








REVIEW

DOES GUIDED IMAGERY IMPROVE HEALTH-RELATED QUALITY OF LIFE IN CANCER PATIENTS? INTEGRATIVE REVIEW

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ABSTRACT

Objective: to analyze research studies that use Guided Imagery as a strategy to improve health-related quality of life in cancer patients.

Method: an integrative review with assessment of the level of evidence, conducted in February 2020 with publications from January 2009 to February 2020 in Biblioteca Virtual em Saúde, National Library of Medicine, Scopus and Web of Science, with the following descriptors: Imagery, Psychotherapy; Neoplasms and Quality of Life, in English, Spanish and Portuguese.

Results: a total of 16 articles were published between 2013 and 2019; 14 in English and 11 randomized clinical trials, including different types of cancer. Guided Imagery was associated with techniques such as breathing exercises and/or progressive muscle relaxation. Positive results for health-related quality of life were observed in 75% of the studies.

Conclusion: Guided Imagery presents benefits when used to improve health-related quality of life in cancer patients. This study contributes to the promotion and dissemination of this practice.

DESCRIPTORS: Quality of Life; Imagery; Psychotherapy; Neoplasms; Integrative Oncology; Mind-Body Therapies.

¿LAS IMÁGENES GUIADAS MEJORAN LA CALIDAD DE VIDA RELACIONADA CON LA SALUD DE PACIENTES COM CÁNCER? UNA REVISIÓN INTEGRADORA

RESUMEN:

Objetivo: analizar investigaciones que emplean Imágenes Guiadas como estrategia para mejorar la calidad de vida relacionada con la salud de pacientes con cáncer. **Método:** revisión integradora con evaluación del nivel de evidencia, realizada en febrero de 2020, con publicaciones de enero de 2009 a febrero de 2020, de la Biblioteca Virtual en Salud, la National Library of Medicine, Scopus y Web of Science, y con los siguientes descriptores: Imágenes, Psicoterapia; Neoplasias y Calidad de vida, en inglés, español y portugués. **Resultados:** se publicaron 16 artículos entre 2013 y 2019; 14 en inglés, y 11 fueron ensayos clínicos aleatorizados, incluyendo diferentes tipos de cáncer. Las Imágenes Guiadas se asociaron a técnicas como ser ejercicios respiratorios y/o relajación muscular progresiva. Se observaron resultados positivos para la calidad de vida relacionada con la salud en el 75% de los estudios. **Conclusión:** las imágenes guiadas presentan beneficios cuando se las emplea para mejorar la calidad de vida relacionada con la salud de pacientes con cáncer. Este estudio contribuye a la promoción y divulgación de esa práctica.

DESCRIPTORES: Calidad de Vida; Imágenes, Psicoterapia; Neoplasias; Oncología Integradora; Terapias Mente-Cuerpo.

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INTRODUCTION

Cancer represents one of the main public health problems due to its incidence; more than 18 million new cases were estimated worldwide in 2018⁽¹⁾. With diagnosis and treatment, several stressful experiences accompany patients and survivors, which can cause physical, psychological and behavioral effects, triggering concern about changes in the Quality of Life (QoL) and well-being of these people⁽²⁾.

In response to the growing needs of the patients for active participation and management of their own care, promoting improved health status, QoL and empowerment, integrative oncology is an emerging area⁽³⁾. Integrative and complementary therapies have been used in international centers specialized in oncology treatments, becoming popular among the patients⁽⁴⁾.

Among the therapies, the mind-body practices, based on the connection between the mind and physical health, are used as an aid in the reduction of side effects and in the improvement of Health-Related Quality of Life (HRQoL)⁽³⁾. The techniques and procedures can be used in isolation or in conjunction. Among them are Guided Imagery, meditation, breathing exercises, Progressive Muscle Relaxation (PMR) and hypnosis⁽⁵⁾.

Guided Imagery is an economical and easy-to-apply intervention that requires little effort from the patient and can be applied by nurses, physicians and psychologists during all cancer stages⁽⁶⁾. It consists in mentally working on visualizing pleasant images and inducing positive thoughts, to replace negativity and stressful factors⁽⁷⁾, and is among the most researched practices⁽⁷⁻⁸⁾. Its use is generally well-accepted by the patients and its effects are easily noticed; in addition to physical recovery, there is also emotional recovery in the patient⁽⁹⁾. The improvement in the emotional domain contributes to reducing the negative impact on the HRQoL of cancer patients, generally triggered after treatment initiation⁽¹⁰⁾.

Therefore, the objective of this study was to analyze research studies that used Guided Imagery as a strategy to improve health-related quality of life in cancer patients.

METHOD

An integrative literature review that followed the research stages: definition of the problem; formulation of the guiding question; definition of the inclusion and exclusion criteria; selection and evaluation of the articles; discussion of the results; and presentation of the synthesis⁽¹¹⁾.

To assist in the identification of key topics and in the formulation of the guiding question, the PICO (Patient, Intervention, Comparison, Outcomes)⁽¹²⁾ acronym was used; where P-Cancer patient, I-Guided Imagery, C-Without comparison, and O-Quality of Life. Consequently, the guiding question was defined as follows: Do cancer patients, during their treatment, benefit from the use of Guided Imagery as a strategy to improve their health-related quality of life?

The searches were conducted in February 2020, in *Biblioteca Virtual em Saúde* (BVS), National Library of Medicine (PubMed), Scopus and Web of Science. The following Descriptors in Health Sciences/Medical Subject Headings (DeCS/MeSH) were adopted for the search strategy: *Imagens (Psicoterapia)*, *Neoplasias* and *Qualidade de Vida/Imagery*, *Psychotherapy*; *Neoplasms* and *Quality of Life*; in English, Spanish and Portuguese, and using the Boolean operator "AND". It was decided to add the keywords *Imagens guiadas/ Guided Imagery* and *Câncer/Cancer* as synonyms for the first and second descriptors,

respectively, using the Boolean operator “OR”, in order to expand the results (Chart 1).

Chart 1 – Search strategy. Curitiba, PR, Brazil, 2020

Databases	Strategy
Biblioteca Virtual em Saúde	("Imagery (Psychotherapy)" OR "Imágenes (Psicoterapia)" OR "Imagens (Psicoterapia)" OR "Imagery, Psychotherapy" OR "Guided Imagery" OR "Imágenes Guiadas" OR "Imagens Guiadas") AND (Neoplasms OR Neoplasias OR Cancer OR Câncer) AND ("Quality of Life" OR "Calidad de Vida" OR "Qualidade de Vida")
National Library of Medicine	
Scopus	
Web of Science	

Source: The authors (2020)

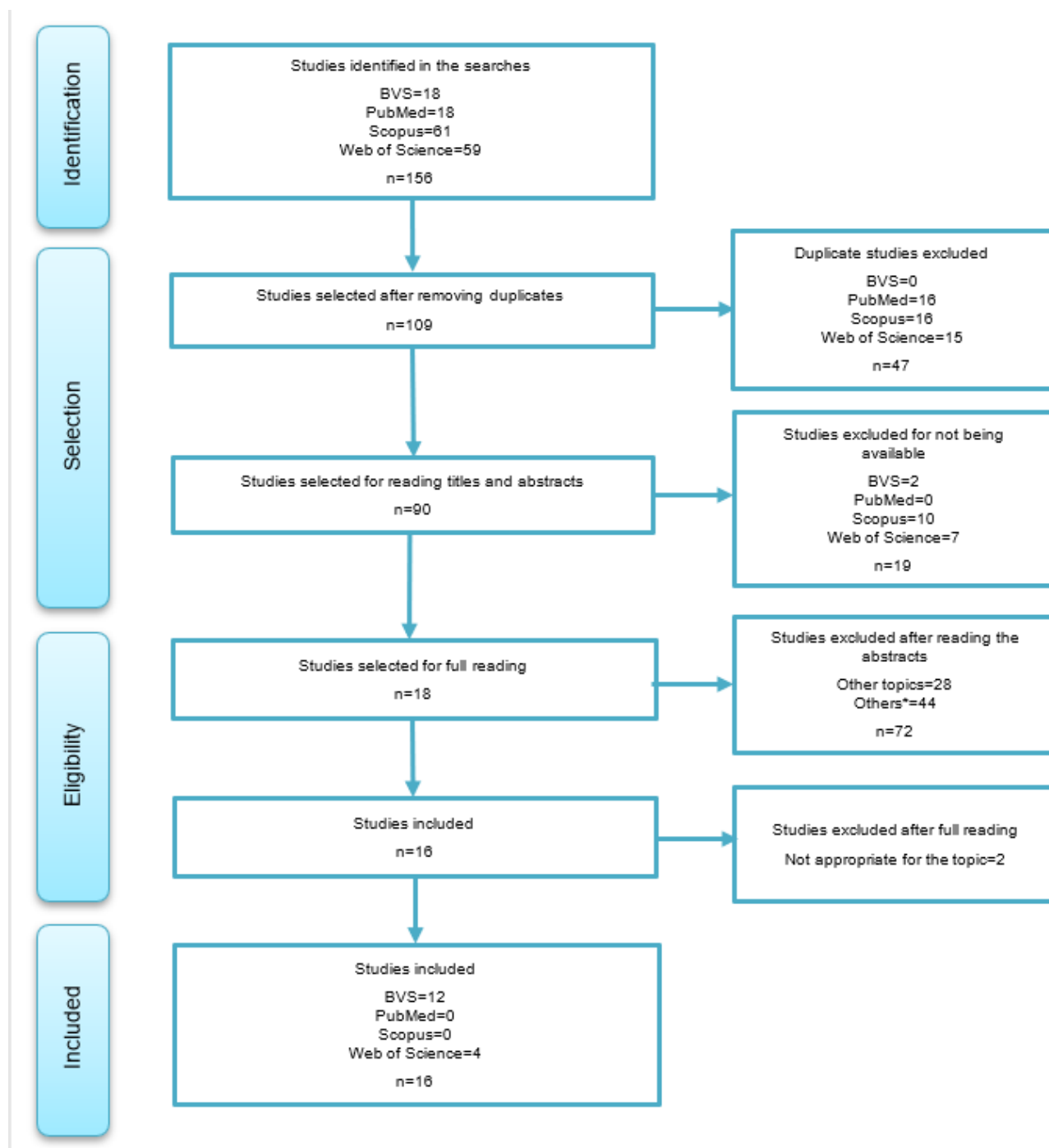
The inclusion criteria were as follows: original articles, available in full, and published from January 2009 and February 2020. Articles that did not answer the guiding question or met the objective were excluded, as well as review articles and other publications.

Selection was performed by two reviewers independently and the disagreements were resolved by consensus with a third reviewer. The articles were sequentially ordered in a Microsoft Excel 365® spreadsheet, excluding those repeated, keeping the first record. For the first evaluation, the titles and abstracts were read to verify their adequacy to the guiding question and objective.

The selected articles were read in full and relevant information was extracted in an instrument for the categorization and mapping of the information: database, journal, year of publication, authors, category, language, title, objective, methodological approach, study locus, participants, description of the technique used, duration of the technique, instrument used to assess HRQoL, results, limitations, considerations, grades of recommendation (GR) and level of evidence (LE). These latter were classified by the Oxford Centre for Evidence-based Medicine⁽¹³⁾, which presents a hierarchical model from A to D for the GR and from 1 to 5 for the LE, where A and 1 are the highest values.

RESULTS

The initial search yielded 159 studies. After the exclusions, a total of 16 articles remained. Figure 1 presents the selection flowchart based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA).



*Reviews (n=28), editorials (n=4), book chapters (n=4), abstracts (n=3), opinion articles (n=1), letters (n=1), reflections (n=1), governmental publications (n=1), and annals (n=1).

Figure 1 – Flowchart corresponding to the selection process. Curitiba, PR, Brazil, 2020
Source: The authors (2020)

Of the selected articles, 14 (87.5%) are written in English and two in Portuguese. 2018 was the most prevalent year, with five (31.3%) publications. Psychology professionals were the main authors in nine (56.3%) articles, followed by Nursing and Medicine with five (31.3%) and two (12.5%), respectively.

In relation to the objective, 12 (75%) studies sought to assess the efficacy of integrative and complementary interventions on the HRQoL and/or symptoms of the cancer patient. Other objectives were as follows: to understand the meaning of the intervention for the participants, A1; to assess the feasibility and acceptability of the intervention, A2; to present

qualitative results from a previous study, A8; and to promote psychospiritual and social transformations, A12; in which QoL was implicit. Chart 2 presents the selected studies.

Chart 2 – Studies included according to identification, type of research, sample number, description of the interventions and results. Curitiba, PR, Brazil, 2020 (continues)

ID*	Type of research (n)	Description of the intervention	Results	GR/LE**
A1 - Toneti BF, et al. Rev Esc Enferm USP. 2019 ⁽¹⁴⁾	Phenomenological (n=9)	Relaxation with guided imagery, PMR conducted in association with image viewing, CD-15 minutes. Single intervention.	Improvement of QoL during the treatment. The participants reported physical and mental well-being and relaxation after the sessions.	B/2C
A2 - Trachtenberg L, et al. Psychooncology. 2019 ⁽¹⁵⁾	Feasibility study (n=60)	Guided imagery exercises once a week, psychoeducational material and group psychotherapeutic processes. Eight weeks.	It identified an improvement in QoL, with no significance	B/2B
A3 - Barre PV, et al. Indian J Psychol Med. 2018 ⁽¹⁷⁾	Pre-experimental, single group, pre- and post-test (n=30)	Psychoeducation package, relaxation with guided imagery and cognitive-behavioral therapy. Six weeks.	Better global health status/ QoL post-intervention. Significance between the pre- and post-intervention scores in: physical and emotional function and role performance. Significant differences in the symptoms: fatigue, pain, dyspnea, insomnia, loss of appetite, constipation and diarrhea.	B/2B
A4 - Esplen MJ, et al. J Clin Oncol. 2018 ⁽¹⁸⁾	RCT**** (n=194: IG=131, CG=63)	90-minute weekly sessions with: imagery, psychotherapy and information. Eight weeks.	The change in QoL was not significant. The Breast subscale showed an improvement in the intervention group with 12 months of monitoring. The group-time interaction was significant.	A/1B
A5 - Hoogland AI, et al. Psychooncology. 2018 ⁽¹⁹⁾	RCT (n=240: IG=121, CG=119)	Stress management during chemotherapy with: abdominal breathing, PMR/ guided imagery and self-assertions. 13 weeks.	Emotional well-being improved significantly. Functional and physical well-being were significantly reduced. The total severity of the symptoms increased significantly.	A/1B
A6 - Nicolussi AC, et al. Rev Enferm Atenção Saúde. 2018 ⁽²⁰⁾	Quasi-experimental (n=240: IG=73, CG=79)	15-minute long recording on a CD. It was applied during the chemotherapy treatment.	At T2 there was a significant difference for the physical function and, at T3, for the physical and emotional functions, role performance, fatigue, and nausea/vomiting. For the intervention group, there	B/2B

			was an increase in the emotional function and a reduction of the nausea/vomiting symptoms.	
A7 - Stoerkel E, et al. J Altern Complement Med. 2018 ⁽²¹⁾	RCT (n=100: IG=49, CG=51)	Breathing, relaxation, meditation, guided imagery, self-hypnosis and tools (acupressure bracelets and diary). Two weeks.	There was no difference between the two study groups.	A/1B
A8 - Elias ACA, et al. Estud. psicol. 2017 ⁽²²⁾	Exploratory, comparative and descriptive (n=28)	Relaxation techniques, guided imagery and elements of spirituality. Mean duration of five weeks.	Significant improvement in perceived QoL. It did not present significant improvements in the WHOQOL domains or in satisfaction with health, according to WHOQOL.	B/2C
A9 - Shahriari M, et al. J Educ Health Promot. 2017 ⁽²³⁾	CT*** (n=50: IG=25, CG=25)	Relaxing scenery images at least twice a day. Six weeks.	Significant increase in the intervention group in overall QoL and functional domains.	A/1B
A10 - Charalambous A, et al. PLoS One. 2016 ⁽⁴⁾	RCT (n=236: IG=120, CG=116)	Script with auditory, tactile and olfactory images accompanied by music: breathing exercise, followed by PMR and guided imagery session. Four weeks.	Increase in the global QoL scores and better HRQoL in the intervention group. Significant reduction after the intervention for sexual functioning and treatment-related functions and significant increase in all the functional scores.	A/1B
A11 - Koplín G, et al. Cancer Med. 2016 ⁽²⁴⁾	RCT (n=60: IG=20, CG=18)	12-minute long audio three times a day. Application two days before the surgery and for at least 30 days after.	The intervention group had higher scores in loss of appetite on the third day and in dyspnea on the 30th postoperative day. On the 30th postoperative day, the QoL scores were markedly lower in the patients with an ostomy.	B/2B
A12 - Elias AC, et al. Complement Ther Clin Pract. 2015 ⁽¹⁶⁾	RCT (n=28)	Relaxation techniques, guided imagery and elements of spirituality. Three weeks.	Significant improvement in the perception of QoL after the intervention. There were no significant improvements in the QoL domains or in satisfaction with health.	B/2B
A13 - Freeman LW, et al. Psychooncology. 2015 ⁽²⁵⁾	RCT (n=118)	CD with guided imagery, lasting from 20 to 30 minutes. Daily practices were encouraged. Minimum duration of three months.	The intervention group presented improvements in the cognitive function and fatigue, as well as a significant improvement in sleep quality.	B/2B
A14 - Garssen B, et al. Psychooncology. 2013 ⁽²⁶⁾	RCT (n=70: IG=34, CG=36)	Guided imagery techniques and counseling, through audio material to be used at home. One month.	QoL increased two and thirty days after the surgery in the intervention group. There was no significant difference between the groups.	B/1B

A15 - Gaston-Johansson F, et al. Psychooncology. 2013 ⁽²⁷⁾	RCT (n=110)	Comprehensive coping strategy program with: preparatory education, cognitive restructuring, improvement of coping skills and relaxation with guided imagery. Minimum duration of three months.	The intervention group presented a significant improvement in overall QoL, health and socioeconomic functioning, and psychological/spiritual well-being.	A/1B
A16 - Jacobsen PB, et al. Psychooncology. 2013 ⁽²⁸⁾	RCT (n=460)	Video, booklet and audio with information, demonstrations and instructions on controlled breathing, PMR with guided imagery and self-assertions. 12 weeks.	None of the intervention conditions had a beneficial impact on composite measures of physical and mental QoL.	B/2B

*Study Identification. **GR-Grades of Recommendation/LE-Level of Evidence ***CT-Clinical Trial. ****RCT-Randomized Clinical Trial.

Source: The authors (2020)

Quantitative studies stood out with 14 (87.5%), being represented by the randomized clinical trial, with 11 (68.8%). Regarding GR and LE, seven (44%) presented level A/1B.

To assess HRQoL, the instruments of the European Organization for Research and Treatment of Cancer (EORTC) were used in seven (43.8%) articles, with an emphasis on the Quality of Life Questionnaire Core 30 (QLQ-C30) used in full in articles A3, A6, A9 and A11; associated with specific modules, in A10; or partially by A7 and A14.

The instruments of the Functional Assessment of Chronic Illness Therapy (FACIT) Measurement System were used in four (25%) articles, both the Functional Assessment of Cancer Therapy-General (FACT-G) and specific instruments for the disease or symptom, highlighted by articles A2, A4, A5 and A13.

The Short-Form Health Survey (SF-36) was used in articles A13 and A16; and the World Health Organization Quality of Life-bref (WHOQOL-bref) was used in A8 and A12. Other instruments used were the Gastrointestinal Quality of Life index (GIQLI), in A11; and the Quality of Life Index-Cancer Version (QOLI-CV), in A15. Qualitative study A1 used phenomenological interviews. Of the 16 studies, three used more than one instrument to assess HRQoL, namely: A5, A11 and A13.

The participants included were those diagnosed with cancer before treatment initiation, during and after the end of treatment. Guided Imagery was applied for different periods, from a single application to 13 weeks; in seven (43.8%) studies, the participants were encouraged to undergo the intervention daily.

In all the studies, Guided Imagery was used in association with other techniques, most commonly with breathing exercises and/or PMR. Psychotherapy, education in health or psychoeducation, music, meditation, acupressure bracelet, cognitive-behavioral therapy, elements of spirituality, self-assertions and counseling were also associated.

The results of the efficacy of interventions on HRQoL were varied: 12 (75%) identified an improvement in perceived HRQoL, overall QoL and/or in domains, functions or symptoms. Studies A2 and A14 stand out, which reported non-significant improvement, as well as A4, which presents an improvement in the assessment with a specific instrument, with no difference in the assessment with the generic instrument. Studies A5, A7 and A16 did not present any difference or improvement in the HRQoL aspects. Study A11 identified higher scores in loss of appetite and dyspnea in the group subjected to Guided Imagery; and the

ostomized patients who received the intervention had lower HRQoL scores assessed by GIQLI. No adverse effects related to Guided Imagery were reported.

DISCUSSION

In this review, various situations and applications of Guided Imagery were found in cancer patients. In addition to the impact on HRQoL, body image (A2, A4) and sexual function (A4), stress (A3, A14, A15) and anxiety (A7), promotion of social and psychospiritual transformations, self-esteem, hopelessness (A8, A12), symptoms (A10) and assessment of the psychological effects of the intervention (A14) were worked on with Guided Imagery.

The number and frequency of the intervention sessions conducted are not described in all the studies, varying in relation to the application. There is a description of stimulus and availability of materials to carry out the intervention at home, seeking to increase the participant's exposure to attain the objectives; however, this method does not ensure that the therapy was performed nor reveals the number of times or the quality of the session. The number of interventions can influence the outcome, and regular and long-lasting practice tends to present better results⁽²⁹⁾; however, in relation to HRQoL, no evidence was found to support this hypothesis.

The main reasons to employ the technique were improvement in HRQoL and symptom relief. There is evidence that the relaxation therapy, which includes PMR and Guided Imagery or visualization techniques, added to standard care, reduces depressive symptoms and mood disorders and may offer other health benefits, including psychological outcomes that can be affected by stress and anxiety^(8,30).

There were also positive points reported by the patients. The articles indicate a feeling of lightness, well-being and physical and mental relaxation (A1); significant decrease in stress (A3), nausea and vomiting (A10); reduction of fatigue and depression (A10, A14, A15); and significant improvements in self-esteem and well-being (A12). The intervention stimulated emotional reactions and helped women to understand their feelings (A4); it also promoted empowerment (A8). Study A2 reports that the participants considered themselves very satisfied (73%, n=32) or satisfied (20%, n=nine) with the intervention, reporting a feeling of relief (82%, n=36) and pointing to a significant reduction in anguish related to body image.

In the studies that did not present significant or positive results in relation to HRQoL, there were relevant results in other aspects. In A7, the authors conclude that the intervention can provide a healthy coping method and increase resilience during the treatment. In this study, 94% of the participants stated being satisfied or very satisfied; there was a non-significant reduction in anxiety and a significant reduction in pain. In addition to that, the authors suggest that the abrupt increase in the erythrocyte sedimentation rate in the postoperative period, in the intervention group, implies an improvement in wound healing. In study A14, the participants report high appreciation in relation to Guided Imagery, and the results show a significant reduction in depression and fatigue. Study A15 reports an improvement in emotional well-being.

The association of Guided Imagery with other relaxation techniques was observed in the studies, predominantly breathing exercises and/or PMR. They are intended to induce a state of relaxation, so that the individual can conceive calming and comforting mental images⁽⁶⁾. The application of more than one concurrent technique has better effects when compared to isolated use⁽²³⁾. A systematic review, which aimed at assessing whether there is an evidence base to support the use of integrative therapies for clinical application in the context of breast cancer, points out that the use of Guided Imagery for relaxation is frequently associated with PMR⁽³⁰⁾, corroborating the results found.

In relation to the assessment of QoL, the use of validated and internationally recognized instruments was observed, both generic and specific in different studies. As there is no HRQoL assessment instrument suitable for all situations, the comparison between them becomes difficult. For the choice, it must be observed whether what is being assessed is represented by the instrument selected at the time of measurement. In this sense, whether in the clinical practice or in research, it is important that the health professionals are updated on the quality of the HRQoL measurement instruments to make a more adequate selection⁽³¹⁾.

The instruments most used in the studies were QLQ-C30 and FACT-G, multidimensional scales built specifically to assess HRQoL in cancer patients; additionally, specific subscales can be used for different types of cancer, treatments or symptoms. QLQ-C30 restricts its items to relatively objective aspects of functioning, while FACT-G encourages the patients to reflect on their thoughts and feelings⁽³²⁾. The literature highlights that specific instruments are more sensitive to capture the changes caused by the disease and treatment⁽³³⁾.

WHOQOL-bref is a multidimensional instrument developed by the World Health Organization, comprehensive but generic, and it values individual perception, being able to assess the QoL of different groups and situations⁽³⁴⁾. SF-36 is a generic HRQoL assessment instrument designed to assess general health status and to allow comparisons between patients with different diseases and the general population⁽³⁵⁾. GIQLI is specific for gastrointestinal symptoms, not necessarily related to cancer, and is used in gastroenterology and digestive surgery⁽³⁶⁾.

The articles found in this review presented positive results for symptom relief and improvement in perceived HRQoL, overall HRQoL or in the domains affected by cancer, related to Guided Imagery in the various treatment phases and in survival.

The reduced number of publications on the theme can be a study limitation, as well as the heterogeneity of the studies in relation to the methodology and intervention, such as script variations, duration, association with other techniques and number of intervention applications, which make it difficult to generalize and compare the results.

FINAL CONSIDERATIONS

The evidence found in this review showed that Guided Imagery is a strategy that improves the HRQoL of cancer patients and can be recommended by health professionals, offering low cost and no associated side effects.

There are many factors that interfere in the results of the analyzed studies to be considered: the different types of cancer, therapeutic approaches, number of applications, staging and patient prognosis. However, the studies analyzed show that cancer patients have changes in HRQoL; thus, the use of Guided Imagery, associated with other techniques, showed improvements in domains, functions or symptoms, with a positive impact on perceived and general HRQoL.

This study contributes to the promotion of the use of Guided Imagery for cancer patients and to the dissemination of evidence about the benefits of the practice.

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