with a sensitivity of 78.72%, specificity of 64.07%, and an AUC of 0.765 (95% CI = 0.748-0.781, p < 0.001) (Hendrich et al., 2020).

The nursing diagnosis, intervention, and outcomes were established with reference to the Indonesian Nursing Diagnosis Standard, the Indonesian Nursing Intervention Standard, and the Indonesian Nursing Outcome Standard. The primary intervention consisted of inhaling 1-2 drops of lavender aromatherapy using a diffuser combined with deep breathing relaxation for 15-20 minutes before sleep. The client was guided to inhale through the nose for 4 seconds, hold the breath for 2-3 seconds, and then exhale slowly through the mouth for 6 seconds. The exercise cycle was repeated 5-10 times per session and the client was advised to practise it independently every day.

Data were analysed descriptively by comparing the client's condition before the intervention (first visit), during the intervention (second visit), and after the intervention (third visit). Evaluation was carried out at each visit based on changes in the signs and symptoms of anxiety according to SDKI indicators, including verbalisation of anxiety, affective response, eye contact, sleep quality, and the client's ability to perform the intervention independently. Changes in clinical parameters, sleep duration, and GDS-SF scores were also compared across visits. The GDS-SF was used as a screening instrument for depressive symptoms that often accompany anxiety in older adults with cancer and was not used to assess anxiety severity. Written informed consent was obtained from the client before nursing care was provided and before publication of the case report.

RESULT

Comprehensive Assessment Findings

At the first visit, the client's general condition was relatively good, with a body mass index (BMI) of 26.8 kg/m², which falls into the overweight category. Vital signs showed a blood pressure of 122/87 mmHg, a pulse rate of 89 beats/minute, and a respiratory rate of 20 breaths/minute. The client was fully conscious (*compos mentis*) with a Glasgow Coma Scale (GCS) score of E4V5M6

and was well oriented to time, place, and person. Physical examination showed no significant abnormalities in the respiratory or musculoskeletal systems. The client had entered menopause approximately 10 years earlier. Her diet was considered good, with three meals a day and restricted intake of foods high in sugar and fat. In addition, the client regularly engaged in light walking around the house every morning as advised by her doctor.

During the assessment, the client disclosed that she had experienced deep sadness and had cried when she was first diagnosed with breast cancer. Although she had begun to accept her condition, she remained worried about the planned surgery and the possibility of recurrence. The client displayed minimal eye contact with a predominantly flat facial expression indicative of an anxiety response. Based on the nursing assessment using the Indonesian Nursing Diagnosis Standard indicators, the client was identified as experiencing preoperative anxiety. The client believed that her illness was a test from God, and she continued to practise her faith regularly and remained active in church congregation activities. She also participated in *PKK*, a community-based family welfare organization, and *Dasawisma*, a neighbourhood women's community support group, as a form of social support, although these activities were adjusted around her medical appointments. The findings of the client's initial assessment are presented in Table 1.

Table 1.

Initial Client Assessment Findings

Assessment Instrument	Result	Interpretation
Pittsburgh Sleep Quality Index (PSQI)	8	Poor sleep quality
Geriatric Depression Scale – Short Form (GDS-SF)	5/15	Indicates mild depressive symptoms
Short Portable Mental Status Questionnaire (SPMSQ)	0 errors	Intact cognitive function
Mini Nutritional Assessment (MNA)	29/30	Normal nutritional status (not at risk of malnutrition)
Modified Katz Index	15/17	Independent
Hendrich II Fall Risk Model	0	Low fall risk
Blood Pressure (mmHg)	122/87 mmHg	Slightly elevated diastolic
Random Blood Glucose (RBG)	187 mg/dL	Above diabetes control target

Nursing Diagnosis

Based on the nursing assessment using the Indonesian Nursing Diagnosis Standard, two nursing diagnoses were established. The priority diagnosis was anxiety (D.0080), related to worry about the possibility of failure and insufficient exposure to information, characterised by verbalised concern about her health condition and the planned surgery, minimal eye contact, a predominantly flat facial expression, and an emotional response indicating worry. The anxiety diagnosis was established based on the signs and symptoms according to SDKI indicators. Meanwhile, the results of the Geriatric Depression Scale–Short Form (GDS-SF) were used as supporting data to identify depressive symptoms that may accompany the client's psychological condition, rather than as the basis for establishing the anxiety diagnosis.

The second nursing diagnosis was disturbed sleep pattern (D.0055), related to environmental barriers arising from the schedule of medical procedures, characterised by a sleep onset latency of around 60 minutes, a sleep duration of around 5 hours per night, frequent early-morning waking with difficulty returning to sleep, and a Pittsburgh Sleep Quality Index (PSQI) score of 8, indicating poor sleep quality. Based on these findings, anxiety was set as the priority diagnosis because it was the primary problem affecting the client's psychological condition, while disturbed sleep pattern was set as the second diagnosis because it was related to the sleep complaints experienced by the client while awaiting surgery.

Intervention Implementation and Evaluation

Nursing care was carried out over three home visits. The first visit (2 May 2026) focused on a comprehensive assessment, establishing a therapeutic relationship, providing education about breast

cancer and the surgical procedure using infographic media, and training in deep breathing relaxation combined with lavender aromatherapy inhalation. At this stage, the client still showed signs and symptoms of anxiety, including verbalised concern about the planned surgery, minimal eye contact, and a predominantly flat facial expression.

At the second visit (9 May 2026), the client reported that she had independently practised lavender aromatherapy inhalation and deep breathing relaxation before sleep. She felt more relaxed, her sleep duration had increased to around 6 hours per night, and she reported that her worry about the planned surgery had begun to decrease. During the interaction, the client appeared more cooperative than at the previous visit. At the third visit (16 May 2026), the improvement in the signs and symptoms of anxiety was more apparent, shown by reduced verbalisation of worry, improved eye contact, a more relaxed facial expression, and increased openness during discussion. The client also reported that she was able to perform the deep breathing relaxation exercise and use lavender aromatherapy independently as a way of managing her worry ahead of surgery.

Evaluation over the three visits showed gradual improvement in both nursing diagnoses. The interventions provided included education about breast cancer and the surgical procedure, deep breathing relaxation exercises combined with lavender aromatherapy inhalation, and reinforcement of the exercises at each visit. Improvement in the client's condition was shown by reduced verbalisation of worry, improved eye contact and facial expression, and an increased ability to perform the exercises independently. In addition, blood pressure decreased from 122/87 mmHg to 116/80 mmHg, sleep duration increased from around 5 hours to 6-7 hours per night, and the Geriatric Depression Scale–Short Form (GDS-SF) score decreased from 5 to 3. The client also reported feeling calmer and finding it easier to fall asleep after inhaling lavender aromatherapy and performing deep breathing relaxation. The progression of anxiety signs and symptoms over the three visits is presented in table 2.

Table 2.
Progression of Anxiety Signs and Symptoms Across Three Visits

Time	Visit 1 (Pre-intervention)	Visit 2 (During)	Visit 3 (Post-intervention)
Anxiety Signs and Symptoms (SDKI')	Minimal eye contact, flat facial expression, appeared worried about the planned surgery	Eye contact beginning to improve, more relaxed facial expression, appeared more cooperative during interaction.	Improved eye contact, more relaxed facial expression, appeared calm during discussion.
Verbalisation of Worry	Present	Reduced	Minimal
Sleep Pattern (hours/night)	±5 hours	±6 hours	±6-7 hours
GDS-SF Score	5 (mild depression)	4 (normal)	3 (normal)

Note: The anxiety diagnosis was established based on the signs and symptoms according to the Indonesian Nursing Diagnosis Standard indicators. The Geriatric Depression Scale–Short Form (GDS-SF) score was used to screen for depressive symptoms that may accompany the client's psychological condition and was not used as the basis for establishing the anxiety diagnosis.

DISCUSSION

Client Characteristics and Anxiety Risk Factors

Mrs. W has several factors that may increase her risk of anxiety, including her breast cancer diagnosis, the approaching surgery, a history of six cycles of chemotherapy, type 2 diabetes mellitus as a comorbidity, and the experience of losing her spouse. This combination of factors increases vulnerability to the emergence of psychological problems, particularly among older adults. This finding is consistent with the Society for Integrative Oncology-American Society of Clinical Oncology (SIO-ASCO) guideline, which states that cancer patients with chronic comorbidities have a higher risk of psychological distress than patients without comorbid conditions ([Carlson et al., 2023](#)). In addition to comorbidities, the ageing process also contributes to increased psychological vulnerability due to a reduced capacity to adapt to stress. A systematic review shows that older

women with comorbidities and functional limitations are the group most consistently found to experience emotional distress among older cancer patients ([Silva et al., 2022](#)). The complexity of these various factors reinforces the need for Mrs. W to receive a comprehensive, evidence-based nursing care approach in managing her anxiety.

The client's psychological presentation, characterised by a predominantly flat facial expression, limited eye contact, and verbalised worry about her illness and the planned surgery, is consistent with the defining characteristics of the nursing diagnosis of anxiety (D.0080) based on the Indonesian Nursing Diagnosis Standard. At the initial assessment, the screening results using the Geriatric Depression Scale-Short Form (GDS-SF) showed a score of 5, indicating mild depressive symptoms. In this case study, the GDS-SF was used as a depression screening instrument, whereas the nursing diagnosis of anxiety was established based on the comprehensive assessment findings according to SDKI indicators. This finding indicates that the client's psychological condition is related not only to anxiety, but also involves an affective dimension that requires attention throughout the course of nursing care ([Hu et al., 2022](#))

The findings of this case study are consistent with research showing that anxiety, depression, and distress are psychological problems frequently found in breast cancer patients, particularly from the time of diagnosis through to the period leading up to treatment ([Botto et al., 2024](#)). Other research also reports that anxiety and depression remain highly prevalent psychological problems among breast cancer patients, requiring early detection and comprehensive management as part of nursing care ([Breidenbach et al., 2022](#)). These findings reinforce the notion that the psychological condition of cancer patients is complex and interrelated, requiring a thorough assessment to determine appropriate nursing interventions. On the other hand, the client's spiritual belief that her illness was a test from God, together with her involvement in worship and church congregation activities, served as an adaptive coping mechanism. This spiritual support helped the client maintain hope, increased her acceptance of her illness, and supported her readiness to receive nursing interventions ([Almaraz et al., 2022](#)).

Although improvement in the signs and symptoms of anxiety occurred during the course of nursing care, this outcome cannot be interpreted as the effect of lavender aromatherapy alone. The improvement in the client's psychological condition may also have been influenced by the therapeutic relationship formed during the home visits, family support throughout the care process, the client's spiritual coping mechanisms, and the structured health education provided. The combination of lavender aromatherapy and deep breathing relaxation exercises in this case study should therefore be viewed as part of comprehensive nursing care, rather than as a stand-alone intervention. A holistic approach allows each component of care to complement one another in helping to reduce anxiety and increase the client's psychological readiness ahead of surgery. This approach is also consistent with the principles of Community Mental Health Nursing, which emphasise the provision of holistic, comprehensive care that involves the family and community in supporting patient health ([Hidayati et al., 2023](#)).

Effectiveness of Lavender Aromatherapy in Reducing Anxiety

The application of the combination of lavender aromatherapy and deep breathing relaxation exercises in this case study was associated with a gradual improvement in the client's psychological condition throughout the course of nursing care. This improvement was shown by reduced verbalisation of worry about the planned surgery, improved eye contact, a more relaxed facial expression, and increased openness in communication. Based on the nursing assessment findings according to the indicators of the Indonesian Nursing Diagnosis Standard, the signs and symptoms of anxiety also showed improvement at each visit. This finding is consistent with research reporting that the administration of lavender aromatherapy can help reduce anxiety in preoperative mastectomy patients ([Tarigan et al., 2022](#)).

Pharmacologically, the linalool and linalyl acetate content in lavender essential oil act via olfactory receptors, which then affect the limbic system, particularly the amygdala and hippocampus, producing a sedative and anxiolytic effect by reducing the stress (Yana et al., 2024). In addition, lavender aromatherapy inhalation has also been reported to help improve sleep quality by modulating GABAergic neuron activity in the central amygdala, which plays a role in regulating anxiety and sleep responses (Ren et al., 2025). This mechanism supports the use of lavender aromatherapy as a complementary intervention that can be applied in nursing practice to enhance patients' psychological comfort.

In addition to the improvement in the signs and symptoms of anxiety, the screening results using the Geriatric Depression Scale-Short Form (GDS-SF) also showed a decrease in score from 5 to 3. In this case study, the GDS-SF was used as a depression screening instrument, therefore, the change in score was not used as a primary outcome measure for anxiety but rather as a secondary indicator of overall psychological improvement. This improvement was also reflected in increased eye contact, the client's active engagement in communication, and her ability to perform the relaxation exercise independently. This finding is consistent with research showing that aromatherapy can help improve the psychological condition of cancer patients, including anxiety and depression (Li et al., 2022).

Nevertheless, the improvement in the client's psychological condition in this case study was likely not influenced by lavender aromatherapy alone. The therapeutic relationship formed during the home visits, family support, spiritual coping mechanisms, and the structured health education provided are all thought to have contributed to the change in the client's psychological condition. The combination of lavender aromatherapy and deep breathing relaxation exercises should therefore be viewed as part of comprehensive nursing care, rather than as a stand-alone intervention.

Effect of the Intervention on Sleep Quality and Pattern

Improvement in the client's sleep quality was shown by an increase in sleep duration from around 5 hours to 6-7 hours per night following the combination of lavender aromatherapy and deep breathing relaxation exercises. This finding is consistent with the results of a meta-analysis of 10 randomized controlled trials (RCT) involving 933 cancer patients, which reported that lavender aromatherapy can significantly improve sleep quality through a mechanism of muscle relaxation and reduced sympathetic nervous system activity, thereby facilitating sleep onset (Cheng et al., 2022). Another study on patients with haematological malignancy undergoing chemotherapy also showed that inhaling lavender aromatherapy for 20 minutes before sleep was able to improve Pittsburgh Sleep Quality Index (PSQI) scores and reduce fatigue levels compared with the control group (Yildirim et al., 2025).

The improvement in sleep quality in this case study may also have been influenced by the close relationship between anxiety and sleep disturbance. The reduction in the signs and symptoms of anxiety during the course of nursing care is thought to have helped the client achieve deeper sleep of longer duration. However, the client's sleep quality was not influenced by her psychological condition alone, but also by other factors, such as diabetes mellitus as a comorbidity, which can potentially cause nocturia (Fu et al., 2022). Therefore, blood glucose control remains an important part of a holistic nursing care approach.

Physiologically, the combination of lavender aromatherapy and deep breathing relaxation exercises is thought to produce complementary effects through two main mechanisms. The linalool content in lavender essential oil acts via the olfactory pathway to the limbic system and increases GABA receptor activity, producing a relaxation effect. Meanwhile, deep breathing relaxation exercises increase parasympathetic nervous system activity and heart rate variability, which contributes to a reduction in the stress response (Laborde et al., 2022). This finding is supported by a downward trend in blood pressure, from 122/87 mmHg at the first visit to 116/80 mmHg at the third visit, indicating a positive physiological response during the course of nursing care.

Relevance of the Gerontological Nursing Care Approach

The nursing care approach for Mrs. W was designed holistically, taking into account biological, psychological, social, and spiritual aspects in line with the principles of gerontological nursing. Throughout the course of care, the client demonstrated a belief that her illness was a test from God and remained active in worship and church activities. This served as a coping mechanism that helped her accept her illness and maintain emotional stability while facing the planned surgery. This finding is consistent with research showing that spirituality and religiosity act as protective factors that can improve the quality of life of cancer patients (Nagy et al., 2024). Other research also reports that cancer patients with higher levels of spirituality tend to have a better quality of life, particularly in the psychological and social domains (Majda et al., 2022). In addition, the client's involvement in *PKK* and *Dasawisma* activities also provided social support that helped maintain her psychological wellbeing.

In addition to addressing spiritual and social aspects, the nursing care also included education using infographic media on the surgical procedure, diabetes mellitus management, and strategies for coping with anxiety. Providing clear information helped increase the client's understanding of her health condition, thereby reducing the uncertainty that is one of the triggering factors for anxiety. This intervention is consistent with the Indonesian Nursing Intervention Standard for anxiety reduction (I.09314), which emphasises the importance of providing information about diagnosis, treatment, and prognosis as part of nursing care.

The positive outcomes in this case were also closely linked to the empathetic therapeutic communication, in a patient-centred manner, and through repeated home visits. This approach gave the client the opportunity to express her feelings, worries, and hopes more openly, allowing a trusting relationship to develop well. Nevertheless, the improvement in Mrs. W's psychological condition cannot be interpreted as the result of lavender aromatherapy alone. The therapeutic relationship formed during the care process, family support, spiritual coping mechanisms, and the health education provided gradually may also have contributed to the improvement in the client's condition. The combination of lavender aromatherapy and deep breathing relaxation exercises should therefore be viewed as part of comprehensive gerontological nursing care, rather than as a stand-alone intervention.

Study Limitations

This case study has several limitations. The use of a single-case design means the findings cannot be generalised to a wider population. In addition, anxiety was assessed based on the nursing assessment using the indicators of the Indonesian Nursing Diagnosis Standard, without the use of a standardised anxiety assessment instrument. The observation period, limited to before the surgical procedure, also did not allow for evaluation of the intervention's effectiveness during the postoperative phase. Further research with a stronger design, a larger sample size, and a longer follow-up period is therefore needed to confirm these findings.

Nursing Implications

The findings of this case study indicate that the combination of lavender aromatherapy and deep breathing relaxation exercises has the potential to become an independent nursing intervention that can be applied by nurses, particularly in community nursing services for older adults with breast cancer experiencing anxiety. Nevertheless, its application still needs to begin with a comprehensive nursing assessment tailored to each patient's condition and needs. The combination of lavender aromatherapy and deep breathing relaxation exercises may therefore be considered part of a community-based anxiety management programme carried out by nurses, while continuing to integrate therapeutic communication, health education, family support, and a spiritual approach as part of holistic nursing care.

CONCLUSION

This case study shows that the combination of lavender aromatherapy and deep breathing relaxation exercises, as part of community-based nursing care, was associated with improvement in the signs and symptoms of anxiety in an older adult patient with breast cancer ahead of surgery. This improvement was shown by reduced verbalisation of worry, improved eye contact and emotional expression, increased sleep duration, and a decrease in the Geriatric Depression Scale-Short Form (GDS-SF) score. These findings indicate that the combination of the two interventions has the potential to be an alternative non-pharmacological intervention that can be considered in nursing practice, provided it continues to be based on nursing assessment findings and tailored to each patient's condition and needs.

REFERENCES

- Almaraz, D., Saiz, J., Moreno Martín, F., Sánchez-Iglesias, I., Molina, A. J., & Goldsby, T. L. (2022). What Aspects of Religion and Spirituality Affect the Physical Health of Cancer Patients? A Systematic Review. <https://doi.org/10.3390/healthcare10081447>
- Botto, R., De Leonardis, B., Salussolia, A., Di Nardo, C., Ala, A., Torta, R., & Stanizzo, M. R. (2024). Assessment of anxiety, depression, and distress in breast cancer patients: A comparison among different phases of illness. <https://doi.org/10.1080/07399332.2022.2078325>
- Bray, F. I., Laversanne, M., Sung, H., Ferlay, J., Siegel, R. L., Soerjomataram, I., & Jemal, A. (2024). Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: A Cancer Journal for Clinicians*. <https://doi.org/10.3322/caac.21834>
- Breidenbach, C., Heidkamp, P., Hiltrop, K., Pfaff, H., Enders, A., Ernstmann, N., & Kowalski, C. (2022). Prevalence and determinants of anxiety and depression in long-term breast cancer survivors. <https://link.springer.com/article/10.1186/s12888-022-03735-3>
- Carlson, L. E., Ismaila, N., Addington, E. L., Asher, G. N., Atreya, C., Balneaves, L. G., Bradt, J., Fuller-Shavel, N., Goodman, J., Hoffman, C. J., Huston, A., Mehta, A., Paller, C. J., Richardson, K., Seely, D., Siwik, C. J., Temel, J. S., & Rowland, J. H. (2023). Integrative Oncology Care of Symptoms of Anxiety and Depression in Adults With Cancer: Society for Integrative Oncology–ASCO Guideline. *Journal of Clinical Oncology*. <https://doi.org/10.1200/JCO.23.00857>
- Cheng, H., Lin, L., Wang, S., Zhang, Y., Liu, T., Yuan, Y., Chen, Q., & Tian, L. (2022). Aromatherapy with single essential oils can significantly improve the sleep quality of cancer patients: a meta-analysis. <https://link.springer.com/article/10.1186/s12906-022-03668-0>
- Dikmeer, A., Burkuk, S., Unsal, P., Polat, M., Balci, C., Halil, M., Cankurtaran, M., & Balam Dogu, B. (2025). A concise instrument for screening cognitive impairment: validation in a geriatric population. *Aging Clinical and Experimental Research*, 37. <https://doi.org/10.1007/s40520-025-03056-x>
- Dinkes Jateng. (2022). Laporan Kinerja. <https://dinkes.jatengprov.go.id/laporan-kinerja/>
- Fauzi, A., Ahmedy, F., & Rosidah, R. (2024). Cross-culture adaptation and validation of Indonesian language version of Pittsburgh Sleep Quality Index. *International Journal of Public Health Science (IJPHS)*, 13. <https://doi.org/10.11591/ijphs.v13i4.23439>
- Fu, Z., Wang, F., Dang, X., & Zhou, T. (2022). The association between diabetes and nocturia: A systematic review and meta-analysis. *Frontiers in Public Health*. <https://doi.org/10.3389/fpubh.2022.924488>
- Hendrich, A. L., Bufalino, A., & Groves, C. (2020). Validation of the Hendrich II Fall Risk Model: The imperative to reduce modifiable risk factors. <https://doi.org/10.1016/j.apnr.2020.151243>
- Hidayati, L. N., Fahrizal, Y., & Wardaningsih, S. (2023). Pencegahan Stigma Gangguan Jiwa dengan Pelatihan Community Mental Health Nursing. *Aksiologi: Jurnal Pengabdian Kepada Masyarakat*. <https://doi.org/10.30651/aks.v7i3.9479>

- Hu, T., Zhao, X., Wu, M., Li, Z., Luo, L., Yang, C., & Yang, F. (2022). Prevalence of depression in older adults: A systematic review and meta-analysis. *Psychiatry Research*. <https://doi.org/10.1016/j.psychres.2022.114511>
- Kemkes RI. (2026). Kerangka Kerja Pencegahan dan Pengendalian Kanker. Kementerian Kesehatan Republik Indonesia. <https://kemkes.go.id/id/layanan/kerangka-kerja-pencegahan-dan-pengendalian-kanker>
- Laborde, S., Allen, M. S., Borges, U., & Dosseville, F. (2022). Effects of voluntary slow breathing on heart rate and heart rate variability: A systematic review and a meta-analysis. <https://doi.org/10.1016/j.neubiorev.2022.104711>
- Li, D., Li, Y., Bai, X., Wang, M., Yan, J., & Cao, Y. (2022). The Effects of Aromatherapy on Anxiety and Depression in People With Cancer: A Systematic Review and Meta-Analysis. <https://doi.org/https://doi.org/10.3389/fpubh.2022.853056>
- Majda, A., Szul, N., Kolodziej, K., Wojcieszek, A., Pucko, Z., & Bakun, K. (2022). Influence of Spirituality and Religiosity of Cancer Patients on Their Quality of Life. <https://doi.org/https://doi.org/10.3390/ijerph19094952>
- Nagy, D. S., Isaic, A., Motofealea, A. C., Popovici, D. I., Diaconescu, R. G., & Negru, S. M. (2024). The Role of Spirituality and Religion in Improving Quality of Life and Coping Mechanisms in Cancer Patients. <https://doi.org/10.3390/healthcare12232349>
- Oumer, A., Abebe, T., Hassan, K., & Hamza, A. (2022). Validity and Predictive Performance of Mini Nutritional Assessment Tool for Institutionalized Elders in Ethiopia. *BioMed Research International*. <https://doi.org/10.1155/2022/6764657>
- Rathnayake, N., Karunadasa, R., & Abeygunasekara, T. (2023). Katz index of activities of daily living in assessing functional status of older people: Reliability and validity of Sinhala version. *Dialogues in Health*, 2. <https://doi.org/10.1016/j.dialog.2023.100134>
- Ren, Y.-L., Chu, W.-W., Yang, X.-W., Xin, L., Gao, J.-X., Yan, G.-Z., Wang, C., Chen, Y.-N., Xie, J.-F., Spruyt, K., Lin, J.-S., Hou, Y.-P., & Shao, Y.-F. (2025). Lavender improves sleep through olfactory perception and GABAergic neurons of the central amygdala. <https://doi.org/10.1016/j.jep.2024.118942>
- Silva, S., Bártolo, A., Santos, I. M., Pereira, A., & Monteiro, S. (2022). Towards a Better Understanding of the Factors Associated with Distress in Elderly Cancer Patients: A Systematic Review. <https://doi.org/10.3390/ijerph19063424>
- Snellman, S., Hörnsten, C., Olofsson, B., Gustafson, Y., Lövheim, H., & Niklasson, J. (2024). Validity and test-retest reliability of the Swedish version of the Geriatric Depression Scale among very old adults. *BMC Geriatrics*, 24. <https://doi.org/10.1186/s12877-024-04869-7>
- Taramun, A. H., & Siswadi, Y. (2024). Efektifitas Aromaterapi Lavender dalam Menurunkan Tingkat Ansietas Pasien Pre Operasi: Literature Review. *Media Publikasi Promosi Kesehatan Indonesia (MPPKI)*. <https://doi.org/10.56338/mppki.v7i4.5105>
- Tarigan, E. R., Simanullang, R. H., Wahyu, A., Ginting, L., & Hutahaean, M. M. (2022). PRE-POST PEMBERIAN AROMATERAPI BUNGA LAVENDER TERHADAP SKALA ANSIETAS PADA PASIEN PRE-MASTEKTOMI. <https://doi.org/https://doi.org/10.51544/keperawatan.v5i1.2509>
- WHO. (2026). Breast cancer. <https://www.who.int/news-room/fact-sheets/detail/breast-cancer>
- Yana, Olivia Estrella, Sjattar, Elly Lilianty, & Erfina. (2024). Efektivitas Aromaterapi Inhalasi Lavender Dalam Upaya Meredakan Ansietas Pre-Operasi: Tinjauan Literatur. <https://doi.org/https://doi.org/10.36590/kepo.v5i2.1298>
- Yildirim, D., Ozdogan, M. H., Erdal, S., Selcuk, S., Guneri, A., Simsek, E. B., Can, T. B., Gunduz, H., & Kuni, A. (2025). The efficacy of lavender oil on fatigue and sleep quality in patients with hematological malignancy receiving chemotherapy: a single-blind randomized controlled trial. <https://doi.org/10.1007/s00520-024-09143-5>