

REVIEW

INTERVENTIONS IN THE MANAGEMENT OF FATIGUE AND QUALITY OF LIFE IN PATIENTS UNDERGOING CHEMOTHERAPY: REVIEW STUDY

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ABSTRACT

Objective: to identify in the literature the non-pharmacological interventions used in the management of oncological fatigue and Quality of Life of patients with digestive neoplasia undergoing chemotherapy.

Method: this was an integrative review. The MEDLINE, PubMed, Scopus, CINAHL and Web of Science databases were used. Articles in Portuguese, English or Spanish, published between 2013-2018, which described the use of non-pharmacological interventions for oncological fatigue and/or Quality of Life of patients with digestive system neoplasms undergoing chemotherapy were selected.

Results: Of the total of 278 articles retrieved, six were selected. Regarding the language, all were in English. Among the clinical trials, only one scored 5 on the Jadad Quality Scale. The studies indicated the use of physical activity programs as being effective.

Conclusion: the practice of physical activity was considered an effective intervention, while acupuncture did not present a viable clinical response in the management of oncological fatigue and Quality of Life.


DESCRIPTORS: Gastrointestinal neoplasms; Complementary therapies; Fatigue; Quality of life; Nursing.


HOW TO REFERENCE THIS ARTICLE:

Mendes LC, Barichello E. Interventions in the management of fatigue and quality of life in patients undergoing chemotherapy: review study. *Cogitare enferm.* [Internet]. 2019 [access "insert day, month and year"]; 24. Available at: <http://dx.doi.org/10.5380/ce.v24i0.61790>.



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INTERVENÇÕES NO MANEJO DA FADIGA E QUALIDADE DE VIDA EM PACIENTES EM QUIMIOTERAPIA: ESTUDO DE REVISÃO

RESUMO

Objetivo: identificar na literatura as intervenções não farmacológicas utilizadas no manejo da fadiga oncológica e Qualidade de vida de pacientes com neoplasia digestiva em quimioterapia. *Método:* trata-se de uma revisão integrativa. Foram utilizadas as bases de dados MEDLINE, Pubmed, Scopus, CINAHL e Web of Science. Foram selecionados artigos em português, inglês e espanhol entre 2013-2018, que descreviam o uso de intervenções não farmacológicas utilizadas na fadiga oncológica e/ou Qualidade de Vida de pacientes com neoplasia digestiva em quimioterapia.

Resultados: do total de 278 artigos, seis foram selecionados. Em relação ao idioma, todos estavam em inglês. Entre os ensaios clínicos, somente um pontuou cinco na Escala de Qualidade de Jadad. Os estudos trouxeram a utilização de programas de atividade física como sendo eficazes.

Conclusão: a prática de atividades físicas foi considerada uma intervenção eficaz, já a acupuntura não apresentou resposta clínica viável no manejo da fadiga oncológica e Qualidade de Vida.

DESCRITORES: Neoplasias gastrointestinais; Terapias complementares; Fadiga; Qualidade de vida; Enfermagem.

INTERVENCIONES EN EL MANEJO DE LA FATIGA Y CALIDAD DE VIDA EN PACIENTES EN QUIMIOTERAPIA: ESTUDIO DE REVISIÓN

RESUMEN

Objetivo: identificar en la literatura las intervenciones no farmacológicas que se utilizan en el manejo de la fatiga oncológica y en la calidad de vida de pacientes con neoplasia digestiva en quimioterapia.

Método: es una revisión integral. Se utilizaron las bases de datos MEDLINE, Pubmed, Scopus, CINAHL y Web of Science. Se eligieron artículos en portugués, inglés y español entre 2013 y 2018, los cuales describían el uso de intervenciones no farmacológicas que se usan para la fatiga oncológica y/o Calidad de Vida de pacientes con neoplasia digestiva en quimioterapia.

Resultados: del total de 278 artículos, se seleccionaron seis. Acerca del idioma, todos estaban en inglés. Entre los ensayos clínicos, solamente uno obtuvo cinco puntos en la Escala de Calidad de Jadad. Los estudios mostraron utilización de programas de actividad física como eficaces.

Conclusión: se consideró la práctica de actividades físicas una intervención eficaz, mientras la acupuntura no presentó respuesta clínica viable en el manejo de la fatiga oncológica y en la Calidad de Vida.

DESCRIPTORES: Neoplasias gastrointestinales; Terapias complementarias; Fatiga; Calidad de vida; Enfermería.

INTRODUCTION

In the last decades cancer has become an evident problem of world public health due to its epidemiological relevance, being highlighted by the high rate of morbimortality. Estimates for the biennium 2018-2019 indicate the occurrence of 600 thousand new cases of cancer per year⁽¹⁻²⁾.

It is necessary to consider the high incidence and morbimortality profile of tumors of the digestive system, which are one of the most prevalent oncological types among populations, including tumors from the mouth to organs such as the esophagus, stomach, small and large intestines, gallbladder, liver, pancreas and rectum, with colorectal neoplasms and gastric neoplasms being the most common⁽³⁻⁵⁾.

In this context, among the different oncological treatments instituted, chemotherapy stands out as one of the most chosen modalities aiming for a cure, control or even palliation of the disease. It should be noted that, because they lack specificity, chemotherapeutics do not exclusively attack tumor cells and can cause damage to normal cells that have characteristics similar to neoplastic ones. Because of this aggressively, antineoplastic chemotherapy triggers toxicity or side effects for the body and may cause immediate, early, delayed or late effects⁽⁶⁻⁷⁾.

Accordingly, the treatment can cause side effects such as xerostomia, mucositis, alopecia, loss of appetite, dysphagia, nausea, vomiting, weight loss, constipation, fatigue, drowsiness, concerns with body image and sadness. All these symptoms have a significant impact on patients' lives, altering both their self-esteem and self-care capacity⁽⁸⁾.

Oncologic fatigue is one of the most prevalent symptoms in cancer patients, being reported by 50% to 90% of patients, negatively impacting their Quality of Life (QoL) and daily Functional Capacity (FC)⁽⁹⁾. Oncologic fatigue can be defined as a subjective, persistent and distressing feeling of cognitive and/or emotional fatigue, or exhaustion related to the illness and/or treatment, interfering with daily activities. Accordingly, it is important for healthcare providers to track the presence of fatigue in cancer patients from the diagnosis to the end of treatment, as well as to evaluate the QoL⁽¹⁰⁾.

Another important aspect to be measured is the QoL of the patient undergoing chemotherapy, with it standing out as an important resource for the evaluation of treatment outcomes. It is a fundamental instrument for patient follow-up and for the monitoring of clinical manifestations, side effects and the repercussion of the antineoplastic chemotherapy⁽¹¹⁾.

Quality of life can be defined as individuals' perception of their position in life, the context of the culture and the value systems in which they live and in relation to their goals, expectations and concerns. Furthermore, QoL is a comprehensive concept affected in a complex way by the physical health, psychological state, level of independence, social relations, personal beliefs and environmental characteristics⁽¹²⁻¹³⁾. The measurement of QoL has therefore been an important tool used in clinical trials with antineoplastic chemotherapy to assess the side effects of the treatment, standing out as one of the best methods to evaluate patient tolerance to treatment⁽¹⁴⁾.

From this perspective, the search for quality in the care of cancer patients undergoing treatment with antineoplastic chemotherapy is an important aspect to be measured, since it evaluates the various dimensions of the disease, as well as creating clinical parameters for the care practice⁽¹⁴⁾. It is the responsibility of the healthcare provider that supplies care to patients undergoing chemotherapy to offer care that is adequate for the needs of each patient, in an integrative and individual way, in order to make the treatment less painful for this population⁽¹⁵⁾.

It can be observed that oncological patients undergoing chemotherapy are constantly submitted to procedures that cause discomfort, with the need arising to seek

complementary practices associated with the traditional medical treatment, in order to minimize adverse events and increase QoL⁽¹⁶⁾.

Therefore, the importance of health intervention for these patients as a means of counseling, aimed at adapting and managing the patient's fatigue symptoms and consequently improving their QoL, is highlighted. It should be emphasized that people empowered through educational actions can improve their understanding and participate actively in their own care, mobilizing resources and actions that reduce anxiety, strengthen their strategies to deal with cancer and consequently improve their QoL⁽¹⁷⁾.

An intervention study showed that the education on the symptoms provided to cancer patients undergoing chemotherapy reduced the frequency, severity and degree of discomfort caused by the treatment⁽¹⁸⁾.

Analyzing the magnitude of tumors of the digestive system, the occurrence of cancer fatigue and reduction of QoL in patients undergoing treatment with antineoplastic chemotherapy, it is considered that the contribution of health interventions in the guidance and provision of qualified care, based on science and on the consequent optimization of the treatment, can aid in the recovery of cancer patients. Therefore, the present study aimed to identify in the literature the non-pharmacological health interventions used in the management of oncological fatigue and the QoL of patients with neoplasia of the digestive system undergoing chemotherapeutic treatment.

METHOD

This was an integrative review type study. In order to carry out the study and achieve the proposed objective, the following steps were followed: design of the guiding question, establishment of objectives and elaboration of inclusion and exclusion criteria for the articles, use of a previously prepared instrument in the collection of information from the studies, selection of articles in the literature, discussion of the results and presentation of the integrative review⁽¹⁹⁾.

To direct the integrative review, the following guiding question was formulated: "what scientific evidence is there regarding non-pharmacological health interventions used in the management of cancer fatigue and QoL in patients with neoplasia of the digestive system undergoing treatment with antineoplastic chemotherapy".

The literature review was conducted in April 2018 through access to MEDLINE, PubMed (Digital Biomedical Archives and Health Sciences of the US National Institutes of Health), Scopus, CINAHL (Cumulative Index to Nursing and Allied Health Literature) and Web of Science. The selection of the search terms was adapted to correspond to the search tool of each database, using MeSH terms to search the PubMed, Web of Science, Scopus and CINAHL databases, and the DeCS terms (Health Science Descriptors) for MEDLINE. The terms "Gastrointestinal Neoplasms"; "Drug Therapy"; "Fatigue" and "Clinical Trial" were used as descriptors. The terms were isolated, analyzed and combined using the Boolean operator "AND".

Portuguese, English and Spanish articles, published in the years 2013 to April 2018, with open access and availability of full texts, which described the use of non-pharmacological health interventions used in the management of oncological fatigue and/or QoL of patients with neoplasia of the digestive system, whether exclusively or together with other types of tumors, undergoing treatment with antineoplastic chemotherapy, were included. Review articles, experience reports and articles that did not use chemotherapy as the main cancer treatment were excluded.

In total, 278 (100%) articles were identified in the five databases investigated: 265 (95.3%) in PubMed, 10 (3.6%) in MEDLINE, two (0.7%) in CINAHL, one (0.4%) in Scopus

and none (0%) in the Web of Science. The pre-selection of the articles from the reading of their titles and abstracts was performed and those that did not fulfill the inclusion and exclusion criteria were discarded. After reading the titles and abstracts, considering the inclusion and exclusion criteria, 11 studies remained, which were evaluated for eligibility.

The analysis of the research design of the studies included in the integrative review was based on the concepts described by Polit and Beck (2016). The authors classify quantitative studies as experimental, quasi-experimental and non-experimental⁽²⁰⁾. The methodological quality of the randomized clinical trials was analyzed using the Jadad Quality Scale, which consists of a quality scale to measure the likely bias of the study. The Jadad score is measured using a five-point scale including three criteria: randomization, blinding level, and mention of dropouts and withdrawals. Of the five potential points, procedures that score three or more points are considered high-quality and those that score less than three lower quality⁽²¹⁾.

The data were analyzed descriptively and presented in detail, including a summary of the knowledge produced in each study, with the aim, sample, intervention used, main results and conclusions.

A data extraction table was designed to group the information of the studies, presenting the following information: identification (authors, title, periodical, year, volume, number, page and language), publication type, research design, sample characteristics, treatment of statistical data, interventions performed, main results and conclusion.

RESULTS

Of the 11 (100%) selected primary studies, five (45.5%) were excluded because they did not address the complete study and/or did not address the study topic. Accordingly, the review sample consisted of six (100%) primary studies: five (83.3%) in PubMed and one (16.7%) in MEDLINE. The process of analyzing the studies is illustrated in Figure 1 through the PRISMA flowchart⁽²²⁾.

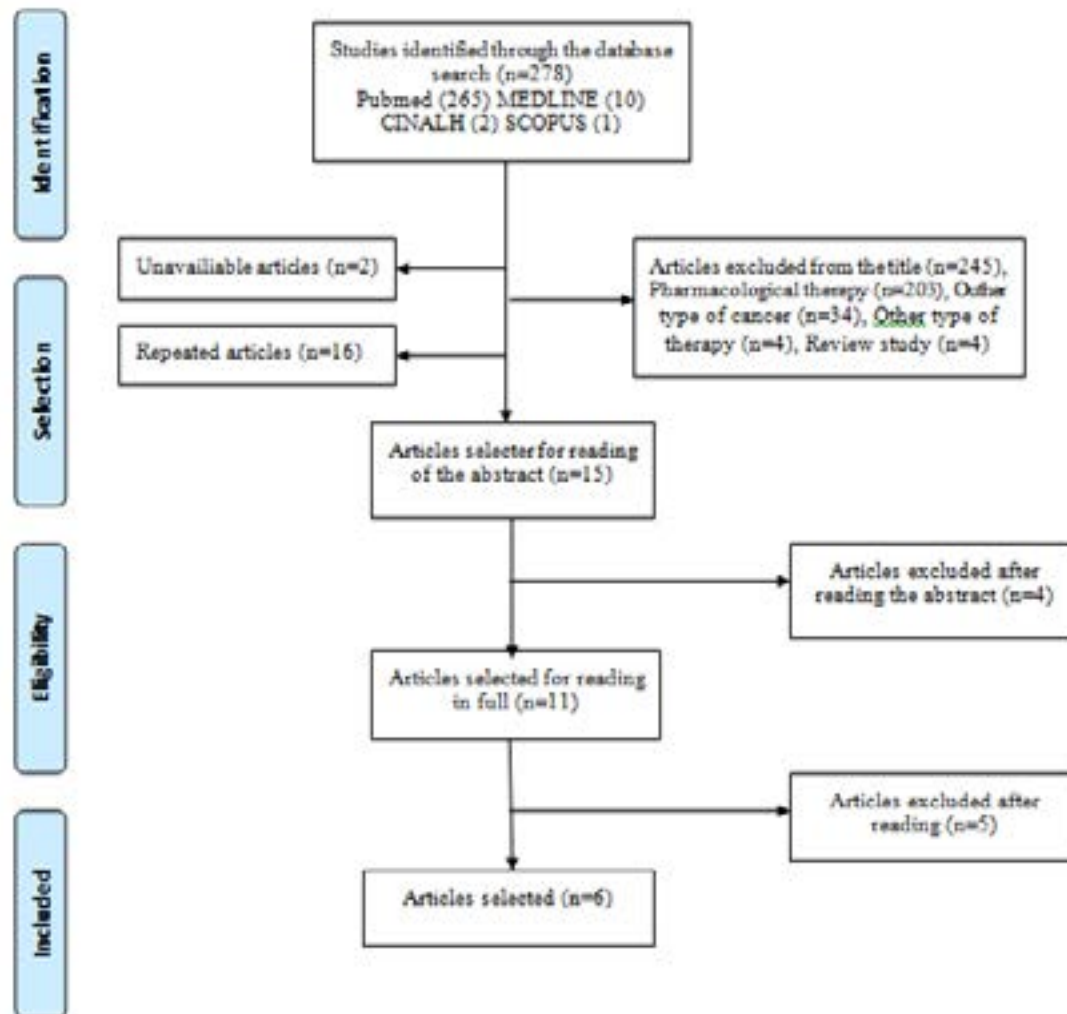


Figure 1 - Information flow with the different phases of the integrative review. Adapted from Moher et al., 2009. Uberaba, MG, Brazil, 2018

All the articles included were in English. Regarding the research design, five (83.3%) studies were classified as randomized clinical trials and one (16.7%) quasi-experimental (Table 1).

Table 1 - Characterization of the studies included in the review. Uberaba, MG, Brazil, 2018 (continues)

Title	Authors/year	Type of study
1. Feasibility of a 12-month-exercise intervention during and after radiation and chemotherapy in cancer patients: impact on quality of life, peak oxygen consumption, and body composition	Grabenbauer A, Grabenbauer AJ, Lengenfelder R, Grabenbauer GG, Distel LV (2016) ⁽²³⁾	Quasi-experimental
2. Acupuncture for the treatment of post-chemotherapy chronic fatigue: a randomized, blinded, sham-controlled trial	Deng Gary, Chan Y, Sjoberg D, Vickers A, Yeung KS, Kris M, et al. (2013) ⁽²⁴⁾	Randomized Clinical Trial
3. Cost-effectiveness analysis of an 18-week exercise programme for patients with breast and colon cancer undergoing adjuvant chemotherapy: the randomised PACT study	May AM, Bosch MJC, Velthuis MJ, Van der Wall E, Bisschop CNS, Los M, et al. (2017) ⁽²⁵⁾	Randomized Clinical Trial

4. A randomized pilot study with daily walking during adjuvant chemotherapy for patients with breast and colorectal cancer	Backman Malin, Wengstr Y, Johansson B , Sköldengen I, Börjesson S, Tärnbro S, et al. (2014) ⁽²⁶⁾	Randomized Clinical Trial
5. Exercise training in patients with advanced gastrointestinal cancer undergoing palliative chemotherapy: a pilot study	Jensen W, Baumann FT, Stein A, Bloch W, Bokemeyer C, Wit M, et al. (2014) ⁽²⁷⁾	Randomized Clinical Trial
6. Effects of an Exercise Program in Colon Cancer Patients undergoing Chemotherapy	Vulpen JKV, Velthuis MJ, Bisschop CNS, Travier N, Buijs BJWVD, Backx FJG, et al. (2016) ⁽²⁸⁾	Randomized Clinical Trial

Among the clinical trials, one study (20%)⁽²⁴⁾ scored five on the Jadad Quality Scale (maximum score of five points), indicating that the study was randomized, the method for producing the randomization was adequate, appropriate blinding was described and used and the exclusions were reported. One study (20%)⁽²⁸⁾ received a score of three, indicating that the study was randomized, the method to produce the randomization sequence was adequate, and the losses and exclusions were reported, however, there was no blinding. Two studies (40%)⁽²⁶⁻²⁷⁾ received a score of two points, as they described the randomization and dropouts and withdrawals, and one (20%)⁽²⁵⁾ of the articles received one point, as it only described the randomization. The studies were published between 2013 and 2017. The methodological analysis according to the Jadad is described in Table 2.

Table 2 - Analysis of the methodological quality of the randomized clinical trials according to the Jadad Quality Scale. Uberaba, MG, Brazil, 2018

Study	Describes randomization	Clear Randomization	Describes blinding	Adequate blinding	Describes dropouts and withdrawals	Jadad
Deng et al. (2013)	Yes	Yes	Yes	Yes	Yes	5
May et al. (2017)	Yes	No	No	No	No	1
Backman et al. (2014)	Yes	No	No	No	Yes	2
Jensen et al. (2014)	Yes	No	No	No	Yes	2
Vulpen et al. (2016)	Yes	Yes	No	No	Yes	3

In relation to the interventions used in the management of fatigue and QoL, the most cited was the use of physical exercises. In this context, one study aimed to evaluate the impact of physical exercise in a population of cancer patients during and after chemotherapy and radiotherapy treatment. The sample consisted of 45 patients, over 18 years of age and motivated to practice physical exercises. The intervention consisted of three weekly sessions of individual exercises with duration of 30 to 60 minutes with a gradual increase in intensity. The participants were encouraged to continue the exercise program at home and adherence was monitored through exercise journals, follow-up visits, and/or phone calls. The results of the study evidenced an increase in the overall health status scores, as well as an improvement in oxygen consumption, body composition and QoL⁽²³⁾.

Another clinical trial aimed to evaluate the cost-effectiveness of an 18-week program

of physical activity during treatment for patients with breast and colon cancer. For this, 237 patients were randomized into two groups. For the intervention group an 18-week exercise program was offered, tailored to personal preferences and level of fitness. The one-hour exercise classes included warming up (5 min), aerobic and muscular strength training (50 min) and cooling down (5 min). In addition to the supervised exercise program, the patients were instructed to remain active for 30 min on at least three days a week. At the end of the study, the authors concluded that there was an improvement in fatigue in patients with colon cancer, as well as reduced costs in relation to the chemotherapy, hospitalization, medical contacts and absence from work⁽²⁵⁾.

A similar study investigated the effect of an 18-week supervised exercise program during adjuvant chemotherapy on fatigue in patients with colon cancer. The study was performed with 33 patients. The patients randomized into the intervention group participated in a supervised exercise program, twice a week for one hour, which included warming up (10 min), muscle strength training and aerobic activity (40 min) and cooling down (10 min). In addition to the supervised sessions, the patients were instructed to be physically active for at least 30 minutes on three other days of the week. The study showed promising results, indicating that an exercise program is feasible, safe, and can have beneficial effects on physical fatigue and general fatigue⁽²⁸⁾.

Another study investigated the feasibility of physical activity in cancer patients undergoing chemotherapy and their adherence. For this, 77 patients were selected and randomized into two groups. The participants were encouraged to walk 10,000 steps per day, which is equivalent to approximately 8 km of daily walking, for ten weeks. As a result, the study did not find significant differences in QoL between the intervention group and control and suggested measures to improve the results, including a program with greater intensity of physical activity, supervised exercises, including individualized programs; the inclusion of more objective measures to assess performance; and larger samples to increase the value of the physical activity interventions⁽²⁶⁾.

A pilot study with 21 patients sought to investigate the feasibility of two different training programs in patients with gastrointestinal cancer undergoing palliative chemotherapy. The patients were randomly allocated into two groups: one resistance group and one aerobic training group. The resistance group received 45-minute supervised training sessions, including warm-up and rest periods, twice a week for a total of 24 sessions over a 12-week period. The aerobic training group received sessions of 45 min on a stationary bicycle twice a week for 12 weeks. As a result, the study found that the aerobic training group showed improvements in QoL scores for overall health status and role functioning. The fatigue score decreased and sleep quality increased in both groups⁽²⁷⁾.

Another intervention analyzed was acupuncture, presented in one article, with the purpose of verifying the reduction of fatigue after chemotherapy. A total of 101 patients were selected and divided into two groups: intervention and control. Patients in both groups received treatment once a week for six weeks. In the intervention group 14 filiform needles were used, inserted at predefined points and depth. In the control group, simulated needles with blunt tips were used, with the insertion points away from the points used in the true acupuncture. The authors concluded that acupuncture, as used in the study, was not a viable clinical option in the treatment of chronic fatigue after chemotherapy. However, the limitations mentioned were related to the number of patients lost during follow-up, and the possibility of an effective treatment regimen using acupuncture was not excluded⁽²⁴⁾.

DISCUSSION

The study and evaluation of the QoL and fatigue of cancer patients have recently attracted the interest of researchers, since cancer stands out as a public health problem of a worldwide proportion, increasingly common among populations. Antineoplastic chemotherapy, due to its non-specificity, causes side effects to the patient being treated.

According to the National Cancer Institute (INCA), some of these effects are so detrimental to the human body that they can lead to the interruption of the treatment or even cause the death of the patient, so that these possible effects must be predicted, detected and treated as soon as possible⁽⁷⁾.

A study carried out with patients undergoing chemotherapy treatment for cancer observed that the therapy triggered side effects such as pain, fatigue, insomnia and loss of appetite, causing deficits in the functions performed and impairing the QoL of the patients being treated. The authors emphasized that improvements in the QoL of these patients can occur according to the avoidance and control of the treatment symptoms, as well as adherence to effective complementary measures that may help patients cope better with the disease and the therapy received⁽²⁹⁾.

Corroborating these data, the INCA emphasizes the importance of early fatigue assessment, through clinical criteria of intensity and biopsychosocial limitations, measured by means of validated scales and treated not only considering its occurrence, but also considering the way it affects the functional status of the patient, possibly even interfering in their decision regarding the proposed treatment⁽⁷⁾.

In this context, this study evaluated the scientific evidence regarding non-pharmacological health interventions used in the management of oncological fatigue and QoL in patients with neoplasia of the digestive system undergoing treatment with antineoplastic chemotherapy. Of the total of 278 articles retrieved, six fulfilled the eligibility criteria. Three (50%)^(23,25,28) suggested that the intervention was effective in improving QoL and/or fatigue, two (33%)^(24,26) found no improvement in QoL and/or fatigue, not suggesting the treatment as a viable clinical option, and one (17%)⁽²⁷⁾, which evaluated two different types of intervention, identified that both were effective.

The studies included in the review proposed the use of physical activity programs of different modes and intensity as being effective therapies for use in the management of oncological fatigue and QoL. Of the total of five articles evaluating the use of physical activity, four (80%) considered the practice of physical exercises as being feasible for the cancer patient undergoing treatment with antineoplastic chemotherapy, improving QoL and/or fatigue scores, and providing other benefits such as improved oxygen consumption, body composition, reduction of costs with chemotherapy, hospitalization, medical contacts and absences from work and improved quality of sleep^(23,25,27-28).

Corroborating the data found, a study showed that only a small proportion of patients receive guidance regarding the implementation of a physical activity routine, despite the performance of physical exercise standing out as one of the most effective measures for aiding the improvement of fatigue, as well as providing benefits for QoL, FC and stress⁽⁹⁾.

The use of acupuncture, investigated in one article (16%), did not present a viable clinical response in relation to significant improvements in the fatigue score of cancer patients. However, the authors highlighted the limits of the study related to the number of patients lost at follow-up and did not rule out the possibility that a more intensive treatment regimen may be effective⁽²⁴⁾.

Another study that evaluated and selected guidelines on the subject corroborated the data found and emphasized the importance of the practice of physical activity, and, unlike the results of this study, recommended the use of acupuncture as a fatigue management strategy. In addition, it recommended the use of Cognitive Behavioral Therapy (CBT) and psychoeducation, as well as activities such as Yoga, music therapy, Reiki and massage⁽¹⁰⁾ as measures used in the management of fatigue.

In addition to the interventions mentioned (physical activity and acupuncture), other types of non-pharmacological therapies are used in the management of fatigue and are listed in the literature, such as the use of Cognitive Behavioral Therapy, sleep hygiene therapies and complementary alternative medicine). Another study also indicated the use of guided imaging and the practice of prayer as effective in reducing the effects of

chemotherapy⁽³⁰⁾.

The importance of these data is emphasized, since these measures can be effective and assist in the care planning, contributing to the clinical practice and consequently to improving the QoL and reducing the fatigue of cancer patient undergoing chemotherapy treatment.

As a limitation of the study, the evaluated period of five years is highlighted. Although 278 articles were found, only six were included in the review because they fulfilled the inclusion and exclusion criteria, with it being possible that previously published articles were excluded.

CONCLUSION

There are few publications in scientific journals regarding non-pharmacological interventions for patients with gastrointestinal cancer undergoing chemotherapy. Among the studies found, the practice of physical activity was considered a viable intervention for the management of oncological fatigue and improvements in the QoL of patients being treated with antineoplastic chemotherapy for neoplasms of the digestive system.

It is emphasized that antineoplastic chemotherapy causes side effects to the patient being treated that are harmful to the human body, leading to the interruption of the treatment or possibly the death of the patient. This scenario suggests the need for studies on this impact and the analysis of measures that can be used to manage these symptoms.

Accordingly, the development of this work contributed to the analysis of these measures aiming to support the care needs and contribute to the adequacy of the professional profile of the health area, regarding the development of skills and competencies to fulfill the needs of these clients.

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Received: 25/09/2018

Finalized: 14/05/2019

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