

Guided Imagery Intervention Improves the Quality of Life in Breast Cancer Patients: A Literature Review

La intervención con imágenes guiadas mejora la calidad de vida en pacientes con cáncer de mama: Una revisión bibliográfica

Sulasri^{1,2}, Andi Zulkifli¹, Kadek Ayu Erika³

SUMMARY

Introduction: Breast cancer is the most common malignancy affecting women. The disease and its treatment can significantly impact patients' health-related quality of life, requiring further supportive interventions. Breast cancer management includes both pharmacological and non-pharmacological approaches. Among non-pharmacological interventions, guided imagery is a nursing intervention that has been explored for its potential benefits. **Objective:** This study aims to identify and provide an overview of evidence-based practices related to the development and implementation of guided imagery

nursing interventions to improve the health-related quality of life in breast cancer patients. **Methods:** A comprehensive literature search was conducted using electronic databases, including PubMed, EBSCO, ScienceDirect, ProQuest, and the Cancer Journal. The PICO (Population, Intervention, Comparison, Outcome) framework was used to formulate the search strategy, utilizing Boolean operators to refine results. The inclusion criteria included full-text research articles published within the last ten years. **Result:** A total of 43 articles were initially retrieved for full-text review. After screening, 33 articles were excluded due to the absence of guided imagery interventions, lack of full-text availability, or irrelevance to the study objective. Ultimately, 10 articles met the inclusion criteria and were reviewed. **Conclusions:** Guided imagery is a viable nursing intervention that helps alleviate symptoms and improve the health-related quality of life in breast cancer patients undergoing treatment. The findings suggest that guided imagery may serve as a supportive care strategy to improve overall well-being in this patient population.

Keywords: Guided imagery, breast cancer, quality of life.

DOI: <https://doi.org/10.47307/GMC.2025.133.3.25>

ORCID: 0000-0001-8333-9082^{1,2}

ORCID: 0000-0003-4437-6811¹

ORCID: 0009-0002-2676-3762³

¹Faculty of Public Health, Universitas Hasanuddin, Makassar, South Sulawesi, Indonesia

²Pelamonia Institute Health Science, Makassar, Indonesia

³Faculty of Nursing, Universitas Hasanuddin, Makassar, Indonesia

*Corresponding author: Andi Zulkifli, Email: zulkifliabdullah@yahoo.com

Address: Perintis Kemerdekaan Street No.KM.10, Tamalanrea Indah, Kec., Tamalanrea, Kota Makassar, Sulawesi Selatan 90245, Indonesia

Recibido: 10 de julio 2025

Aceptado: 29 de julio 2025

RESUMEN

Introducción: El cáncer de mama es la neoplasia maligna más común que afecta a las mujeres. La enfermedad y su tratamiento pueden afectar significativamente la calidad de vida relacionada con la salud de las pacientes, lo que requiere intervenciones de apoyo adicionales. El manejo del cáncer de mama incluye enfoques farmacológicos y no farmacológicos.

Entre las intervenciones no farmacológicas, la imagería guiada es una intervención de enfermería que se ha explorado por sus posibles beneficios.

Objetivo: Este estudio busca identificar y proporcionar una visión general de la práctica basada en la evidencia relacionada con el desarrollo de la implementación de intervenciones de enfermería con imagería guiada para mejorar la calidad de vida relacionada con la salud en pacientes con cáncer de mama. **Métodos:** Se realizó una búsqueda bibliográfica exhaustiva utilizando bases de datos electrónicas, como PubMed, EBSCO, ScienceDirect, ProQuest, Cancer Journal. Se utilizó el marco PICO (Población, Intervención, Comparación, Resultado) para formular la estrategia de búsqueda, utilizando operadores booleanos para refinar los resultados. Los criterios de inclusión incluyeron artículos de investigación a texto completo publicados en los últimos diez años. **Resultado:** Se recuperaron inicialmente 43 artículos para su revisión completa. Tras la selección, se excluyeron 33 artículos debido a la ausencia de intervenciones de imagería guiada, la falta de disponibilidad de texto completo o su irrelevancia para el objetivo del estudio. Finalmente, 10 artículos cumplieron los criterios de inclusión y fueron revisados. **Conclusiones:** La imagería guiada es una intervención de enfermería viable que ayuda a aliviar los síntomas y a mejorar la calidad de vida relacionada con la salud en pacientes con cáncer de mama en tratamiento. Los hallazgos sugieren que la imagería guiada puede servir como una estrategia de cuidados de apoyo para mejorar el bienestar general en esta población de pacientes.

Palabras clave: Imagería guiada, cáncer de mama, calidad de vida.

INTRODUCTION

Breast cancer is one of the most common malignancies in women, second only to cervical cancer, accounting for 11.7 % of the 19.3 million cancer cases worldwide, or 2 261 419 out of 19 292 789 cases (1). In Indonesia, breast cancer represents 16.6% (68 858 cases) of the total 396 914 newly diagnosed cancer cases (2). These statistics indicate that the incidence of breast cancer remains significant both globally and nationally.

The medical management of breast cancer typically involves a combination of treatment modalities, including radiation

therapy, chemotherapy, surgery, or multimodal approaches. However, these treatments often have adverse effects that can negatively impact patients' health-related quality of life (3). Physical side effects include pain, fatigue, decreased muscle strength, loss of appetite, poor sleep quality, changes in body composition, and reduced daily activity levels (4,5). Psychological side effects may include anxiety, fear, depression, cognitive decline, reduced concentration, limited comprehension, and decreased sexual function (4).

Managing these side effects requires a combination of pharmacological and non-pharmacological interventions. According to World Health Organization (WHO) guidelines, pharmacological treatments are administered based on the patient's specific symptoms and complaints (6). In contrast, non-pharmacological interventions, which can be implemented independently by nurses and healthcare professionals, aim to provide a holistic approach that minimizes drug side effects and dependency (7). One such intervention is guided imagery.

Given the potential benefits of guided imagery, this article aims to conduct a literature review on the effectiveness of guided imagery interventions in improving the quality of life of breast cancer patients.

METHODS

Search strategy and selection

A systematic literature search was conducted using the following electronic databases: PubMed, EBSCO, ScienceDirect, ProQuest, Cancer Journal, and Google Scholar. The keywords used in the search strategy included: "Cancer OR Breast Cancer AND Complementary Nursing OR Guided Imagery AND Pain Reduction AND Anxiety AND Vomit AND Health-Related Quality of Life". Boolean operators were applied to refine the search results. The inclusion criteria included full-text research articles published within the last ten years. All selected references were systematically managed using Mendeley for citation and referencing purposes.

Eligibility criteria

The PICO (Population, Intervention, Comparison, Outcome) framework was used to define the eligibility criteria. The population focus of this literature review was breast cancer patients who received guided imagery interventions aimed at improving their health-related quality of life. The review was not restricted to specific healthcare settings and included both inpatient and outpatient populations.

Data extraction and reporting

The extracted data from each study included key characteristics such as study design, research objectives, population, methodology, intervention details, outcomes of guided imagery,

and significant findings. These data were systematically organized and summarized in Table 1. The information was then synthesized and expanded upon in the Results section to provide a comprehensive analysis of the findings. The initial literature search yielded a total of 297 articles, distributed as follows: 98 from PubMed, 24 from EBSCO, 87 from ScienceDirect, 64 from ProQuest, and 24 from the Cancer Journal, as shown in Figure 1. After screening the abstracts for relevance and adherence to the inclusion criteria, 43 articles were selected for full-text review. Of these, 33 articles were excluded because they lacked guided imagery interventions or were not available in full text. Ultimately, 10 articles met the eligibility criteria and were included in the final review, as summarized in Table 1.

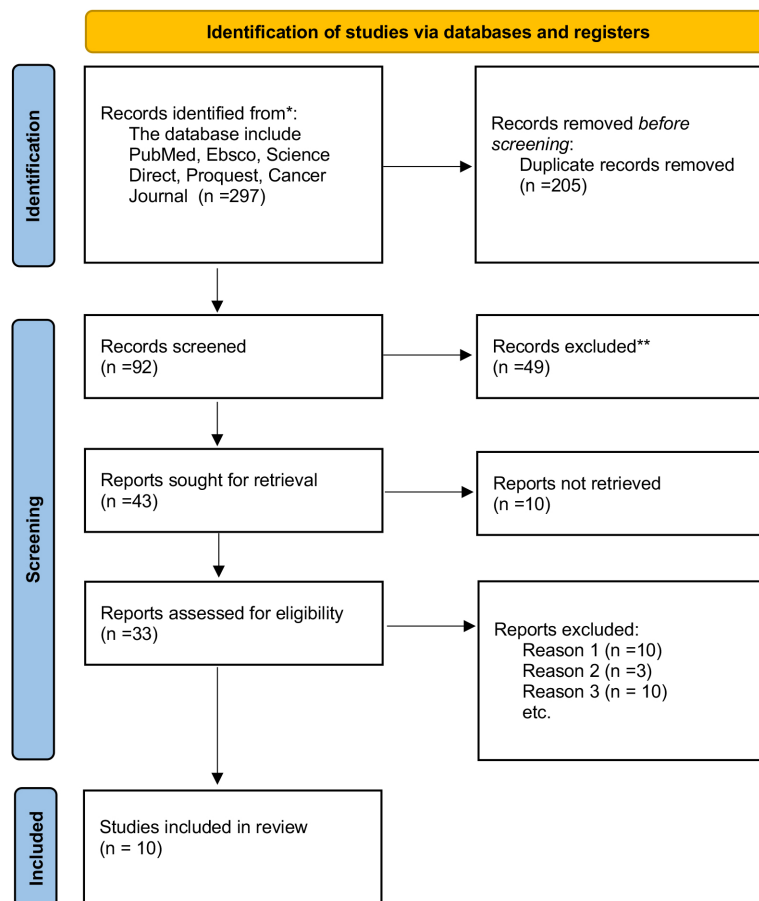


Figure 1. PRISMA Flow Diagram.

Table 1. Articles met the eligibility criteria and were included in the final review.

NO	TITLE	OBJECTIVE	METHOD	RESULTS
1	Guided Imagery Relaxation in Quality of Life of Patients Undergoing Hematopoietic Stem Cell Transplantation: A Quasi-Experiment (8)	To explore the effect of guided imagery relaxation on the quality of life of patients undergoing hematopoietic stem cell transplantation.	1. Quasi-experimental, longitudinal, and analytical study. 2. Sample: 42 participants (35 in the intervention group, 7 in the control group). 3. Instruments: a. Functional Assessment of Cancer Therapy–Bone Marrow Transplantation (FACT-BMT) b. Functional Assessment of Chronic Illness Therapy–Fatigue (FACT-Fatigue) c. Functional Assessment of Cancer Therapy–Neutropenia (FACT-N) 4. Intervention: Guided imagery relaxation with audio accompanied by 360° nature images. 5. Duration: 10 minutes, 3 times a week.	Health-related quality of life scores increased in both groups. The study indicates that patients undergoing hematopoietic stem cell transplantation experienced significant changes in their quality of life.
2	The Effects of Guided Imagery on State and Trait Anxiety and Sleep Quality Among Patients Receiving Haemodialysis: A Randomized Controlled Trial (9)	To determine the effect of guided imagery on anxiety traits and sleep quality in haemodialysis patients.	1. Randomized controlled trial (RCT). 2. Sample: 70 participants (35 in the intervention group, 35 in the control group). 3. Instruments: Spielberger State-Trait Anxiety Inventory (STAI), Pittsburgh Sleep Quality Index (PSQI) 4. Intervention: Guided imagery using a compact disc (CD). 5. Duration: 25 minutes, 6 times a week for four consecutive weeks, performed twice daily.	Guided imagery has been shown to significantly reduce anxiety and improve sleep quality in patients undergoing haemodialysis.
3	Guided Imagery Improves Mood, Fatigue, and Quality of Life in Individuals with Multiple Sclerosis: An Exploratory Efficacy Trial of Healing Light Guided Imagery (10)	To assess the potential of Healing Light (HL) Guided Imagery in improving patient-reported quality of life.	1. Exploratory study. 2. Sample: 23 participants. 3. Instrument: Patient journal or recorded self-reports. 4. Intervention: Guided imagery facilitated through visual cues by healthcare staff. 5. Duration: Once a week for 10 weeks.	Healing Light Guided Imagery improves patient-reported physical and mental health.
4	The Effects of Guided Imagery on Comfort in Palliative Care (11)	To evaluate the effect of guided imagery on patient comfort in palliative care.	1. Pre-posttest pre-experimental one-group study. 2. Sample: 28 participants. 3. Instruments: Heart rate (HR), respiratory rate (RR), pain (VAS), and comfort (VAS); The Holistic Comfort Scale (HCQ-PT-DC). 4. Intervention: Guided imagery script accompanied by music. 5. Duration: Two sessions of 17 minutes over two days.	Guided imagery intervention increased patient comfort levels and reduced heart rate, respiratory rate, and pain in palliative care patients.
5	The Effects of Guided Imagery and Hand Massage on Well-Being and Pain in Palliative Care: Evaluation of a Pilot Study (12)	To evaluate the effects of guided imagery and hand massage on well-being and pain in palliative care patients.	1. Pre-posttest quasi-experimental one-group study. 2. Sample: 20 participants. 3. Instrument: Functional Assessment of Chronic Illness Therapy–Palliative Care (FACT-Pal-14, 14-item version 4). 4. Intervention: Guided imagery script facilitated by a trained professional. 5. Duration: 20 minutes.	Guided imagery and hand massage interventions led to significant improvements in self-reported well-being and reductions in self-reported pain among palliative care patients.
6.	The Meaning of Integrative Guided Imagery Relaxation Therapy for Women with Breast Cancer (13)	To understand the significance of guided imagery relaxation for women with breast cancer, including how patients visualize	1. Qualitative study with a phenomenological approach. 2. Sample: 9 participants. 3. Instruments: Not specified.	Guided imagery provides meaningful therapeutic benefits, reinforcing its importance in nursing intervention

Continued in pag. 963...

...continuation Table 1. Articles met the eligibility criteria and were included in the final review.

NO	TITLE	OBJECTIVE	METHOD	RESULTS
7.	Feasibility and Acceptability of i-Restoring Body Image After Cancer (i-ReBIC): A Pilot Trial for Female Cancer Survivors (14)	their cancer and immune system during guided imagery sessions, and how they feel afterward. To evaluate the feasibility, acceptability, and psychosocial outcomes of a text-based online group therapy intervention, i-ReBIC, designed to reduce body image disturbance and psychosexual dysfunction in women diagnosed and treated for breast or gynecologic cancer.	4. Intervention: Guided imagery using a compact disc (CD) with visualization. 5. Duration: 15 minutes. 1. Face-to-face group therapy intervention study. 2. Sample: 47 participants. 3. Instruments: Quality of life instrument, The Functional Assessment of Cancer Therapy-General (FACT-G), Patient journals. 4. Intervention: Text-based guided imagery covering nine themes. 5. Duration: 90 minutes per session, once a week for 8 weeks.	for women with breast cancer by fostering self-reflection and emotional well-being. The i-ReBIC intervention was well-received and effective in addressing body image issues experienced by women treated for breast and gynecologic cancer.
8.	Restoring Body Image After Cancer (ReBIC): Results of a Randomized Controlled Trial (15)	To test a group psychosocial intervention aimed at improving body image disturbance, sexual function, and quality of life in breast cancer survivors.	1. Prospective randomized controlled trial (RCT). 2. Sample: 194 participants. 3. Instruments: a. Body Image: Body Image Scale (BIS), Body Image After Breast Cancer Questionnaire (BIBCO). b. Sexual Function: Female Sexual Function Index (FSFI). c. Quality of Life: Functional Assessment of Cancer Therapy (FACT). 4. Intervention: Text-based guided imagery. 5. Duration: 90 minutes per session, once a week for 8 weeks.	Restoring Body Image After Cancer (ReBIC), a group therapy intervention using guided imagery, effectively improves body image perception and quality of life in breast cancer survivors.
9.	Effectiveness of a Self-Care Toolkit for Surgical Breast Cancer Patients in a Military Treatment Facility (7)	To assess whether a self-care toolkit (SCT) provided to breast cancer patients undergoing surgery can reduce distress and alleviate symptoms associated with surgery.	1. Randomized controlled trial (RCT) with two non-blinded groups. 2. Sample: 100 participants (SCT: 51, TAU: 49). 3. Instruments: DVRPS Pain Scale, Visual Analog Scale (VAS) for anxiety and nausea. 4. Intervention: Guided imagery script in MP3 format, covering seven themes. 5. Duration: Varies by theme; recommended use is once per week and as often as desired, starting two weeks before surgery.	Patients using a self-care toolkit (SCT) in the perioperative period experienced reduced pain perception, fatigue, and inflammatory cytokine secretion.
10	Efektivitas Teknik Guided Imagery dalam Menurunkan Nyeri terhadap Kadar Endorfin pada Pasien Breast Cancer (The Effectiveness of Guided Imagery/Techniques in Reducing Pain and Endorphin Levels in Breast Cancer Patients) (16)	To examine the effectiveness of guided imagery in reducing pain and increasing endorphin levels in breast cancer patients.	1. Quasi-experimental, non-randomized study. 2. Sample: 16 participants (10 in the intervention group, 6 in the control group). 3. Instruments: a. McGill Pain Rating Index (PRI). b. McGill Present Pain Intensity (PPI). c. Visual Analog Scale (VAS). 4. Intervention: Guided imagery script in MP3 format (15-minute duration). 5. Duration: Administered twice over two days while the patient is hospitalized.	Guided imagery intervention effectively reduces pain scores in breast cancer patients and is more effective in increasing serum endorphin levels in the treatment group.

DISCUSSION

Cancer and its treatment significantly impact patients' health-related quality of life (HRQoL) due to the associated side effects (3). These symptoms can profoundly affect various aspects of a patient's well-being, including physical, psychological, social, and spiritual dimensions (17). Pain and physical discomfort are among the most common complaints in breast cancer patients, manifesting as subjective sensory experiences (18). Pain in breast cancer, like in other malignancies, can lead to multidimensional distress, affecting psychological well-being, social interactions, spiritual beliefs, and most prominently, physical functioning (19). Other physical side effects include fatigue, weakness, reduced muscle strength, loss of appetite, sleep disturbances, and decreased daily activity levels. Psychological effects often include anxiety, fear, loss of concentration, and depression, while social consequences may involve diminished interpersonal relationships and concerns about physical appearance. The spiritual impact can include increased existential distress, a loss of meaning or purpose in life, and challenges in religious or personal beliefs (20,21).

Non-pharmacological interventions serve as complementary therapeutic options that nurses can independently implement. These interventions often include biobehavioural and cognitive-behavioural techniques, one of which is guided imagery (22,23). Guided imagery is a cost-effective complementary therapy used in healthcare systems to improve patient health promotion, function, and overall well-being (24). It has been shown to improve immune function, enhance sleep quality, and reduce adverse effects associated with cancer treatments such as chemotherapy and radiation therapy (25). Guided imagery involves the cognitive process of creating vivid mental images that engage multiple senses, influencing psychophysiological responses and promoting behavioural, perceptual, or physiological changes facilitated by a person (trained practitioner) or delivered through various media (26). Similarly, a study by Corpora et al. (12) indicated that combining guided imagery with hand massage interventions led to notable improvements in self-reported well-being and

reductions in self-reported pain among palliative care patients.

Guided imagery is a cognitive technique involving deliberately structured imagination to elicit positive and pleasant effects (27). By visualizing pleasant scenarios, tense muscles can undergo relaxation due to changes in motor activity. This occurs as the stimulus of pleasant imagery is processed through the brainstem and transmitted to the sensory thalamus for further integration and processing. The stimulus is then relayed to both the amygdala and hippocampus, as well as the cerebral cortex. Within the cerebral cortex, sensory and associative processing occur. In the hippocampus, these pleasant images are encoded into memory. When an individual engages in guided imagery, previously stored positive memories can be recalled, influencing perception. The hippocampus then transmits this meaningful stimulus to the amygdala, which generates an appropriate emotional and physiological response based on the interpreted meaning (28,29).

Guided imagery interventions have been shown to reduce pain by stimulating the pituitary gland to release endorphins, which induce feelings of calm, pleasure, and happiness (30). This aligns with a study by Sulastrri et al. (16), which demonstrated that guided imagery is effective in reducing pain scores in breast cancer patients and is empirically more effective in increasing serum endorphin levels in the treatment group, which demonstrated that guided imagery is effective in reducing pain scores in breast cancer patients and is empirically more effective in increasing serum endorphin levels in the treatment group. Endorphins function as excitatory neurotransmitters that activate the brain's analgesic pathways, producing effects similar to those of morphine (31). The resulting sensations of calmness, pleasure, and happiness (comfort) are associated with psychobiological interactions involving endorphins, which contribute to improved physical well-being and emotional stability. Consequently, these effects have a positive impact on patients' overall quality of life. A study by Alves da Silva et al. (32) reported improvements in health-related quality of life scores among patients undergoing hematopoietic stem cell transplantation, highlighting significant

changes in their perceived well-being. Similarly, a study by Afshar et al. (9) suggested that guided imagery significantly reduces anxiety and improves sleep quality in patients undergoing haemodialysis.

Guided imagery interventions are effective in managing pain, anxiety, reduced sleep quality, and other side effects associated with cancer treatment. Studies indicate that listening to guided imagery for 10-30 minutes daily can significantly alleviate pain, anxiety, depression, nausea, loss of appetite, and other treatment-related adverse effects. Cancer and its treatments profoundly impact patients' mental health and psychological well-being, often leading to symptoms such as insomnia, nausea, decreased appetite, and neuropathy. Guided imagery aids in symptom management by redirecting patients' attention away from their illness, treatment side effects, and distressing emotions, instead encouraging a focus on calming and pleasant mental imagery (7,9,10,12).

CONCLUSION

Guided imagery is a biobehavioural therapy used as a nursing intervention to alleviate complaints experienced by breast cancer patients due to the disease and its treatment. By integrating guided imagery into patient care, it can contribute to improving health-related quality of life. As a mind-body intervention, guided imagery is recognized as a complementary and alternative therapy within the healthcare field. Its application as a non-pharmacological approach offers an alternative option for nursing interventions aimed at improving the well-being of cancer patients undergoing treatment.

Conflict of interest

All authors declare that there are no conflicts of interest in connection with the publication of this article.

Funding

Funding for this research was provided by the Center for Higher Education Funding and Assessment (PPAT), the Ministry of Higher

Education, Science, and Technology of the Republic of Indonesia, through the Indonesia Endowment Fund (LPDP) with an Indonesian Educational Scholarship (BPI).

REFERENCES

1. Bray F, Laversanne M, Sung H, Ferlay J, Siegel RL, Soerjomataram I, Jemal A. Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin*. 2024;74(3):229-263.
2. Salma. Cancer Cases Surge in Indonesia; Experts Stress the Importance of Early Symptom Awareness. Yogyakarta: Universitas Gadjah Mada; 2025.
3. Johannsen M, Farver I, Beck N, Zachariae R. The efficacy of psychosocial intervention for pain in breast cancer patients and survivors: A systematic review and meta-analysis. *Breast Cancer Res Treat*. 2013;138(3):675-690.
4. Hadjibalassi M, Lambrinou E, Papastavrou E, Papathanassoglou E. The effect of guided imagery on physiological and psychological outcomes of adult ICU patients: A systematic literature review and methodological implications. *Aust Crit Care*. 2018;31(2):73-86.
5. Kelly DL, Yang GS, Starkweather AR, Siangphoe U, Alexander-Delpech P, Lyon DE. Relationships Among Fatigue, Anxiety, Depression, and Pain and Health-Promoting Lifestyle Behaviors in Women With Early-Stage Breast Cancer. *Cancer Nurs*. 2020;43(2):134-146.
6. Spiva L, Hart PL, Gallagher E, McVay F, Garcia M, Malley K, et al. The Effects of Guided Imagery on Patients Being Weaned from Mechanical Ventilation. *Evid Based Complement Alternat Med*. 2015;2015:802865.
7. Stoerker E, Bellanti D, Paat C, Peacock K, Aden J, Setlik R, et al. Effectiveness of a Self-Care Toolkit for Surgical Breast Cancer Patients in a Military Treatment Facility. *J Altern Complement Med*. 2018;24(9-10):916-925.
8. Silva LAAd, Machado CAM, Santana EdO, Silva MNd, Felix JVC, Sawada NO, et al. Guided imagery relaxation in quality of life of patients undergoing hematopoietic stem cell transplantation: A quasi-experiment. *Asian Pacific J Cancer Preven*. 2021;22(8):2453-2460.
9. Afshar M, Mohsenzadeh A, Gilasi H, Sadeghi-Gandomani H. The effects of guided imagery on state and trait anxiety and sleep quality among patients receiving hemodialysis: A randomized controlled trial. *Complement Ther Med*. 2018;40:37-41.

10. Case LK, Jackson P, Kinkel R, Mills PJ. Guided Imagery Improves Mood, Fatigue, and Quality of Life in Individuals with Multiple Sclerosis: An Exploratory Efficacy Trial of Healing Light Guided Imagery. *J Evid Based Integr Med*. 2018;23:2515690x17748744.
11. Coelho A, Parola V, Sandgren A, Fernandes O, Kolcaba K, Apóstolo J. The Effects of Guided Imagery on Comfort in Palliative Care. *J Hosp Palliat Nurs*. 2018;20(4):392-399.
12. Corpora M, Liggett E, Leone AF. The effects of guided imagery and hand massage on wellbeing and pain in palliative care: Evaluation of a pilot study. *Complement Ther Clin Pract*. 2021;42:101303.
13. Toneti BF, Avelar JMP, Sousa FH, Toneti AN, Sonobe HM, Sawada NO. The meaning of integrative guided imagery relaxation therapy for women with breast cancer. *Rev Esc Enferm USP*. 2019;53:e03947.
14. Trachtenberg L, Wong J, Rennie H, McLeod D, Leung Y, Warner E, Esplen MJ. Feasibility and acceptability of i-Restoring Body Image after Cancer (i-ReBIC): A pilot trial for female cancer survivors. *Psychooncology*. 2020;29(4):639-646.
15. Esplen MJ, Wong J, Warner E, Toner B. Restoring Body Image After Cancer (ReBIC): Results of a Randomized Controlled Trial. *J Clin Oncol*. 2018;36(8):749-756.
16. Sulastri S, Erika KA, Rachmawati R. Efektivitas Teknik Guided Imagery dalam Menurunkan Nyeri terhadap Kadar Endorfin pada Pasien Breast Cancer. *Jurnal Keperawatan*. 2025;17(1).
17. So WKW, Law BMH, Chan DNS, Xing W, Chan CWH, McCarthy AL. The Effect of Nonpharmacological Interventions on Managing Symptom Clusters Among Cancer Patients: A Systematic Review. *Cancer Nurs*. 2020;43(6):E304-e27.
18. Emilia NL, Angelina NP. Application of Guided Imagery Therapy to Improve Sleep Quality of the Elderly: A Case Study. *An Idea Health J*. 2023;3(3):86-90.
19. Dong ST, Costa DS, Butow PN, Lovell MR, Agar M, Velikova G, et al. Symptom Clusters in Advanced Cancer Patients: An Empirical Comparison of Statistical Methods and the Impact on Quality of Life. *J Pain Symptom Manage*. 2016;51(1):88-98.
20. Booth, Whicker L, Wyman T. *Medical Assisting: Administrative and clinical procedures with anatomy and physiology*. 5th edition. McGraw-Hill. 2012.
21. Raphael J, Ahmedzai S, Hester J, Urch C, Barrie J, Williams J, et al. Cancer pain: part 1: Pathophysiology; oncological, pharmacological, and psychological treatments: A perspective from the British Pain Society endorsed by the UK Association of Palliative Medicine and the Royal College of General Practitioners. *Pain Med*. 2010;11(5):742-764.
22. Zhang X, Wang Q, Zhang X, Wu X, Wang Q, Hong J. A Cognitive-Behavioral Intervention for the Symptom Clusters of Chinese Patients With Gastrointestinal Tract Cancer Undergoing Chemotherapy: A Pilot Study. *Cancer Nurs*. 2019;42(6):E24-e31.
23. Tri Wahyuni A, Purwanto P. The Effect of Guided Imagery in Reducing Pain Intensity in Costa Fracture Patients with Levine Theory Approach: A Case Study. *An Idea Nurs J*. 2024;3(02):46-52.
24. Lewandowski W, Jacobson A. Bridging the gap between mind and body: a biobehavioral model of the effects of guided imagery on pain, pain disability, and depression. *Pain Manag Nurs*. 2013;14(4):368-378.
25. Serra D, Parris CR, Carper E, Homel P, Fleishman SB, Harrison LB, Chadha M. Outcomes of guided imagery in patients receiving radiation therapy for breast cancer. *Clin J Oncol Nurs*. 2012;16(6):617-623.
26. Krau SD. The Multiple Uses of Guided Imagery. *Nurs Clin North Am*. 2020;55(4):467-474.
27. Nooner AK, Dwyer K, DeShea L, Yeo TP. Using Relaxation and Guided Imagery to Address Pain, Fatigue, and Sleep Disturbances: A Pilot Study. *Clin J Oncol Nurs*. 2016;20(5):547-552.
28. Berman A, Snyder S. Kozier & Erbs: Fundamentals of Nursing Concepts, Process, and Practice.: Pearson; 2014
29. Efendi S, Agus AI, Syatriani S, Amir H, Alam RI, Nurdin S, et al. The Effect of Benson Relaxation on Quality of Sleep of Cancer Patients. *Open Access Macedonian Journal of Medical Sciences*. 2022;10(G):99-104.
30. Vagnoli L, Bettini A, Amore E, De Masi S, Messeri A. Relaxation-guided imagery reduces perioperative anxiety and pain in children: A randomized study. *Eur J Pediatr*. 2019;178(6):913-921.
31. John E. Guyton dan Hall: Buku ajar fisiologi kedokteran (D. W. M & A. Tanzil (eds.); Keduabelas): Elsevier; 2014.
32. Alves da Silva L, Mattos Machado CA, Oliveira Santana EO, Nunes da Silva M, Cestari Felix JV, Okino Sawada N, et al. Guided imagery relaxation in quality of life of patients undergoing hematopoietic stem cell transplantation: A quasi-experiment. *Asian Pac J Cancer Prev*. 2021;22(8):2453-2460.