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Guided Imagery for Symptom Management of Patients with Life-Limiting Illnesses: A Systematic Review of Randomized Controlled Trials

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Abstract

Background: Patients with life-limiting illnesses receiving palliative care have a high symptom burden that can be challenging to manage. Guided imagery (GI), a complementary and integrative therapy in which patients are induced to picture mental images with sensory components, has proven in quasi-experimental studies to be effective as a complementary therapy for symptom management.
Objective: To systematically review randomized controlled trials that report evidence of guided imagery for symptom management in patients with life-limiting illnesses.
Methods: The Preferred Reporting Items for Systematic Reviews and Meta-Analyses guideline was followed for this review and the search strategy was applied in Medline, CINHAL, and Web of Science. The quality of articles was evaluated using the Cochrane Collaboration's Risk-of-Bias Tool 2 (RoB 2). The results are presented using the Guidance on the Conduct of Narrative Synthesis in Systematic Reviews.
Results: A total of 8822 studies were initially identified through the search strategy, but after applying exclusion criteria, 14 randomized controlled trials were included in this review. The quality assessment revealed that four studies had a high risk of bias, nine had some concerns, and one had a low risk of bias. Out of the 14 studies, 6 evaluated oncological diagnosis, while the remaining 8 focused on nononcological diagnoses across 6 different diseases. GI was found to be effective in managing symptoms in 10 out of the 14 studies. Regardless of the disease stage, patients who received guided imagery experienced relief from anxiety, depression, pain, sleep disturbances, and fatigue.
Conclusion: GI therapy has shown promising results regarding symptom management in palliative care patients with life-limiting illnesses at different stages.

Keywords: anxiety; complementary therapies; depression; guided imagery; integrative therapies; palliative care; symptom management

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Introduction

PATIENTS WITH LIFE-LIMITING ILLNESSES, including cancer, end-stage renal disease, advanced heart failure, and chronic obstructive pulmonary disease, experience a significant burden of symptoms that often lead to emotional distress and can cause the desire to die or hasten death.[1–4] To manage these symptoms effectively, clinical practice guidelines recommend early interdisciplinary palliative care that combines pharmacological and nonpharmacological treatments.[5,6] Complementary and integrative therapies are becoming increasingly popular due to their potential benefits and safety profile.[7,8] One such therapy is guided imagery, which is a patient-centered, low-cost, and easy-to-implement treatment option that can enhance the effectiveness of clinical treatments.[9] Numerous observational studies have found that guided imagery can help reduce fatigue,[10] alleviate sleep disturbance,[10] improve mood,[11] alleviate oncologic and nononcologic pain,[12] minimize anticipatory and chemotherapy-induced nausea and vomiting,[13] boost the immune system,[14] and improve patient's quality of life.[15]

Guided imagery (GI) is a dynamic process in which an individual is led to imagine, while being guided through an internal experience with or without the help of external stimuli. The idea of this therapy is to generate mental images, which are ''thoughts with sensory qualities such as hear, taste, smell, touch, or feel,'' of objects or events that engage mechanisms used in cognition, memory, and emotional and motor control.[16,17]

The activation of neural structures affected by perception, such as the visual cortex, autonomic nervous system, and the amygdala, can in turn affect events in the body itself.[16] This complementary therapy in palliative care has been described as a psychophysiological treatment that can have profound comfort consequences on the physical, sociocultural, psychospiritual, and environmental realms of patients with life-limiting illnesses.[18] There is a paucity of data about its effectiveness. For instance, Ruano et al. conducted a systematic review of complementary and integrative therapies for cancer pain and only reported a randomized controlled trial that used GI as an intervention.[8]

Furthermore, two systematic reviews assessed interventions at the end of life to treat patients' psychological distress in palliative care. Lee et al. scanned 4172 studies up to June 2021 and did not find any randomized controlled trial of nonpharmacological or pharmacological interventions suitable to treat patients with clinically significant depressive symptoms, with extremely short prognoses.[19] Nowels et al. retrieved 38 randomized controlled trials for managing depression, anxiety, and general psychological distress in adults with life-limiting illnesses and their caregivers; none of the trials employed GI. The analysis revealed no significant improvement in patient or caregiver anxiety, depression, or psychological distress.[20] These reviews with their disappointing results have focused mainly on end of life, while other reviews reporting specifically to guided imagery are limited to a certain symptom or disease.[13,43,44]

A comprehensive review specific to guided imagery, assessing physical and psychological symptoms, and oncological or nononcological diseases has not been done. This knowledge gap drove us to conduct a systematic review of randomized controlled trials evaluating the effectiveness and safety of GI interventions in managing physical and psychological symptoms in patients with life-limiting illnesses, at various stages where interdisciplinary palliative care is beneficial.

Methodology

This systematic review of randomized controlled trials follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guideline (PRISMA)[21] (Fig. 1). The systematic review protocol was registered in the International Prospective Register of Systematic Reviews (CRD42023402060).

Data sources and search strategy

The Medical Subject Headings (MeSH) related to GI and symptom management were used to search three databases (Medline, CINHAL, and Web of Science) using the following search strategy: *(Imagery OR Guided Imagery) AND (palliative care OR palliative medicine OR symptom management OR palliative therapy OR Supportive Care OR Cancer Pain OR Pain OR chronic pain OR anxiety OR depression OR nausea OR dyspnea OR perioperative OR postoperative)*. The search results were deduplicated using Endnote and uploaded to Rayyan where two reviewers (J.E.C.-M. and N.M.-M.) independently screened titles and abstracts. There was substantial inter-rater agreement (kappa = 0.7). A third author (X.R.-C.) checked the process and resolved disagreements. The full texts were subsequently reviewed by six authors, who discuss and vote in case of conflict. In addition, references were scanned from selected articles and included if they were deemed relevant.

Eligibility criteria

Eligible studies had to (1) be original randomized control trials published in a peer-reviewed journal before February 5, 2023; (2) include human patients older than 18 years; (3) be published in English or Spanish; (4) use GI (visual, motor or auditory) as a sole intervention; (5) use a validated scale or instrument to assess symptoms; and (6) report on the treatment outcome of physical or psychological symptoms of patients with a chronic life-limiting illness or their treatment. In the absence of a standardized definition or protocol for GI application, we included studies that reported the use of GI as a single intervention, even if other complementary therapies such as muscle relaxation, deep breathing, or music therapy were also employed within the same intervention. Conversely, we excluded studies where GI was explicitly described as being used in conjunction with other interventions. Studies on survivor patients, assessing vital signs, immunologic variables, rehabilitation potential as a primary outcome, or having a qualitative design were excluded from the review.

Data extraction

Three reviewers (J.E.C.-M., M.X.L., and L.J.B.-M.) extracted data into a Microsoft Excel spreadsheet. Data extracted included publication details, patient population, study design, description of the intervention, outcome measures, and results. To ensure consistency, extracted data were compared and discussed between reviewers.

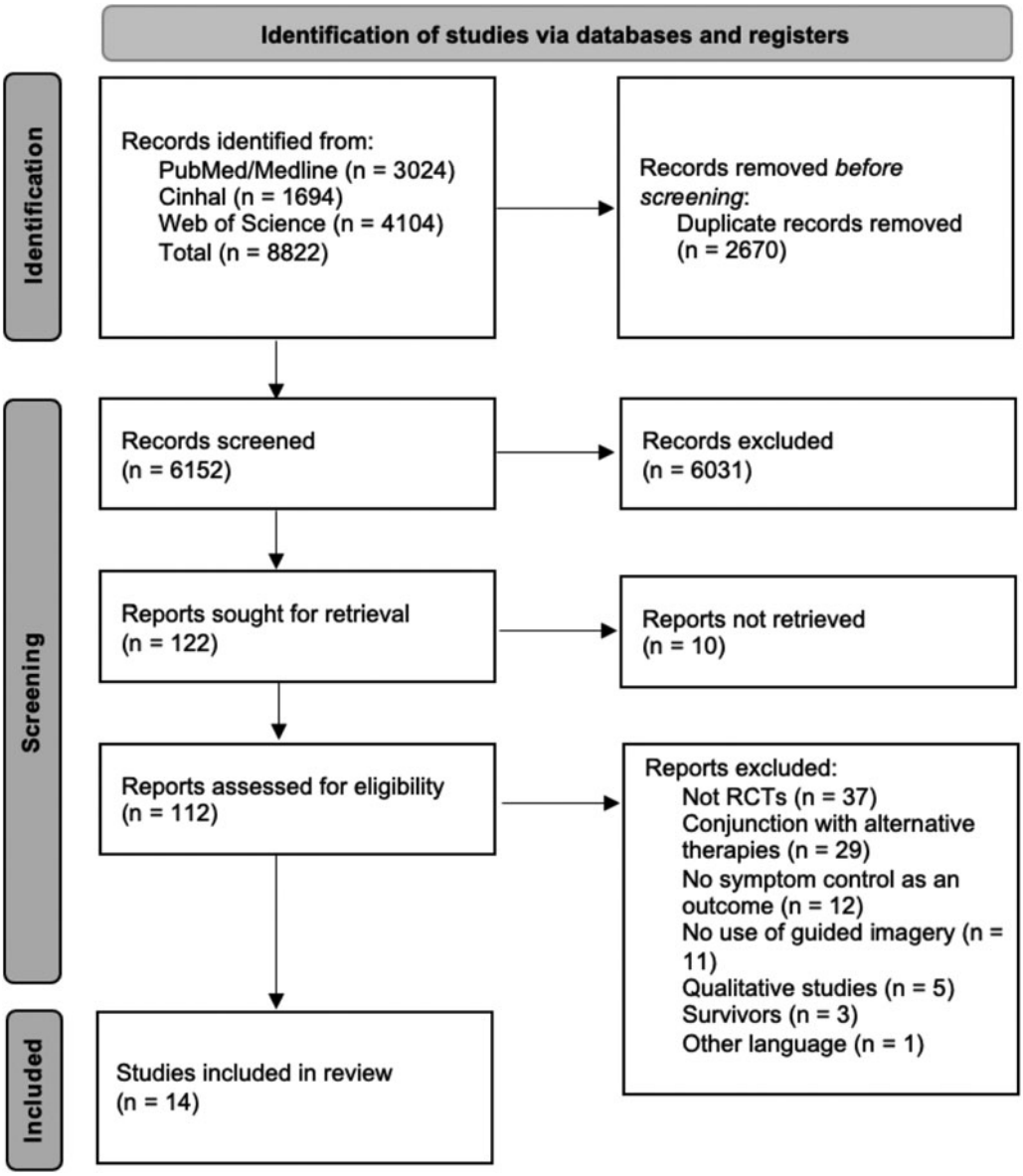

FIG. 1. PRISMA flow chart. PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses guideline; RCT, randomized controlled trial.

Quality appraisal

Five reviewers (S.G.-M., N.M.-M., L.J.B.-M., B.F.-V., and X.R.-C.) independently assessed each randomized controlled trial using the Cochrane Collaboration's Risk-of-Bias Tool 2 (RoB 2).[22] Senior reviewers (N.S.-B. and O.F.G.) arbitrated doubts and differences. No study was disregarded for its quality.

Data synthesis and analysis

The synthesis of results was performed using the Guidance on the Conduct of Narrative Synthesis in Systematic Reviews,[23] given the heterogeneity of studies evaluating diverse symptoms in multiple conditions with different measures. The outcomes regarding GI symptom management were reported according to the original articles using means (or difference in means), standard deviations, confidence intervals (CIs), and *p*-values. To enhance comprehension of findings, the symptom management data of life-limiting illnesses are presented in two distinct subgroups: Oncological and nononcological diseases. All authors were involved in analyzing and interpreting the results and vouch for their completeness and accuracy.

Results

Search strategy

A total of 8882 studies were identified. After excluding duplicates and records of ineligible types and/or irrelevant articles, the remaining 112 reports were screened as full texts. Of these studies, 98 were excluded. Thus, 14 articles were included, Figure 1 depicts the complete screening process.

Study and subject characteristics

A total of 14 studies published between 1995 and 2019 were analyzed, from 7 different countries: Iran ($n = 5$),

United States ($n=4$), United Kingdom ($n=1$), Australia ($n=1$), Germany ($n=1$), Taiwan ($n=1$), and Hong Kong ($n=1$). Six randomized trials assessed GI for patients with oncological diagnoses, while eight trials evaluated its effectiveness for patients with chronic, degenerative nononcological conditions. GI was tested in five life-limiting illnesses, including human immunodeficiency virus, end-stage renal disease, rheumatoid arthritis, multiple sclerosis, and chronic obstructive pulmonary disease.

The median number of patients per study was 71.3 (range: 12–183). More than 23 symptoms were evaluated across the studies; the most common ones were pain, depression, anxiety, fatigue, and insomnia. The mean follow-up and goal assessment time was 3.8 weeks (range: 1 day to 10 weeks). Most trials applied inclusion and/or exclusion criteria based on cognitive ability, hearing or sight problems, and cognitive impairments. No side effect related to GI was reported in any of the trials, but some studies lacked information on patient continuity and had unclear reasons for dropouts. A brief description on how guided imagery was implemented in each study can be consulted in Supplementary Table S1.

Quality appraisal

The methodological quality of included studies is summarized in Figures 2 and 3. Trials focusing on nononcological life-limiting illnesses exhibited several quality deficiencies, particularly in terms of deviations from the intended intervention and selection of reported results. As a result, six trials were judged to be of some concern, and two trials were determined to have a high risk of bias. Trials on cancer were deemed to have deficiencies in terms of deviations from the intended intervention and in measurement of the outcome. Two were judged to have a high risk of bias, three some concern, and one a low risk of bias.

The numerous studies deemed with concerns regarding deviations from the intended GI intervention, in the oncological and nononcological population, are noteworthy. These concerns arose from several factors, including protocols lacking sufficient detail, additional unreported complementary interventions integrated within the GI protocol, unclear participant adherence to the intervention, missing information about follow-up lengths, and an absence of documented reasons for participant dropouts. Some of these difficulties may be explained by the home-based scenario where the intervention took place, and hindered the researchers oversight.

Symptom management for nononcological diseases

This section will first present the results of single-trial studies examining the use of guided imagery for managing symptoms of life-limiting illnesses, followed by a summary of multiple-trial studies on the same disease. The characteristics and outcomes of the studies are summarized in Table 1. Lucille Sanzero Eller evaluated the efficacy of GI for managing depression and fatigue in 69 patients with asymptomatic seropositive, AIDS-like syndrome, and AIDS.

Participants were randomized to receive GI, progressive muscle relaxation, or usual care. The GI intervention was delivered through an induction audiotape, which focused on

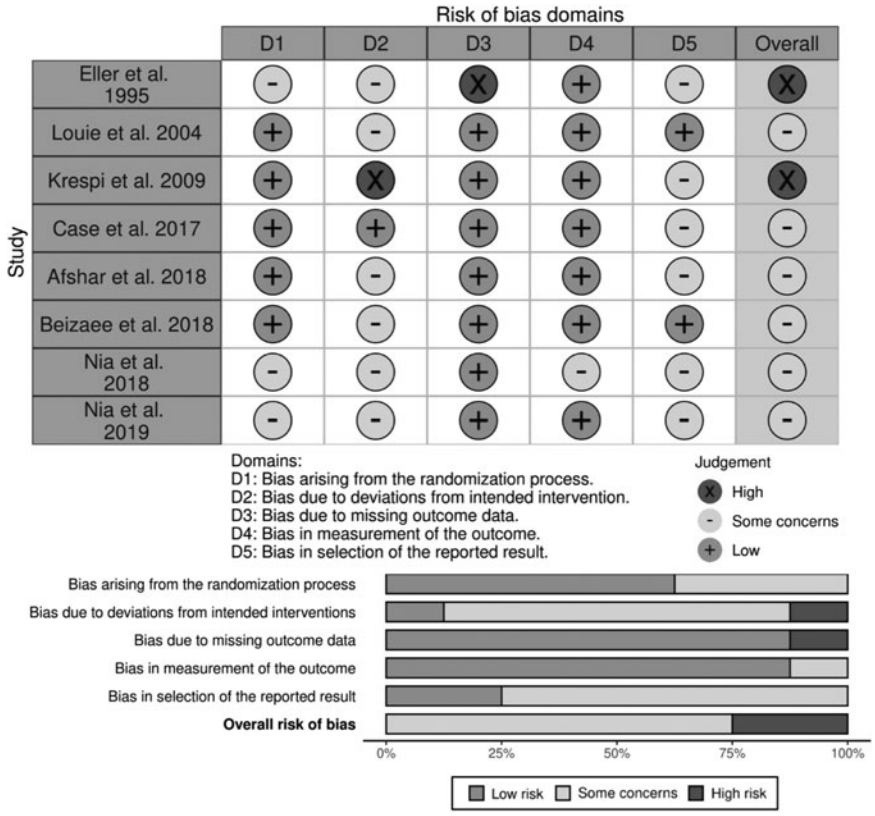

FIG. 2. Quality assessment of nononcologic patient studies.

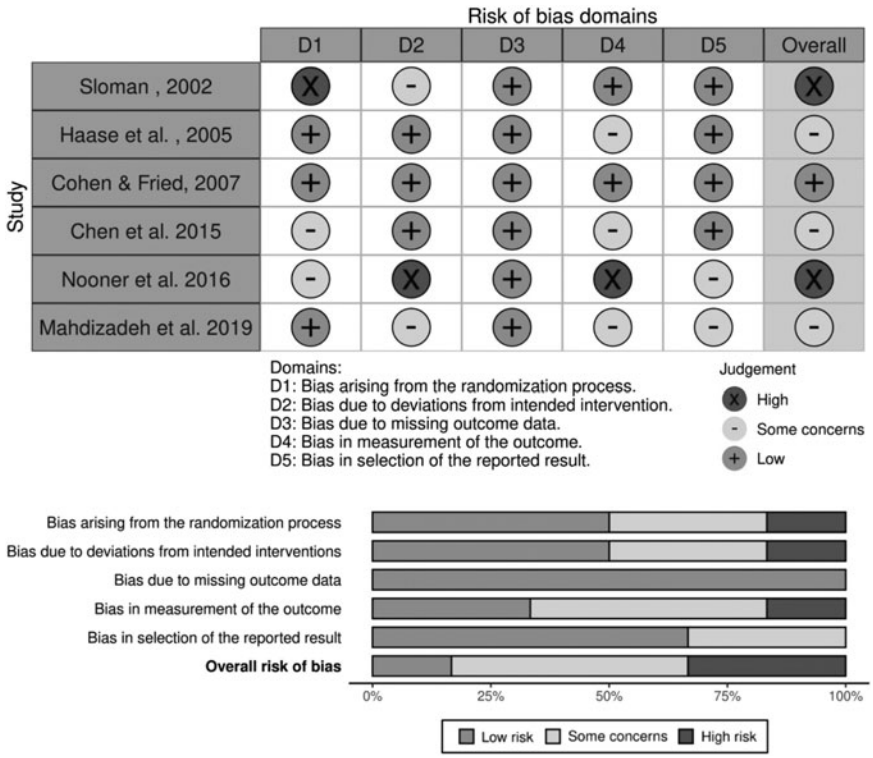

FIG. 3. Quality assessment of oncology patient studies.

internal attention and desired changes. After a six-month period, the GI group exhibited a statistically significant decrease in depression among 68% of the patients, as well as a reduction of 5.2 points in the fatigue score.[24] Another trial involving 26 patients with chronic obstructive pulmonary disease, who experienced daily dyspnea randomized participants to usual care or to six sessions of GI. The GI intervention consisted of a headset audiotape with instructions on how to construct a pleasant mental picture aimed at reducing dyspnea anxiety.

Although results showed there was a statistically significant ($p<0.05$) increase in the percentage of oxygen saturation in the treatment group, there was no significant difference in the rate of perceived dyspnea or anxiety between the two groups ($p=0.626$).[25] In addition, a trial randomized 23 patients with multiple sclerosis to assess GI versus journaling to manage depression and fatigue. The intervention group underwent 10 sessions of a specially designed guided imagery modality for multiple sclerosis patients, administered by a qualified practitioner. After a 10-week follow-up, the guided imagery intervention led to a significant 75% decrease in depressed mood scores compared to a 15% decrease with journaling ($p=0.04$) and a 24% decrease in fatigue scores compared to a 6% increase with journaling ($p=0.004$).[26]

Nia et al. conducted two randomized trials on 75 patients with rheumatoid arthritis.[27,28] One trial focused on the effect of guided imagery on pain reduction, while the other examined its effect on improving insomnia symptoms. GI was performed daily in a quiet room, where patients imagined natural landscapes with their eyes closed, using sensory perception.

Two comparison groups were used in both trials, a no-treatment group and a group that underwent eye movement desensitization and reprocessing (EMDR). Regarding pain level, the EMDR group rated significantly more pain reduction than the GI group and the control group ($p=0.001$), and the GI group rated significantly more pain reduction than the control group ($p=0.001$).[27] Regarding insomnia, the EMDR group (preintervention and post-intervention mean scores of 23.5 ± 5.2 and 11 ± 2.1) and the GI (preintervention and post-intervention mean scores of 24 ± 3 and 15.3 ± 2.3) obtained a significant improvement compared to the control group (preintervention and post-intervention mean scores of 24.2 ± 3.3 and 23.6 ± 3), but not between them.[28]

Finally, three trials assessed GI for the management of anxiety, depression, and insomnia in patients with end-stage renal disease undergoing hemodialysis.[29–31] In the first trial conducted by Krespi et al. in 2009, 153 patients were randomly assigned to an intervention group receiving specific guided imagery, an active control group consisting of general guided imagery plus progressive muscle relaxation, or usual care. The two groups under guided imagery received an audiotape with instructions.

No difference was ultimately found between groups in the anxiety and depression scores.[29] The second trial conducted by Afshar et al. recruited 70 patients who were randomized into a control or guided imagery group (in which patients had to listen to an instructional CD twice daily). The primary outcome was the state of anxiety and sleep quality four weeks after the intervention. The study found significant differences between the intervention and control groups in post-test mean scores of state anxiety (–9.11; 95% CI = –10.26 to –7.96; $p<0.001$), trait anxiety (adjusted mean difference: –8.94;

Table 1. Characteristics of the Studies of Guided Imagery in Noncancer Patients

Authors	*No. of participants*	*Disease*	*Symptom(s)*	*Scales to assess symptom improvement*	*Study results*	*Outcome*
Eller[24]	69	Human immunodeficiency virus	Depression Fatigue	Center for epidemiologic Studies Depression Scale, Sleep and Rest subscale of the Sickness Impact Profile	Guided imagery had a significant decrease of depression in 68% and fatigue score of −5.2 points.	
Louie[25]	26	Chronic obstructive pulmonary disease	Dyspnea Anxiety	Modified Borg Scale	No significant difference in the rate of perceived dyspnea ($p=0.626$) or anxiety between groups.	
Krespi et al.[29]	153	Chronic renal failure in hemodialysis	Depression Anxiety	Hospital Anxiety and Depression Scale	Guided Imagery had no effect on depression and anxiety.	
Case et al.[26]	23	Multiple sclerosis	Depression Fatigue	Beck Depression Inventory–II and the Fatigue Severity Scale	Guided imagery led to a 75% decrease in depressed mood scores vs. a 15% decrease with journaling ($p=0.04$), and a 24% decrease in fatigue scores vs a 6% increase with journaling ($p=0.004$).	
Afshar et al.[30]	70	Chronic renal failure in hemodialysis	Insomnia Anxiety	Spielberger's State-Trait Anxiety Inventory and Pittsburgh Sleep Quality Index.	Guided Imagery improved post-test mean scores of state anxiety (adjusted mean difference: −9.11; 95%; $p<0.001$), trait anxiety (adjusted mean difference: −8.94; $p<0.001$), and sleep quality (adjusted mean difference: −0.877; $p<0.007$).	
Beizaee et al.[31]	80	Chronic renal failure in hemodialysis	Depression Anxiety	Hospital Anxiety and Depression Scale	The level of anxiety ($p=0.030$) and depression ($p=0.001$) was significantly lower in the guided imaginary group compared with the control group.	
Nia et al.[27]	75	Rheumatoid arthritis	Pain	Rheumatoid Arthritis Pain Scale	EMDR group had a greater pain reduction than guided imagery group and the control group ($p=0.001$). Guided imagery group had a greater pain reduction than the control group ($p=0.001$).	
Nia et al.[28]	75	Rheumatoid arthritis	Insomnia	Persian version of the Insomnia Severity Index	EMDR post-intervention decreased insomnia score in 12.5 points, whereas the guided imagery group decreased 8.7 points, and the control group decreased 0.6 points.	

Light gray circles represent studies with positive outcomes. Dark gray circles represent studies with negative outcomes.
EMDR, eye movement desensitization and reprocessing.

95% CI = −10.31 to −7.57; $p < 0.001$), and sleep quality (−0.877; 95% CI = −1.51 to −0.24; $p < 0.007$).[30] The last trial performed by Beizaee et al. in 2018 randomized 80 patients to guided imagery or a usual care group.

Patients received guided imagery 30 minutes before hemodialysis, assisted by a psychologist, for four weeks, three times a week. They listened to nature sounds, imagined beautiful scenery, and wore headphones to avoid distractions. The intervention led to a significantly lower level of anxiety and depression in the intervention group compared with the control group ($p = 0.030$ and $p = 0.001$, respectively).[31] The differences between the results of the second/third trials and the first trial could be attributed to the active control group that received guided imagery in the latter trial. Overall, six out of the eight randomized controlled trials reported a statistically significant improvement in depression, anxiety, and sleep quality outcomes with the use of GI compared to control groups.

Symptom management for oncological diseases

The characteristics and outcomes of studies evaluating GI in cancer are summarized in Table 2. The first trial, conducted by Chen et al., enrolled 65 breast cancer patients and compared guided imagery to a usual care group in managing 23 symptoms. Each patient in the GI group received 1 hour of pre-chemotherapy relaxation and a CD for daily 20-minute relaxation with guided imagery at home for 7 days post-chemotherapy. Similar to the previous studies, one week of GI significantly decreased insomnia ($p < 0.05$), pain ($p < 0.05$), anxiety ($p < 0.00$), and depression ($p < 0.00$) in the GI group post-test.

When compared to the control group, significant differences were found in the overall symptom distress ($p < 0.05$), insomnia ($p < 0.05$), depression ($p < 0.05$), numbness ($p < 0.05$), anxiety ($p < 0.00$) and depression ($p < 0.00$), but not pain.[32] In another trial assessing emotional distress management in patients with early-stage breast cancer, 114 participants were randomized to receive guided imagery, cognitive-behavioral therapy (CBT), or usual care. At four months, the two intervention groups showed a significant decrease in global symptom index and perceived stress compared to the control group ($p < 0.01$). The GI group also demonstrated significantly lower means of fatigue and sleep difficulties compared to the CBT ($p < 0.01$) and control groups ($p < 0.001$).[33] The aforementioned trial is the only one deemed with a low risk of bias.

The following studies recruited populations with heterogeneous cancer diagnoses, which were not always clearly specified. In the first study conducted by Sloman et al., 56 patients with advanced cancer were randomized to GI, relaxation, GI plus relaxation, or a usual care group. Interventions were led by nurses in the community at the patient's bedside. At the three-week mark, the results for the group's treatment effect on anxiety did not reach statistical significance ($p = 0.057$).

However, there was a significant effect on depression in the three intervention groups ($p = 0.01$).[34] Another trial recruited and randomized 52 patients with multiple types of cancers to assess the effectiveness of GI compared to standard care for the treatment of depression and anxiety. The GI group heard a 20-minute audio file with sentences with a calming background between chemotherapy sessions. After one week, the intervention group in a trial of 52 cancer patients showed significant decreases in anxiety ($p = 0.001$) and depression ($p = 0.03$) compared to the control group. An improvement in chemotherapy side effects, mainly pain, insomnia, appetite, and nausea, was also noted through the symptom distress scale score ($p = 0.001$) in the post-test GI group assessment.[35]

Few trials have studied the effect of GI on pain management. In a trial of 60 elderly patients with colorectal cancer awaiting curative resection, Haase et al. evaluated pain and fatigue management. Participants were randomized to a GI group, a relaxation group, or a usual care group. Patients were instructed by a 12-minute tape on an imaginative journey to a special place where they could feel safe, comforted, and supported. One week after surgery, there was no difference between groups in analgesic consumption and post-operative fatigue.[36] Finally, Nooner et al. had recruitment difficulties and a small sample size ($n = 12$), but patients who received GI showed a trend toward improvement in fatigue and sleep disturbance scores, but not for pain.[37] In total, four out of six randomized trials showed benefits of GI in managing symptoms such as anxiety, depression, and fatigue.

Discussion

GI is a complementary and integrative therapeutic approach, grounded in in-depth, talk-based Jungian psychoanalytic therapy, which seeks to establish a profound emotional connection between the mind, body, and spirit.[14,17,38] This connection has physiological consequences, as explained by the psychoneurogenic theory and the gate control theory.[39–41] These theories state that pleasure sensations can activate the parasympathetic nervous system, releasing neurohormones such as endorphins, while also facilitating the process of confronting and alleviating states of fear, uncertainty, and challenge.[39–41] Due to its promising theoretical foundation, several researchers have tested guided imagery benefits in experimental and quasi-experimental trials involving patients experiencing some form of suffering.

To our knowledge, no review has systematically analyzed and compiled comprehensive evidence regarding guided imagery's impact on symptom management in life-limiting illnesses at different stages. Our systematic review searched 3 databases, screened >8000 references, and summarized the evidence on 24 randomized control trials that included patients with cancer and noncancer diagnoses, such as end-stage renal disease, rheumatoid arthritis, multiple sclerosis, and human immunodeficiency virus.

This review found that GI had a beneficial effect on the management of primarily psychological but also physical symptoms, in several diseases at different stages. Symptoms that were most frequently improved by GI included anxiety, depression, insomnia, pain, nausea/vomiting, and fatigue. In addition, GI was found to be useful in managing symptoms in both early and advanced stages of cancer and noncancer conditions. These findings are consistent with previous reviews on the positive effects of GI in the management of symptoms in patients undergoing chemotherapy[13] and those with opioid use disorder[42] and heart failure.[43] This complementary therapy can be used at the patient's bedside in any type of caregiving facility. In the majority of trials, GI

Table 2. Characteristics of the Studies of Guided Imagery in Cancer Patients

Authors	*No. of participants*	*Disease*	*Symptom(s)*	*Scale to assess symptom improvement*	*Primary outcome*	*Outcome*
Sloman[34]	56	Advanced cancer	Depression Anxiety	Hospital Anxiety and Depression scale	Results for the intervention group failed to reach significance for anxiety ($p=0.057$), but were significant for depression ($p=0.01$).	●
Haase et al.[36]	60	Colorectal cancer	Pain Fatigue	Visual Analog Scale and rate post-operative fatigue on a 100-mm scale	Analgesic consumption ($p=0.6$) and subjective pain intensity at rest ($p=0.3$) and while coughing ($p=0.3$) were not different between groups. Subjective post-operative fatigue was also not influenced.	●
Cohen and Fried[33]	114	Breast cancer	Emotional distress Fatigue Insomnia	The Brief Symptom Inventory, Fatigue Symptom Inventory and The Perceived Stress Scale	Perceived stress significantly decreased post-test in the two intervention groups ($p<0.001$), but not in the control group. Mean of fatigue and sleep difficulties post-test was only significantly lower in the guided imagery group ($p<0.001$).	●
Chen et al.[32]	65	Breast cancer	23 symptoms	Hospital Anxiety and Depression Scale and The Symptom Distress Scale	Within-group analysis, guided imagery decreased insomnia ($p<0.05$), pain ($p<0.05$), anxiety ($p<0.00$), and depression ($p<0.00$). In between-group analysis, guided imagery decreased overall symptom distress ($p<0.05$), insomnia ($p<0.05$), depression ($p<0.05$), numbness ($p<0.05$), anxiety ($p<0.00$), and depression ($p<0.00$).	●
Nooner et al.[37]	12	Solid and hematologic neoplasia	Pain Fatigue Insomnia	PROMIS Pain Interference Short Form, PROMIS Fatigue Short Form, and PROMIS Sleep Disturbance Short Form	Difficulties in recruiting participants resulted in an insufficient sample size for generalizable findings.	●
Mahdizadeh et al.[35]	52	Lung, stomach, prostate, breast Cancer	Depression Anxiety	Hospital Anxiety and Depression Scale Symptom Distress Scale	A significant decrease in anxiety ($p=0.001$) and depression ($p=0.03$) was noted between groups favoring guided imagery. Patients within the intervention group noted improvement in the symptom distress scale ($p=0.001$) in the post-test chemotherapy side effect assessment.	●

Light gray circles represent studies with positive outcomes. Dark gray circles represent studies with negative outcomes.

consisted of a short intervention lasting less than half an hour, which was sufficient for patients to experience improvement in their symptoms.

It can be administered in a one-to-one interaction by health care professionals such as nurses, psychologists, or trained staff members. Alternatively, it can also be implemented asynchronously through standardized scripts, audiotapes, or tablets. Also, GI can be performed in conjunction with pharmacologic and integrative therapies and is versatile enough to be tailored to the individual preferences and interests of each patient. These techniques help prevent a sense of profound emptiness when facing death and can lead to catharsis by transforming the bleak situation into positive feelings.[44] Finally, our review suggests that GI is a safe and cost-effective therapy that can provide symptom relief for extended periods ranging from weeks to months, as reported by the reviewed trials.

GI is a promising complementary and integrative therapy, but faces some upcoming challenges that are worth mentioning. The first challenge is to involve caregivers in delivering or receiving guided imagery interventions to provide comfort or deal with their own emotional symptoms. We identified several nonrandomized pilot studies that were not suitable for inclusion in the review, which reported GI can improve emotional symptoms in caregivers of patients with dementia.[45,46] We consider that in light of our review and the mentioned preliminary results, a high-quality randomized trial is warranted in this population. The second challenge is related to the limitation of applying GI to patients with life-limiting illnesses, who may have sensory or cognitive impairments, making it difficult for them to generate mental imagery. Technological innovations can provide an inclusive and practical solution for this population.

In this line of thought, the third challenge is to develop or incorporate new tools based on guided imagery logic, but with enhanced and user-friendly features, such as virtual reality. This cutting-edge technology incorporates the principles of guided imagery and takes the sensory experience to a new level. Two recent trials tested guided imagery versus virtual reality for anxiety, depression, and pain management in heart failure and cancer patients. Although both trials reported that the guided imagery group had symptom improvement in comparison to the baseline measure, virtual reality had a significantly greater result.[47,48] The usefulness of virtual reality in palliative care is gaining traction; however, it is not an available or cheap option generalizable for all patients with life-limiting illnesses.[49]

Limitations

Our review has several limitations that must be considered. The exclusion of gray literature in our search strategy may have resulted in relevant articles being missed. In addition, only 2 of the 24 trials were deemed to have a low risk of bias, which limits the strength of our findings. We also excluded pediatric patients with life-limiting illnesses, who may also benefit from GI.

Our review did not measure to what extent symptom management improvement was meaningful to patients or improved their quality of life. Our review only identified one study that examined GI in the perioperative period, although this therapy has been used extensively in this scenario for other illnesses. GI, often utilized as a complementary therapy, is frequently administered alongside other complementary and integrative therapies. In our study, we specifically included only those studies that used guided imagery as a stand-alone intervention. We excluded 10 studies that concurrently evaluated multiple therapies (such as progressive muscle relaxation and deep breathing) to eliminate any potential carryover effect that could have introduced bias into our analysis.

It is worth noting all the 10 excluded studies reported a significant benefit for symptom management in the group of patients undergoing the combined intervention. The diversity of GI interventions limits comparability and complicates the possibility of comprehensively reviewing their efficacy. Also, the heterogeneous populations in the studies hampered the possibility of a more robust statistical analysis. Finally, although safety outcomes may have appeared to be obvious, most studies did not report them. As such, it is necessary to ascertain the safety of GI.

Conclusion

GI is a versatile, cost-effective, and person-centered complementary therapy that can effectively manage physical and emotional symptoms in palliative care patients with life-limiting illnesses in both early and advanced stages. The evidence presented in this review highlights the benefits of this therapy. Therefore, health care providers are encouraged to receive training in guided imagery as it can be a valuable tool in their daily practice for relieving suffering of patients with life-limiting illnesses.

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Authors' Contributions

J.E.C.-M.: Conceptualization, methodology, validation, investigation, data curation, writing—review and editing, resources, supervision, and visualization. S.G.-M., N.M.-M., X.R.-C., L.J.B.-M., and B.F.-V.: Methodology, validation, investigation, data curation, writing—original draft, and visualization. M.X.L. and N.S.-B.: Data curation, validation, supervision, and review and editing. O.F.G.: Supervision, resources, and review and editing.

Ethical Considerations

The study did not require ethical approval. The authors followed the journal's citation and reference style in the text.

Declaration

All authors participated in the research design, analysis of information, and writing of the article, and attest to the veracity and originality of the study.

Submission Declaration

The content of this article has not been previously shared in conferences or seminars, and it will only be published when approved.

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Author Disclosure Statement

No competing financial interests exist.

Supplementary Material

Supplementary Table S1

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