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Review Article

Complementary Non-Pharmacological Interventions for Symptom Management in Adults Undergoing Hemodialysis: A Narrative Review

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ABSTRACT

Introduction. Adults undergoing maintenance hemodialysis may experience persistent symptoms, such as fatigue, sleep disturbances, itching, pain, anxiety, depressive symptoms, and decreased health-related quality of life. Non-pharmacological complementary interventions have been explored as supportive approaches to routine dialysis care. This study describe complementary non-pharmacological interventions for adults undergoing maintenance hemodialysis. **Research Methods.** Employed a narrative literature review approach based on eight study summaries obtained from coursework documents. Information was organized according to author, year, study design, sample, intervention, comparator, duration, and outcomes. The findings were analyzed descriptively and synthesized to identify the types of interventions and their reported effects on patients undergoing hemodialysis. Data were recorded by author, year, design, sample, intervention, comparator, duration, and outcomes. The PICOST framework was used as an additional structure to clarify the clinical question. **Result&Analysis.** The eight studies included aromatherapy massage or lavender application (n=2), music-based interventions (n=2), acupressure (n=2), and foot reflexology (n=2). Outcomes measured included fatigue, sleep quality, pruritus, cannulation pain, anxiety, depression, stress, blood pressure, patient satisfaction, and health-related quality of life. Study summaries generally reported improvements in at least one outcome measure. However, variations in design, measurement instruments, and follow-up duration limited comparisons between interventions. **Discussion.** Complementary interventions have the potential to support the care of hemodialysis patients focused on symptom management. However, the available evidence does not yet confirm the superiority of any particular interventio. Future research should use a systematic review approach to map variations in complementary interventions and identify existing evidence gaps.

Keywords: acupressure; aromatherapy; chronic kidney disease; complementary interventions; hemodialysis; music therapy; reflexology; symptom management.

INTRODUCTION

Hemodialysis is a vital, life-sustaining treatment for people with advanced kidney disease. However, the demands of repeated treatment sessions and the broader impact of chronic disease can impact a patient's daily well-being and functioning. Fatigue can limit normal activities, sleep problems can hinder recovery, and persistent itching or pain

can add to physical discomfort. Anxiety and depressive symptoms can also impact a person's emotional well-being and experience of long-term treatment. These concerns are not isolated; multiple symptoms can occur together and impact quality of life.

Routine medical management remains the core of safe hemodialysis care. At the same time, symptom management can benefit from supportive approaches that are acceptable to patients, practical in the dialysis environment, and used without replacing indicated medical treatment. Complementary non-pharmacological interventions have been studied for this purpose. In the source material reviewed here, such approaches include aromatherapy massage using lavender or Citrus aurantium, recorded or live music, acupressure, and foot reflexology. These interventions differ in how they are delivered and which symptoms they target, so their findings need to be mapped rather than treated as interchangeable.

The summaries provided illustrate a wide range of outcomes. Aromatherapy-related studies examined quality of life, fatigue, sleep, and pain associated with arteriovenous fistula cannulation. Music-based studies focused on psychological well-being, patient satisfaction, and health-related quality of life. Acupressure studies considered fatigue, anxiety, sleep, depressive symptoms, and blood pressure, while reflexology studies examined fatigue, sleep quality, and pruritus. This diversity of outcomes reflects the multidimensional nature of symptom burden among people undergoing hemodialysis.

However, the evidence base presented in coursework compilations is heterogeneous. These studies include randomized controlled trials, quasi-experimental studies, retrospective studies, and prospective intervention studies. Sample sizes, intervention schedules, comparison conditions, and outcome measures also vary. Therefore, simple pooled estimates or direct ranking of interventions cannot be justified based on the available information. This approach enables findings from various studies to be summarized and examined descriptively, taking into account differences in research designs, intervention procedures, and outcome assessments. Furthermore, a narrative review helps highlight the possible benefits, limitations, and research gaps within the existing literature. Accordingly, this review aims to provide an overview of the findings on complementary non-pharmacological interventions for managing symptoms in adults receiving hemodialysis and to explore their

relevance to nursing practice. (Pollock et al., 2024; Tricco et al., 2018).

The purpose of this review is to map the available evidence on complementary non-pharmacological interventions for symptom management and quality of life in adults on hemodialysis. Specifically, the review describes the interventions and study designs represented in the sources, summarizes the reported results, considers implications for nursing practice, and identifies methodological and reporting gaps. This review does not aim to establish definitive comparative effectiveness.

METHOD AND ANALYSIS

This manuscript was structured as a This study employed a narrative review approach to explore and examine complementary non-pharmacological interventions used to manage symptoms in adults receiving hemodialysis. The review included eight study summaries collected from the assigned coursework materials. The interventions discussed were classified into four categories: aromatherapy, music therapy, acupressure, and foot reflexology.

Data were arranged based on several study characteristics, such as authors, publication years, research designs, sample sizes, types of interventions, comparison groups, intervention periods, and reported findings. The collected information was then analyzed descriptively to identify common findings, differences, and the potential benefits of each intervention.

Since this review relied on available study summaries without conducting an extensive database search or examining the complete original articles, the findings are presented as a narrative overview of the available evidence. (Pollock et al., 2024; Tricco et al., 2018).

This scoping review used the Population–Intervention–Comparison–Outcome–Study Design–Time (PICOST) framework to formulate the research question and guide the identification and mapping of relevant evidence. The population (P) consisted of adults undergoing maintenance hemodialysis. The intervention (I) included complementary non-pharmacological approaches, such as aromatherapy massage or lavender application, music-based interventions, acupressure, and foot reflexology. The comparison (C) included usual care, control groups, sham interventions, placebo conditions, or alternative intervention approaches, depending on the individual study. The outcomes (O) focused on symptom management and patient well-being,

including fatigue, sleep quality, pruritus, pain associated with arteriovenous fistula cannulation, anxiety, depressive symptoms, stress, blood pressure, patient satisfaction, and health-related quality of life. The study design (S) included randomized controlled trials, quasi-experimental studies, retrospective studies, and prospective intervention studies. The time (T) component covered the intervention duration and follow-up periods reported in each study.

The PICOST framework was applied to organize the research question and extract relevant information from the eight study summaries provided in the coursework document. Data were mapped according to authors, publication year, study design, sample characteristics, intervention, comparison, duration, and reported outcomes. However, because complete original articles, reproducible database searches, and screening records were not available, the findings should be interpreted as a preliminary evidence map rather than a comprehensive narative review.

RESULT

Overview of mapped evidence

Eight studies are represented in the assigned coursework document. These studies cover four main intervention categories: aromatherapy or lavender-based approaches, music-based interventions, acupressure, and foot reflexology. Each category is represented by two studies. The studies were published between 2021 and 2025, according to the references provided, and their designs ranged from randomized controlled trials to observational or quasi-experimental approaches.

The outcome profile was quite broad. Fatigue was assessed in several studies, while sleep quality, anxiety, depressive symptoms, pruritus, pain, blood pressure, satisfaction, and health-related quality of life were each examined in selected studies. This breadth of coverage supports the mapping approach, but also limits direct comparisons because outcomes were not measured consistently across studies.

Table 1. Result of Narrative Review

Study	**Designs and samples are reported in the sources.**	**Intervention and comparison**	**Duration / settings**	**Results are reported concisely**
Mohammadpourhodki et al. (2021)	Parallel randomized clinical trial; n=105 (as reported in	Lavender aromatherapy massage and Citrus aurantium	Massage is applied to the feet after hemodialysis is	Quality of life, fatigue, and sleep quality; both oils were

	previous source draft/summary).	aromatherapy massage, with a comparison group.	started; the exact schedule should be checked by referring to the original article.	reported to be beneficial, with no significant differences between the two oils in the summary.
Ba et al. (2024)	Retrospective study; n=218 (122 control group, 96 music group).	Individual music therapy using an MP3 player and headphones was compared with routine care without music intervention.	Three months.	Depression, anxiety, stress, and patient satisfaction; music groups have been reported to improve these outcomes.
Nasirizade et al. (2025)	Randomized controlled trial; 105 participants were recruited and 100 completed	Acupressure versus fake acupressure.	This summary reports effects that persisted up to one month after the	Anxiety, fatigue, and systolic/diastolic blood pressure; improvements were reporte

	the study, according to the source summary.		intervention; the exact intervention schedule requires full-text confirmation.	d in the intervention group.
Serrano Soliva et al. (2022)	Prospective intervention study; n=90.	Live classical music during hemodialysis.	Four weeks; performances for approximately 30–40 minutes during two of the three weekly dialysis sessions, as summarized in the source.	Health-related quality of life was measured using the KDQOL-SF; improvements were reported on 18 of 21 scales.
Rajabi et al. (2025)	Quasi-experimental study; n=50 in previous draft/source summ	Foot reflexology massage compared with control condit	The summary notes an estimated time of 16 minutes per	Fatigue and sleep quality; decreased fatigue and sleep disturb

	ary; verification in original report.	ions.	session; the number and frequency of sessions require confirmation.	ances were reported.
Suandika et al. (2023)	Single-blind randomized controlled trial; n=96 completed, according to source summary.	Acupressure versus control condition.	Four weeks.	Fatigue, sleep quality, anxiety, and depressive symptoms; the summary reported improvements in certain symptoms and no side effects during the study.
Shahriari et al. (2021)	Quasi-experimental study; n=90 (45 intervention, 45 control).	Foot reflexology versus control.	Three weeks.	Itching; the summary report shows a decrease in the intervention group's score from 25.4 to 1.47, while the control group's score increased. The original outcome scale and data need to be verified.
Tüzün Ozdemir & Akyol (2023)	Randomized clinical trial; n=90, according to previous source draft/summary.	Lavender essential oil was administered via inhalation and topical application, under placebo/control conditions.	Applied in conjunction with arteriovenous fistula cannulation; the exact sequence and treatment schedule should be checked in the original report.	Pain during fistula cannulation; both approaches using lavender were reported to reduce pain, with inhalation described as slightly more effective in the summary.

Intervention categories and reported outcomes

Aromatherapy and lavender-based approaches

Two studies explored approaches related to aromatherapy. Mohammadpourhodki et al. (2021) examined massage with lavender and Citrus aurantium essential oils, with the summary reporting improvements in fatigue, sleep, and quality of life, and no significant differences between the two oils. Tüzün Özdemir and Akyol (2023) focused on pain associated with arteriovenous fistula cannulation and compared inhaled and topical lavender approaches. The summary reported pain reduction with both methods. These findings suggest that aromatherapy has been investigated for both broader symptom burden and specific procedural symptoms. However, the available summaries did not allow for a detailed evaluation of allocation procedures, blinding, adverse event monitoring, or the precision of effect estimates.

Music-based interventions

The two music studies differed in their delivery methods. Ba et al. (2024) evaluated individually recorded music over three months in a retrospective study, while Serrano Soliva et al. (2022) examined live classical music during dialysis sessions. Reported outcomes included psychological well-being, satisfaction, and health-related quality of life. The use of patient-selected music in one study and live performance in the other highlights that music interventions are not a single standard treatment. The summary is encouraging, but the retrospective design and differences in delivery and outcome measurement limit causal interpretation and comparisons between studies.

Acupressure

Acupressure was investigated in two studies with overlapping but not identical results. Nasirizade et al. (2025) focused on anxiety, fatigue, and blood pressure, using sham acupressure as a comparator. Suandika et al. (2023) examined fatigue along with sleep and psychological outcomes in a single-blind randomized trial. Both summaries describe improvements in selected outcomes. However, the documents provided do not provide sufficient detail to compare the magnitude of effects, determine which acupressure protocol was most appropriate, or confirm whether the effects persisted beyond the reported follow-up period.

Foot reflexology

Foot reflexology was studied for fatigue and sleep quality by Rajabi et al. (2025), and for pruritus by Shahriari et al. (2021). These study summaries reported

improvements in the targeted symptoms. These studies describe the use of a single broad category of interventions to address a variety of patient concerns. The intervention schedule, appropriate outcome measurement instruments, and complete statistical results should be verified in the original publication before the findings can be used to guide clinical protocols.

Table 2. The evidence map of symptom management Hemodyalisis patients

Result domain	**The study that is in the summary given**	**What can be concluded from this draft?**
Fatigue	Mohammadpour hodki et al.; Nasirizade et al.; Rajabi et al.; Suandika et al.	Fatigue is one of the most frequently studied outcomes, with improvements reported across a wide range of interventions. The lack of consistent measurements and complete numerical results prevents direct comparisons.
Sleep quality / sleep disorders	Mohammadpour hodki et al.; Rajabi et al.; Suandika et al.	Several summaries reported improved sleep outcomes.
		Instrumentality, clinical significance of changes, and sustainability of benefits require full-text review.
Psychological well-being	Ba et al.; Nasirizade et al.; Suandika et al.	Music and acupressure have been studied in relation to anxiety, depression, or stress. The retrospective design of these music studies should be taken into account when interpreting causal relationships.
Painful	Tüzün Özdemir & Akyol; Serrano Soliva et al. (pain-related quality of life domain)	Lavender was studied for its association with pain from cannulation and live music for changes in the pain domain of quality of life. These are distinct constructs and should not be considered equivalent.
Itchy	Shahriari et al.	One summary reported a significant

		reduction in pruritus scores after reflexology. The scale and original data require verification.
Quality of life / satisfaction	Mohammadpourhodki et al.; Ba et al.; Serrano Soliva et al.	Several studies reported improvements in domains of quality of life or satisfaction, but the study sizes and designs varied.
Blood pressure	Nasirizade et al.	Blood pressure is a study-specific outcome in one acupressure trial in this evidence map; replication and clinical interpretation require full-text review.

Overall, the summary supports the mapping of interventions and outcomes, but is insufficient for a reliable, item-by-item assessment of the Joint Benefit Index (JBI). The original article should be retrieved and independently assessed by at least two reviewers if critical assessment is to be retained in the final submission.

DISCUSSION

This narrative review examines eight studies on complementary non-pharmacological approaches used to manage symptoms and support quality of life in adults receiving hemodialysis. The interventions explored were aromatherapy, lavender-based treatments, music therapy, acupressure, and foot reflexology. The studies reported favorable changes in several outcomes, such as fatigue, sleep quality, psychological health, pruritus, pain during cannulation, blood pressure, patient satisfaction, and health-related quality of life. However, these results need to be interpreted with caution, as the studies varied considerably in their research designs, intervention procedures, outcome assessments, and follow-up durations. Consequently, the findings suggest that complementary therapies may provide supportive benefits, but they do not establish that one intervention is more effective than the others.

The results are consistent with the review by Yeşil Bayülgen and Gün (2022), which analyzed 14 randomized controlled trials examining complementary and integrative therapies for fatigue in hemodialysis patients. Their findings indicated that interventions such as acupressure, aromatherapy, reflexology, massage, and yoga may help

alleviate symptoms. In a similar manner, fatigue emerged as a frequently investigated outcome in the present review, particularly in studies involving aromatherapy massage, acupressure, and foot reflexology. Nevertheless, the scope of the current review is broader, as it also considers psychological concerns, pruritus, cannulation-related pain, and quality of life. This wider range of outcomes reflects the complex and multidimensional symptom burden experienced by individuals undergoing hemodialysis.

A comparable pattern was identified in the literature review by Utami (2022), which included 17 studies on complementary interventions for fatigue in hemodialysis patients. The review discussed approaches such as massage, aromatherapy, relaxation techniques, music therapy, and footbath, suggesting that these methods may contribute to fatigue reduction. In the present review, music-based interventions were associated with better psychological well-being, patient satisfaction, and health-related quality of life. Meanwhile, acupressure and reflexology were investigated in relation to fatigue, sleep quality, and other symptoms. Taken together, these findings indicate that complementary therapies may contribute to addressing several dimensions of patients' experiences. However, differences in study characteristics and outcome measurement methods make it difficult to compare the size of the reported effects between reviews.

Despite the generally favorable findings, the effects reported across the intervention categories and outcome measures were not consistent. Aromatherapy and lavender-based approaches were investigated in relation to both general symptom management and pain experienced during arteriovenous fistula cannulation. Music interventions also differed in their delivery, ranging from recorded music selected by patients to live classical music provided during dialysis sessions. Similarly, acupressure studies used different treatment points, frequencies, and durations. Foot reflexology was applied to various symptoms, including fatigue, sleep disturbances, and pruritus. These variations suggest that complementary interventions should not be regarded as equivalent approaches. Their potential usefulness may be influenced by the symptoms experienced by patients, individual preferences, the specific treatment protocol, and the clinical setting.

In nursing and palliative care, these interventions may serve as supportive components of individualized

patient care, as long as they are used alongside rather than in place of standard medical treatment. Before introducing a complementary intervention, nurses should evaluate the patient's symptoms, preferences, comfort, and possible contraindications. For instance, aromatherapy requires careful consideration of allergies or sensitivity to essential oils. Massage, acupressure, and reflexology should be performed with attention to skin condition and precautions related to vascular access. Music-based approaches should take into account patients' preferences, hearing requirements, and the surrounding clinical environment. Accordingly, intervention selection should involve patients in decision-making and include continuous monitoring of their responses.

Several limitations should be acknowledged when considering the findings of this review. The evidence was derived from a coursework document containing summaries of eight studies, rather than from a documented comprehensive database search with independent verification of the original full-text publications. Furthermore, the included studies differed in research design, sample size, intervention length, outcome measurement tools, and the reporting of effect estimates. These methodological differences limit the ability to establish comparative effectiveness or provide definitive recommendations for a particular intervention. Future studies should adopt clearly specified intervention protocols, validated outcome measures, sufficient follow-up periods, and transparent reporting of effect sizes, confidence intervals, adherence, and adverse events. Future narrative reviews would also benefit from a broader and reproducible search strategy to improve the completeness and reliability of the evidence synthesis.

CONCLUSION

Eight studies summarized in the provided coursework document describe the use of aromatherapy, music-based interventions, acupressure, and foot reflexology to address symptoms and quality of life issues in adults undergoing hemodialysis. Reported outcomes included fatigue, sleep quality, anxiety, depressive symptoms, stress, pruritus, cannulation pain, blood pressure, patient satisfaction, and health-related quality of life. These diverse approaches and outcomes support further investigation of complementary interventions as potential additions to individualized dialysis care.

These findings are preliminary and should not be interpreted as evidence of comparative effectiveness. The evidence

base is limited by its reliance on secondary summaries, incomplete bibliographic and methodological details, and the absence of a documented database search and full-text critical appraisal. Before submission to a journal, reviews should be completed using a reproducible search and screening process, original articles should be verified, and reporting should align with the JBI and PRISMA-ScR scoping review guidelines.

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