

SYSTEMATIC REVIEW

Reflexology Management for Reducing Nausea and Vomiting: A Systematic Review

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ABSTRACT

Introduction: This study aims to explore the impact of reflexology in reducing nausea and vomiting in patients with various medical conditions. **Methods:** This systematic review used database: CINAHL, PubMed, and Scopus with keywords "reflexology," "nausea," "vomiting". Inclusion criteria included original research, English, last 15 years (2011–2025). Data extraction used manual tables and data analysis used descriptively qualitatively. **Results:** We found 15 articles discussed the effectiveness reflexology in reducing nausea and vomiting. Reflexology is effective in reducing nausea and vomiting with optimal duration of 20–30 minutes per session (2–3 times per week). The reflexology as a single therapy, in combination with other therapies such as yoga and acupressure, optimal duration and frequency, and the influence of culture on the acceptance of therapy. **Conclusion:** Reflexology is an effective holistic approach to reducing nausea and vomiting in a variety of medical conditions, with the potential to improve patients' quality of life.

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INTRODUCTION

Nausea and vomiting are common clinical symptoms, both in acute and chronic conditions, and can affect a wide range of populations with varying causes. Globally, nausea and vomiting are reported to occur in approximately 70-80% of patients undergoing cancer chemotherapy, making it one of the most common side effects of this treatment (1). In pregnant women, hyperemesis gravidarum, a severe form of nausea and vomiting, affects approximately 0.3-3% of pregnancies worldwide, often having a significant impact on the nutritional status of the mother and fetus and their quality of life (2). In addition, nausea and vomiting are also common in post-operative patients, with an estimated prevalence of 20-30% in the general population and increasing to 80% in patients with high-risk factors such as the use of volatile anesthetics or opioids (3).

Untreated nausea and vomiting can have a significant impact on various aspects of a patient's quality of

life, including physical, psychological, social, and economic. Physically, these symptoms can lead to dehydration, electrolyte imbalance, malnutrition, and weakness, which in severe cases can worsen the patient's underlying medical condition (4). From a psychological perspective, repeated nausea and vomiting often triggers anxiety, stress, and depression, especially in patients with chronic diseases such as cancer or pregnant women with hyperemesis gravidarum (5). The social impact also cannot be ignored, because these symptoms can limit daily activities, reduce social interactions, and increase the patient's dependence on family members or caregivers. Economically, persistent nausea and vomiting often increase health care costs, either through additional hospitalizations, the need for antiemetic drugs, or lost productivity due to the patient's inability to work (6).

The conventional approach to treating nausea and vomiting generally involves the use of antiemetic drugs, which are designed to inhibit certain neurochemical pathways that trigger the nausea and vomiting response (7). Drugs such as serotonin receptor antagonists (eg, ondansetron), dopamine receptor antagonists (eg, metoclopramide), and corticosteroids (eg, dexamethasone) have been shown to be effective in a

variety of conditions, including chemotherapy-induced, postoperative, and pregnancy-induced nausea and vomiting (8). These antiemetics work well in suppressing symptoms, especially when used in combination based on different mechanisms. In addition, side effects such as sedation, headache, constipation, hypotension, and, in some cases, motor disorders such as dyskinesia, may limit their use, especially in patients with certain conditions or who are taking other medications. In addition, the long-term cost of some antiemetics, especially those used for chemotherapy, is also a challenge, especially in countries with limited resources (9).

Reflexology is a therapy that involves applying pressure to specific reflex points on the feet, hands, or ears, which are believed to have direct connections to organs or systems of the body through energy or nerve pathways (10). The basic concept of reflexology is rooted in the theory that the body has interconnected reflex zones, and that stimulation of these areas can help restore the body's natural balance and promote healing. The mechanism of action of reflexology is thought to involve activation of the peripheral nervous system, which stimulates blood flow, reduces muscle tension, and modulates the activity of the autonomic nervous system (11). In addition, reflexology is also believed to be able to stimulate the release of endorphins, hormones that play a role in reducing pain and providing a relaxing effect. As a non-invasive therapy, reflexology is widely used to improve general well-being and reduce symptoms of various conditions, including chronic pain, anxiety, and nausea (12).

Reflexology therapy to treat nausea and vomiting caused by various medical conditions. In cancer chemotherapy, this therapy stimulates reflex points related to the digestive tract and the autonomic nervous system (10,13). In pregnant women with hyperemesis gravidarum, reflexology focuses on points on the feet to stabilize hormones and reduce nausea. Post-operatively, reflexology helps relieve the side effects of anesthesia such as nausea by relaxing the nerves and improving circulation (14). The procedure involves gentle massage of specific reflex points, providing a relaxing and comforting effect. As a non-pharmacological intervention, reflexology offers a safe and holistic approach for patients seeking to reduce the side effects of antiemetic drugs (11,15).

Reflexology has several advantages to overcome nausea and vomiting. This therapy has minimal side effects because it is non-invasive, using gentle massage on reflex points on the feet, hands, or ears, making it safer than drugs (16). Reflexology is also practical and easy to apply without the need for special equipment, with short and flexible sessions. In addition, the cost is relatively affordable compared to conventional medical treatments, making it a cost-effective alternative for patients who are looking for natural therapies or have

limited access to medical services (10).

The gap in knowledge regarding the effectiveness of reflexology for nausea and vomiting is largely due to a lack of consistency and standardization in existing research. Many studies use varying methodologies, such as duration of therapy, techniques used, and patient conditions, making it difficult to draw consistent conclusions about its effectiveness. In addition, many studies do not involve adequate controls or objective measures of symptoms, making the results difficult to generalize. To address these limitations, it is important to conduct a systematic review of the existing literature to organize the available evidence, assess study quality, and identify consistent patterns.

METHODOLOGY

Study Design

This study used a systematic review design to examine the existing evidence on reflexology in reducing nausea and vomiting in patients with certain medical conditions (17). The main purpose of using this design is to collect, assess, and synthesize all relevant evidence from various published studies, so as to provide stronger and more reliable conclusions regarding the effectiveness of reflexology therapy. The systematic review design was chosen because this method allows researchers to comprehensively evaluate existing studies, identify potential biases, and assess the methodological quality of the research used in each study. The stages in this systematic review include: first, identification and search for relevant studies through a systematic search strategy in various databases; second, selection of articles based on predetermined inclusion and exclusion criteria; third, data extraction from selected articles; fourth, critical assessment of study quality; and fifth, analysis and synthesis of research findings to describe existing patterns. This process follows the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure transparency and integrity at every stage of the research (Figure 1).

Search Strategy and Eligibility Criteria

The search for articles in this study was conducted through three major databases that have been proven to have broad coverage and high relevance in the health sciences field: Scopus, PubMed, and CINAHL. Scopus was chosen because it provides comprehensive access to multidisciplinary scientific literature, while PubMed offers a rich source of medical articles and clinical-based research. CINAHL, on the other hand, has a strong focus on nursing and related health sciences literature. The keywords used in this search involved a combination of Boolean terms and MeSH terms (Medical Subject Headings), such as "reflexology," "nausea," "vomiting," "clinical trial," and "therapy," combined with Boolean operators such as AND, OR, and NOT to optimize the search. The research question used was: "Is reflexology

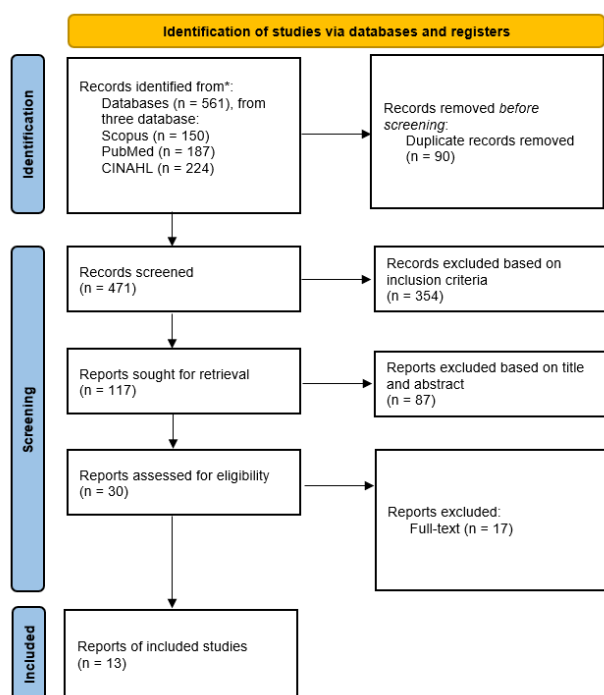


Figure 1: PRISMA Flow Diagram

effective in reducing nausea and vomiting in patients with certain medical conditions?”. Each search will be conducted by utilizing relevant keywords in these three databases to ensure broad coverage and higher study relevance. The search results will be reported using the PRISMA Flow Diagram to provide a clear visual representation of the article selection process.

The search strategy in this research is:

Scopus: (TITLE-ABS-KEY("reflexology" OR "foot massage" OR "zone therapy") AND TITLE-ABS-KEY("nausea" OR "queasiness" OR "sickness") AND TITLE-ABS-KEY("vomiting" OR "emesis" OR "retching") AND TITLE-ABS-KEY("therapy" OR "treatment"))

PubMed: (("Reflexology"[MeSH Terms] OR "foot massage"[Tw]) AND ("Nausea"[MeSH Terms] OR "queasiness"[Tw]) AND ("Vomiting"[Tw] OR "emesis"[MeSH Terms] OR "retching"[MeSH Terms]) AND ("therapy"[MeSH Terms] OR "treatment"[Tw]))

CINAHL: ((MH "Reflexology" OR MH "Foot Massage") AND (MH "Nausea" OR MH "Queasiness") AND (MH "Vomiting" OR MH "Emesis" OR MH "Retching") AND (MH "Therapy" OR MH "Treatment"))

Inclusion and Exclusion Criteria

In this systematic review, the inclusion criteria were based on the PICO (Population, Intervention, Comparison, Outcome) concept. The population selected was patients who experienced nausea and vomiting due to certain medical conditions, such as chemotherapy or post-surgery. The intervention studied was reflexology therapy. Since no specific comparison group was needed, comparison was omitted. The outcome analyzed was the effectiveness of reflexology

in reducing symptoms of nausea and vomiting. The inclusion criteria included: (1) original research, (2) articles published in English, (3) publication period in the last 20 years (2005-2025), and (4) research samples involving patients with diabetes mellitus or related medical conditions. Exclusion criteria included articles that did not contain empirical data or were only in the form of literature reviews, as well as articles that were not directly related to nausea and vomiting. The selection of these inclusion criteria was based on the need to obtain the most recent and relevant evidence regarding the application of reflexology in patients with medical conditions related to nausea and vomiting, with a focus on higher methodological quality.

Data Extraction

Data extraction was performed using a manual table containing important information from each selected article, including: (1) authors, (2) research objectives, (3) research design, (4) samples used, (5) research location, (6) interventions applied, and (7) results obtained. The extraction process was carried out by two authors independently, who have expertise in their fields, to minimize bias and increase the validity of the data obtained. If there is a difference of opinion between the two authors in terms of data interpretation or information selection, a third author with relevant expertise will be invited to perform additional analysis to reach consensus. This ensures that the extracted data is accurate and representative of the existing research findings.

Critical Appraisal

The methodological quality assessment of each selected article was carried out using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist. The JBI is a tool used to assess the quality of research and the potential for bias that may affect the results of a study. The assessment is carried out by considering aspects such as study design, internal validity, the appropriateness of the instruments used, and the representativeness of the sample. Articles that score more than 70% in this assessment are considered to be of good quality and worthy of being included in the analysis. This critical appraisal is important to ensure that only studies with valid and reliable methodology are included in the evidence synthesis, so that these systematic results have a strong basis for drawing appropriate conclusions.

Data analysis

Data analysis was conducted using a qualitative descriptive approach using a thematic analysis approach, which aimed to identify and describe the main themes that emerged from the various studies reviewed. The analysis stage began by reading all articles carefully to understand the context and main findings of each study. Next, the authors identified relevant themes and noted patterns that emerged in the findings related to the effectiveness of reflexology. The analysis was

conducted by two authors independently to ensure accuracy and consistency of data interpretation. If there were differences of opinion in the interpretation of themes or data grouping, a third author was involved to provide additional views and reach consensus. The results of this thematic analysis will be used to describe the various themes and patterns that exist, provide a deeper understanding of the application of reflexology in reducing nausea and vomiting, and suggest areas for further research.

RESULTS

The initial research results showed that there were 561 reports. The author eliminated using the Mendeley application, there were 90 duplicate articles. Then, the author eliminated based on the inclusion criteria, there were 354 articles. Then, the author eliminated based on the abstract and title, 87 articles did not match the title and abstract. After that, the author read the title in full text, there were 13 articles that matched the research objectives, namely discussing reflexology against nausea. All of these articles showed a JBI assessment value of more than 70% (Table I).

The administration of reflexology varied significantly across the studies reviewed, including differences in treatment duration, frequency, and the qualifications of the practitioners. Treatment duration ranged from 10 to 40 minutes per session, with some studies providing shorter sessions and others opting for longer treatments. For example, reflexology was applied for 30 minutes per session (18), in the other study, the sessions lasted only 10 minutes, administered once at 1 hour and again at 12 hours post-surgery (19). This variability in session length could influence the intensity of the treatment, and further investigation is needed to determine the most effective duration.

The frequency of reflexology sessions also showed considerable variation. In some studies, sessions were conducted twice a week over a span of several weeks, while others, utilized a more intensive, short-term approach, applying reflexology in a single or few sessions (20,21). The most frequently applied frequency was once a week, though it varied significantly depending on the study's design and the condition being treated. The number of sessions, therefore, may

Table 1: Extraction Data

Author and Year	Objective	Country	Design	Sample	Intervention	Results
(Naseri-Salahshour et al., 2019) (18)	Assessing reflexology's effect on nausea in hemodialysis patients	Iran	RCT	72 hemodialysis patients (36 intervention, 36 control)	Reflexology on the solar plexus and soles for 30 minutes per session for 12 days	Significant decrease in nausea intensity on days 3, 6, 9, and 12 ($p < 0.05$)
(Wanchai & Armer, 2020) (19)	Effectiveness of reflexology for managing symptoms of breast cancer treatment	Thailand, USA	Systematic Review	6 studies (60-385 participants)	Reflexology on feet by certified reflexologists for 20-40 minutes per session for up to 3 months	Reflexology reduces nausea, vomiting, and fatigue ($p < 0.05$). No significant effects for peripheral neuropathy, depression, or anxiety. Improvement in quality of life ($p < 0.05$)
(Izzdelikara & Tan, 2017) (20)	Reflexology effects on symptoms and quality of life in breast cancer patients	Turkey	Pre-test-posttest experiment	60 breast cancer patients (30 control, 30 intervention)	Reflexology for 20 minutes per session twice a week for 4 weeks	Significant reduction in nausea, vomiting, and fatigue ($p < 0.05$)
(Rumbo et al., 2024) (21)	Reflexology's effectiveness in hypertension management	Indonesia, Thailand, China, Uganda	Systematic Review	23 studies (10 RCTs, 7 cross-sectional, 4 experimental, 1 cohort, 1 mixed-methods)	Reflexology on blood pressure-related reflex points for 20 minutes per session	Significant reduction in blood pressure ($p < 0.05$). Best effects when combined with yoga and meditation
(Moghadam et al., 2021) (22)	Comparing hand and foot reflexology in postoperative nausea, vomiting, and ileus	Iran	RCT	90 women post-abdominal surgery (30 hand, 30 foot, 30 control)	Reflexology twice (1 and 12 hours post-surgery), 10 minutes per hand/foot	Significant decrease in nausea in hand and foot group ($p < 0.001$). No significant effect on vomiting ($p > 0.05$). Reflexology recommended for ileus ($p < 0.05$)
(Choudhary, 2021) (23)	Reflexology for postoperative nausea and vomiting prevention	India	RCT	60 general postoperative patients (32 reflexology, 28 control)	Foot reflexology for 20 minutes combined with antiemetic drugs	Significant reduction in nausea severity ($p < 0.05$). Reduced antiemetic dose ($p < 0.05$)

CONTINUE

Table 1: Extraction Data

Author and Year	Objective	Country	Design	Sample	Intervention	Results
(Puspitasari et al., 2022) (24)	Community knowledge and attitudes about diarrhea management in children	Indonesia	Cross-sectional	107 community participants	Survey on knowledge & attitudes regarding diarrhea	Good knowledge about diarrhea symptoms (87.85%) but lacking in specific treatments like drug administration ($p < 0.05$)
(Putri, 2023) (25)	Reviewing complementary therapies for postpartum maternal mental health	Indonesia	Literature Review	725 articles reviewed	Reflexology, yoga, music therapy, touch therapy, aromatherapy	Reflexology increased relaxation and reduced postpartum stress ($p < 0.05$). Best effects when combined with yoga
(Keller & Keck, 2006) (30)	Validating the Keller Index of Nausea (KIN) for assessing nausea in children	USA	Observational Study	120 children	Validity testing of KIN instrument	KIN instrument found valid and reliable for assessing nausea in children ($p < 0.05$)
(Memorial Sloan Kettering Cancer Center, 2019) (27)	Acupressure for reducing nausea and vomiting in cancer patients	USA	Educational guide	No specific sample	Acupressure on P6 (Neiguan) wrist point	Acupressure effective in reducing nausea and vomiting ($p < 0.05$). No side effects reported
(Izdelikara & Tan, 2017) (37)	Reflexology on chemotherapy-induced nausea, vomiting, and fatigue	Turkey	Pre-test-posttest experiment	60 breast cancer patients (30 control, 30 intervention)	Reflexology for 20 minutes per session twice a week for 4 weeks	Reflexology significantly reduced nausea, vomiting, and fatigue ($p < 0.05$)
(Bauer et al., 2020) (31)	Assessing advanced practitioners' knowledge and use of CIM	USA	Cross-sectional survey	556 health-care providers (physician assistants, nurse practitioners)	Survey on knowledge, attitudes, and use of CIM	Positive attitudes towards CIM therapies; low knowledge base about their benefits and risks ($p < 0.05$)
(Oldland et al., 2020) (28)	Framework for nurses' responsibilities to improve healthcare quality	Australia	Exploration study	74 registered nurses	Focus groups to develop nursing framework	Developed framework for improving healthcare quality, including evidence-based practices

affect the cumulative therapeutic benefits and long-term outcomes of reflexology.

Regarding practitioner qualifications, reflexology was typically administered by certified reflexologists, but there were exceptions. Reflexology was performed by a trained reflexologist with assistance from a nurse (22). This variation suggests that the level of expertise of the practitioner, including their specific training and experience, could influence the effectiveness of the intervention. More research is required to establish whether professional certification in reflexology, combined with the appropriate amount of training and experience, is a critical factor in treatment success (23,24). Moreover, many studies did not specify the specific technique used, whether it was a general approach or targeted reflexology based on the patient's condition, which could also account for the differences in results across studies.

These inconsistencies highlight the need for a more standardized approach to reflexology intervention

protocols. A comprehensive synthesis of the optimal duration, frequency, and practitioner qualifications could provide clearer guidance for clinicians and researchers looking to implement reflexology in clinical practice. Furthermore, it is crucial to understand under which conditions reflexology proves to be most beneficial and to establish a protocol that includes appropriate controls for these variables to optimize treatment efficacy.

Effectiveness of Reflexology as a Nonpharmacological Intervention

Reflexology has been shown to be effective in reducing nausea and vomiting in patients with various conditions such as cancer, post-surgery, and hemodialysis. This intervention is usually carried out with an average duration of 20–30 minutes per session, which is carried out over several days to weeks. Its effectiveness is reflected in a significant decrease in nausea and vomiting scores after therapy, with a p -value < 0.05 (18). In addition, reflexology is also known to improve the quality of life of cancer patients by reducing symptoms such as fatigue, pain, and dyspnea, which also showed

significant results with a p-value < 0.05 (20). However, some studies suggest that reflexology's effects on anxiety and depression are less consistent than its benefits for other physical symptoms (19).

Combination with Other Therapies

The combination of reflexology with other therapies, such as yoga, acupuncture, and music therapy, shows better effectiveness than reflexology alone (19,25). This combination not only enhances the positive effects of reflexology but also provides additional benefits, especially in increasing relaxation and reducing physical symptoms more significantly (24,26). One example is acupuncture at the P6 point, which is known to be effective in complementing reflexology in reducing nausea and vomiting (27). The combination provides a holistic approach that supports more optimal symptom management for patients with a variety of clinical conditions (21).

Duration and Frequency of Reflexology

The optimal duration of reflexology to reduce nausea and vomiting is usually between 20–30 minutes per session, with a frequency of 2–3 times per week for 2–4 weeks. Implementation of reflexology involving a certified reflexologist ensures consistency of technique and more reliable results (19,20). Areas that reflexology often focuses on are the solar plexus and the soles of the feet, as these points are believed to have a direct connection to physical symptoms such as nausea and fatigue (22). One of the reflexology techniques that is often used is the Rwo Shur method, which has been proven to provide more consistent results in reducing nausea (20,28). This approach emphasizes the importance of applying correct techniques to ensure optimal results in reflexology therapy.

Practitioner and patient knowledge

Public knowledge about reflexology is still limited, although attitudes towards this therapy are generally positive. This suggests that there is potential for good acceptance if adequate education is provided about the benefits and applications of reflexology (29). On the other hand, health practitioners show high interest in integrative therapies, including reflexology, but they still need further training to improve their understanding and skills in applying these therapies (26). In the evaluation of the effectiveness of reflexology, instruments such as the "Keller Index of Nausea (KIN)" were used to measure nausea symptoms with a valid and reliable observation-based approach, especially for young patients (30). The use of this instrument helps ensure a more objective assessment in the management of nausea through reflexology (23).

Challenges in Implementation

The effectiveness of reflexology can vary between countries and cultures, depending on the level of acceptance of reflexology in society (18). Cultural

factors have a major influence on individual perceptions of alternative medicine, including reflexology (21). In addition, accessibility of therapy is also a major obstacle in some areas, especially in countries with limited resources (23,31). Limited reflexology training, both for health practitioners and certified reflexologists, has also slowed down the wider implementation of this therapy.(29). A holistic approach that takes culture and accessibility into account can help address these challenges.

DISCUSSION

Reflexology is a non-pharmacological therapy that is gaining more attention in the world of health. This therapy involves applying pressure to specific points on the soles of the feet, hands, or other parts of the body that are believed to have reflex connections with organs and body systems (19). The mechanism of reflexology is based on the theory that stimulation of these reflex points can improve energy flow, blood circulation, and overall body balance. Interest in reflexology has increased significantly, especially in its use to treat a variety of medical conditions, including nausea, vomiting, fatigue, pain, and other symptoms often experienced by patients with chronic illnesses or after certain medical procedures (22). Reflexology offers a non-invasive approach and is considered safe, making it a popular choice for patients seeking an alternative or complement to conventional medicine.

Reflexology has been shown to be effective in reducing nausea and vomiting in various patient groups, including cancer patients, post-surgery, and hemodialysis patients. Studies have shown that this therapy is able to provide significant results in reducing the intensity of nausea and vomiting compared to conventional treatment, with an optimal duration of 20–30 minutes per session 2–3 times per week for 2–4 weeks. These findings are in line with previous studies that also highlight the role of reflexology in improving patient comfort by stimulating the nervous system and balancing body functions, especially in cancer patients undergoing chemotherapy (11,32). However, compared to previous studies that focused more on the physical aspects, the current study adds new insights by emphasizing the importance of duration and frequency of therapy for optimal results. Overall, reflexology not only provides short-term benefits in reducing nausea but also contributes to a better quality of life (14).

Reflexology is not only effective in reducing specific symptoms such as nausea and vomiting, but also has a positive impact on the patient's overall quality of life. As a holistic approach, reflexology helps reduce often bothersome physical symptoms, such as fatigue, pain, and dyspnea, especially in patients with chronic conditions such as cancer or kidney disease (27). Studies show that patients who undergo reflexology report

increased comfort and ability to perform daily activities compared to those who only receive conventional care (11). When compared to other therapies such as yoga or acupressure, reflexology alone can provide significant benefits, although more optimal results are often seen with a combination of several therapies. This suggests that reflexology can contribute substantially to supporting the physical and emotional well-being of patients, both as a primary and supporting therapy (1,33).

The pressure points used in reflexology play a significant role in the effectiveness of the therapy. Two key areas of focus that are often targeted in reflexology are the solar plexus and the soles of the feet, which are believed to have reflex connections to major organs of the body. The solar plexus, for example, is thought to be an energy center closely linked to the autonomic nervous system, so stimulation of this area can help reduce stress, nausea, and fatigue (34). Meanwhile, the soles of the feet have many reflex points that represent various organs of the body, including the digestive tract, so pressure on these points is often used to treat symptoms such as nausea and vomiting in cancer patients or post-surgery (15,35). The effectiveness of reflexology in reducing nausea and vomiting (particularly with a duration of 20–30 minutes and frequency of 2–3 sessions per week), are consistent with randomized controlled trials in breast cancer patients reporting significant improvements in gastrointestinal symptoms and fatigue after structured reflexology interventions. This concordance may be explained by an adequate “dose” of intervention capable of modulating autonomic tone, through stimulation of reflex points associated with the solar plexus and digestive tract, thereby reducing vagal afferents that trigger the vomiting center (15). Conversely, studies reporting less consistent effects on psychological symptoms such as anxiety and depression may reflect differences in target outcomes (psychological vs. physical), small sample sizes, and variability in psychometric instruments. As a result, the sympathovagal modulation induced by reflexology appears to exert stronger effects on somatic symptoms (nausea, vomiting) than on affective outcomes (19). Clinical context may also influence the variability in response: for instance, in postoperative patients, strong emetogenic stimuli such as volatile anesthetics and opioids may mask or override the therapeutic effect of reflexology unless the intervention is administered repeatedly and with sufficient duration (20).

Reflexology operates on plantar and palmar reflex zones rather than specific meridians. While both modalities can alleviate nausea, reflexology appears to yield more consistent effects when protocols are standardized and interventions are delivered by certified practitioners (36). Studies reporting minimal benefits typically share two features: (i) session durations that were too short or single-session interventions insufficient to achieve cumulative neuromodulation, and/or (ii)

control conditions without credible sham procedures, which may inflate effect estimates by failing to account for nonspecific components such as relaxation or therapeutic attention (9,20). Thus, the positive findings in this review are best interpreted as a combination of specific effects (somato-visceral reflex stimulation, autonomic modulation) and nonspecific effects (relaxation, therapeutic alliance). Methodologically, this highlights the need for multicenter randomized trials with credible sham reflexology controls, standardized protocols for duration and frequency, adherence monitoring, and dose–response analyses to validate the proposed threshold of “20–30 minutes, 2–3 sessions per week” as the minimal effective standard (19).

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Culture has a significant influence on the acceptance of reflexology in different countries, as people's perceptions of reflexology are often influenced by traditional values and local beliefs. In Asian countries, such as Indonesia and China, reflexology tends to be more accepted because the practice aligns with long-standing traditional health approaches. In contrast, in some Western countries, the therapy may still be viewed as an alternative approach that requires more scientific evidence to be widely accepted. The main challenges in implementing reflexology in countries with limited access lie in the lack of resources, including a shortage of certified reflexologists and a lack of public education about the benefits of the therapy (15,40). Therefore, efforts are needed to improve professional training and educational campaigns that can increase

understanding and acceptance of reflexology as part of a complementary health system.

The findings from the reviewed studies suggest that reflexology could serve as an effective complementary therapy for managing symptoms such as nausea, vomiting, and fatigue, particularly in cancer patients undergoing chemotherapy, as well as in post-surgical recovery. Healthcare providers, especially those working in oncology, palliative care, and post-operative settings, can consider incorporating reflexology into standard care protocols as a non-pharmacological intervention to enhance symptom management and improve patients' quality of life. However, for the integration of reflexology to be truly effective, healthcare practitioners must receive adequate training in reflexology techniques to ensure the treatment is administered properly.

Training programs for practitioners should emphasize both theoretical knowledge and hands-on experience to ensure that they are capable of delivering reflexology sessions effectively. This includes understanding reflexology techniques, the proper duration and frequency of sessions, and recognizing patient-specific needs for customization of treatments. Certification in reflexology could be a requirement for healthcare settings to ensure consistent and high-quality care, while a multidisciplinary approach involving certified reflexologists, nurses, and other healthcare providers would facilitate collaborative patient care. Additionally, healthcare institutions may consider developing guidelines and protocols for reflexology interventions, aligning them with patient care plans to ensure seamless integration with other therapeutic modalities. These steps would empower healthcare providers to offer holistic, patient-centered care that incorporates reflexology to support physical and emotional well-being.

This review has several limitations. The included studies demonstrated heterogeneity in design, intervention duration, and frequency, which makes direct comparison challenging. Many studies had relatively small sample sizes, reducing generalizability. Methodological weaknesses were also noted, including limited blinding and lack of standardized reflexology protocols. These limitations suggest that findings should be interpreted with caution.

CONCLUSION

This systematic review analyzed 15 research articles that discussed the effectiveness of reflexology in reducing nausea, vomiting, and related symptoms, and improving quality of life in patients with various medical conditions, including cancer, post-surgery, and hemodialysis. Key themes identified included the effectiveness of reflexology as a single therapy, the combination of reflexology with other therapies such as yoga and acupressure, the optimal duration

and frequency of intervention, the pressure points and techniques used, and challenges in implementation influenced by culture and accessibility. The results showed that reflexology can significantly reduce nausea and vomiting, especially when performed for 20–30 minutes per session and a frequency of 2–3 times per week for 2–4 weeks. In addition, the combination of reflexology with other therapies provided more optimal results than reflexology alone. However, the acceptance of reflexology still varies across countries, depending on culture and access to reflexology.

In nursing practice, reflexology can be integrated as part of a holistic approach to managing patient symptoms, especially nausea and vomiting in patients with chronic conditions or post-surgery. Nurses can also play a role in educating patients and families about the benefits of reflexology and ensuring that it is carried out by trained practitioners. Further research is needed to explore more deeply the mechanisms of reflexology, especially in the context of combination with other therapies such as acupressure and yoga. In addition, studies with stronger designs, such as multicenter RCTs with larger samples, are needed to strengthen the scientific evidence regarding the effectiveness of reflexology.

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