

## The Effect of Massage Therapy in Cancer Patients

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### Abstract

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The increase in longevity and incidence of chronic diseases reveals an increased importance in terms of public health. The oncologic illness as such, it is a debilitating and progressive pathology with need for prevention and symptomatic relief. In order to respond to the question: "The effect of massage therapy on cancer patients?" We have done a review of empirical literature indexed in databases online, getting only 21 articles published since 1990 to 2015. It was possible to verify some of the effects of massage therapy, particularly in relieving pain, decreased anxiety, depression and nausea and increased well-being. Not found the effect of this intervention on the relief of suffering and the quality of life of patients. With the heterogeneity of methodologies, studies suggest the development of more homogeneous research, materials and methods to assess the effects of massage therapy in cancer patients

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**Keywords:** patients, oncology, massage

### 1. Introduction

Massage therapy results in touch, it's goals are varied including: help the body relax, feel pleasure, to overcome physical problems, releasing emotional blocks, easing of pain, among others. This type of massage is a method of treatment used in curing a disorder. The massage can be applied for therapeutic purposes, serving to assist in restoring the balance of the various human structures. It is assumed also that its application triggers: mechanical effects, painkillers, psychological, structural and thermal, which are in line with the object of our work.

According Meleis (2012) the role of the nurse is interacting with humans in situations of health or disease, to improve the cultural and social context where they are inserted and suffering some kind of transition or are anticipating the same; nurse-patient interactions are organized around a purpose and the nurse uses some therapeutic actions to improve, bring or facilitate the health.

In a second phase we want with this work watching the effect of massage therapy on cancer patients, once we see the increased the number of cancer patients with psychological changes, including depression, which decreases the quality of life of these patients and the depressive symptoms can generate a bigger limitation than the cancer itself and which are the cause of 50% of suicides. In turn, the anxiety has prevalence among 18-35.1% (Castro, Scorza & Chem, 2011).

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Among cancer patients, more than 70% suffer from pain caused by disease and/or by handling. Patients in advanced stages of cancer describe the pain as moderate or severe in approximately 40 to 50%, and as in 25-30% of cases (Bair et al, 2003). In 2004, the Hospice and Palliative Nurse Association, has developed a document concerning the pain where quoted that this vital sign is one of the most feared by patients in end-of-life, increasing, therefore, the physiological stress and decreasing morbidity, adding the risk of thrombosis in these patients (Running, Shreffler-Grant & Andrews, 2008). The skills of nurses to provide care to a patient in chronic condition aimed at caring for the person with the disease, lessening the suffering, maximizing your well-being, comfort and quality of life (Ordem dos Enfermeiros, 2011).

Nurses, as crucial elements of a multidisciplinary team: actively involved in monitoring and pain relief, this requires the screening of the psychological, cognitive and emotional components of pain, including anxiety, depression and grief, previous experience with the pain, lack personal and individual and cultural and spiritual influences and prescription of non-pharmacological interventions in complementarily and not in replacement of pharmacological therapy knowing their indications, contraindications and side effects (Ordem dos Enfermeiros, 2008; Direção Geral de Saúde, 2001).

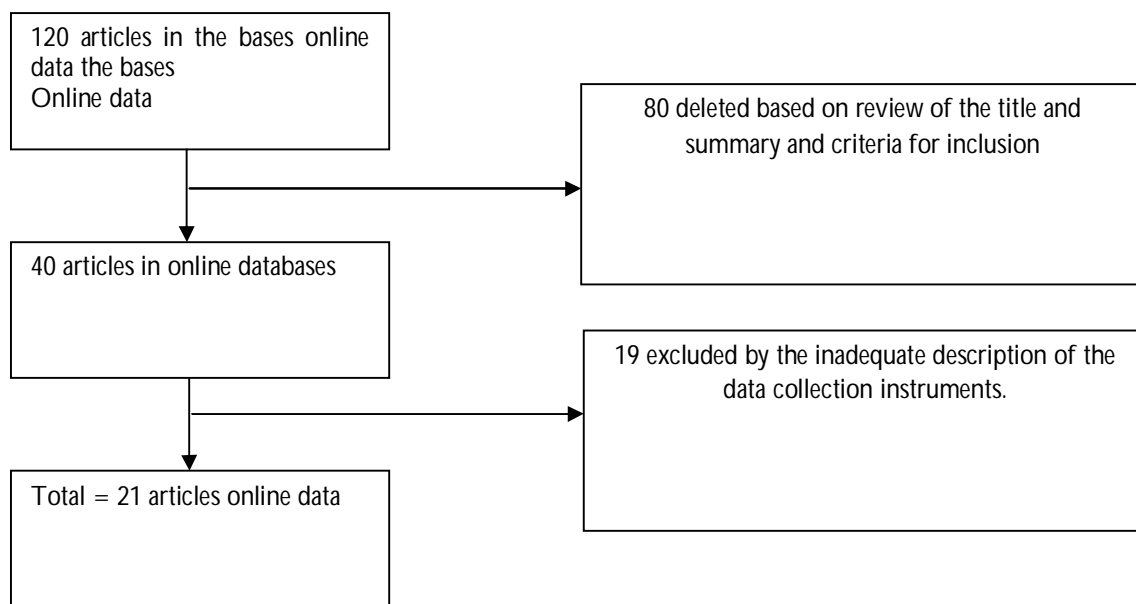
The massage can be curative, preventive, rehabilitation and relief of muscle tension. Patients who benefit from these interventions exhibit lower levels of anxiety and pain, having more control over treatment decisions (Almeida e Duarte, 2000).

Based on the assumption that massage is beneficial to improve the patient's health condition arises this literature review based on the question "what is the effect of massage therapy on cancer patients?" having as objective to conduct a literature review and analyze the studies conducted in this field, to better know the effects of this intervention of nursing, massage therapy in the cancer patient.

## **2. Methodology**

This research based on a systematic review of the literature with narrative summary. Was held exclusively in online databases, including EBSCO host (Medline, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, Psychology and Behavioral Sciences Collection, EJS E-Journals, British Nursing Index), SciELO and RCAAP (open access Scientific Repository of Portugal). As inclusion criteria we consider articles reported to the period between 1990 and 2015, in full-text and about massage therapy in adult patients with medical diagnosis of cancer. Were deleted articles that not reported the investigation around the theme under study and that do not present the predefined inclusion criteria?

The research resulted in 120 articles, being 50 articles on EBSCO host, 10 on Scielo and 60 in RCAAP, through the keywords for palliative care, oncology, cancer, massage therapy. Some articles were common to databases and after full thereof reading, 21 studies were selected for systematic review. The rest have been removed for not meeting the inclusion criteria (table 1).

**Table 1- Reduction scheme**

For an analysis and synthesis of selected articles was run a summary table contemplating various information extracted from them and then a descriptive analysis of the results.

### 3. Results

The synopsis of the articles and selected studies are described under paragraph 1, in accordance with the year of publication, study goals, type of study, methods, and results. In relation to the year of publication, has identified the prevalence of studies published in 2004, 2007 and 2008, with 3 articles each. 2 articles were published in the years 2000, 2003, and 2009, and the rest only obtained a publication for each date mentioned. It was observed that the intervention of massage therapy in oncology nursing professionals offers a limited number of researches, although with some concern over the past fifteen years.

Methodologically it found the majority of studies are the quantitative paradigm. Data collection instruments used, the most commonly used was the Visual analogue scale (EVA) for the assessment of symptoms, including pain, anxiety and nausea. We also observed the use of scale Brief Pain Index (BPI) for the assessment of pain and State-Trait Anxiety Inventory (STAI) for evaluation of anxiety. Only one article used mixed qualitative and quantitative methodology, combining the EVA and the interview as methods. Through the analysis of the results of the studies selected, we categorize them according to the focus of nursing - Classificação Internacional para a Prática de Enfermagem (CIPE), including pain, anxiety, depression, discomfort and suffering. Taking into account the main results enhance the massage therapy reduces: immediate levels of pain in cancer patients were male (Weinrich & Weinrich, 1990), pain levels of approximately 50% and 10% more improvement in sick bay than in the relocation and more durability (Cassileth & Vickers, 2004), the intensity of the pain between 60% (Ferrell-Torry & Glick, 1993) and 42% (Wilkie et al., 2000), as well as its average decrease of 5.50 to 3.83 (Toth et al., 2003) and 5.18 to 2.33 values (Adams, White & Beckett, 2010). Also through the qualitative results enhance improvements total pain (Adams et al., 2010). This procedure significantly reduces the levels of pain (Post-White, Kinney, Savik, Gau & Lerner, 2003; Currin & Meister, 2008; Young, 2008), either immediately (Grealish, Lomasney, & Whiteman, 2000; Kutner, Smith, Corbin, Kempfill, Benton & Mellis, 2008; Sui-Whi, et al., 2011), short-term (20/30 minutes) and long term (16/18 hours) (Sui-Whi, et al., 2011), although the most significant impact occurred in the first few minutes after the intervention (Jane et al., 2009).

Showed a decrease in analgesic used and consumption of rescue analgesics (Post-White, Kinney, Savik, Gau & Lerner, 2003; Deng & Cassileth, 2005), although consumption of morphine held during 10 days, although there was reduction in levels of pain after the 5th day (Ferreira & Lauretti, 2007). However, there is a study which does not have significant differences that confirm the decline in the use of painkillers (Ferreira & Lauretti, 2007; Kutner et al., 2008). Likewise was not shown significant changes in the long term the benefits of massage in terms of improvement, pain control (Ferreira & Lauretti, 2007; Kutner et al., 2008). These results corroborate a study, that although there was decrease of pain, the difference was not statistically significant (Deng & Cassileth, 2005).

As for anxiety, there was a decrease of anxiety with 24% (Ferrell-Torry & Glick, 1993) and 50% (Cassileth & Vickers, 2004), however only a study anxiety increased from 3.83 to 4.75 (Toth et al., 2003). Another studies showed a significant reduction in anxiety and depression after massage therapy (Post-White, Kinney, Savik, Gau & Lerner, 2003; Hernandez-Reif, Ironson, Field, Hurley, Katz & Diego, 2004; Cassileth & Vickers, 2004; Deng & Cassileth, 2005; Young, 2008; Jane et al., 2009).

Massage therapy has immediate effect in reducing depression and anxiety and also long-term depression (Soden, Vincent, Craske, 2004; Hernandez-Reif et al., 2004). However, there are studies in which there were no differences in short term between anxiety and depression (Ahles *et al.*, 1999; Billhult et al., 2007) or that there were no significant differences of depression and anxiety in the long term (Billhult, Bergbom & Stenes-Victorin, 2007). Another study confirms these results, noting that there were no significant differences in improvement of anxiety and depression, however, through structured interviews, the self-report of anxiety has improved for patients who received massage therapy. This relationship did not exist for the self-report of depression (Wilkinson *et al.*, 2007).

As far as the other variables studied, the massage contributes for the immediate reduction of nausea (Ahles *et al.*, 1999; Grealish, Lomasney, & Whiteman, 2000; Cassileth & Vickers, 2004; Billhult et al., 2007), although mention of the non-existence of significant differences of this long-term variable (Ahles *et al.*, 1999; Post-White et al., 2003). Refer to reduction of blood pressure, heart rate and breathing, indicating the relaxing action of massage therapy (Ferrell-Torry & Glick, 1993; Post-White et al., 2003; Deng & Cassileth, 2005). Complement this intervention increases the relaxation (Ferrell-Torry & Glick, 1993; Grealish, Lomasney, & Whiteman, 2000; Adams *et al.*, 2010), because they have immediate effect in depressed mood and anger (Hernandez-Reif, Ironson, Field, Hurley, Katz & Diego, 2004; Kutner et al., 2008). This intervention significantly decreased the incidence of muscular fatigue (Cassileth & Vickers, 2004; Deng & Cassileth, 2005; Currin & Meister, 2008), reduces stress (Cassileth & Vickers, 2004) and significantly improves the level of emotional well-being, relaxation and sleep patterns). Add a significant decrease in dimensions of suffering in pain, physical and emotional discomfort, as well as on fatigue after massage (Currin & Meister, 2008). The quality of life significantly improves (Ferreira e Lauretti, 2007), but in the long term there was no statistically significant differences that could corroborate the improvement of quality of life, stress and suffering (Kutner et al., 2008; Soden *et al.*, 2004).

**Table 2: General characterization of the articles reviewed**

Autor (es)	Date	Goal of the study	Type of study	Methods	Sample	Results
Weinrich, S. & Weinrich, M.	1990	Evaluate the effect of therapeutic massage in the levels of pain	experimental	Visual Analogue Scale (EVA).	28 cancer patients	-Decrease of immediate pain levels in males and only in the experimental group
Ferrell-Torry, A., & Glick, O.	1993	Evaluate the effectiveness of therapeutic massage on pain, anxiety, vital signs and relaxation	exploratory	analog for pain; - Spielberger State Anxiety Inventory;- TA, FC, FR	9 cancer patients	-Reduction of pain in 60% and anxiety X = 24; -Reduction of vital signs, indicating its relaxing action
Ahles, T., Tope, D., Pinkson, B., Walch, S., Hann, D., Whedon, M.	1999	Analyze the impact of therapeutic massage in psychological, physical and Psychophysiological measures	experimental	State-Trait Anxiety Inventory (STAI), Beck Depression Inventory (BDI), and Brief Profile of Mood States (POMS)	34 patients awaiting medulla ossea transplant	It Had immediate effect on stress reduction, nausea and anxiety No significant difference of these variables in the long run
Wilkie, D., Kampbell, J., Cutshall, S., Halabisky, H., Harmon, H., Johnson, L., et al.	2000	Evaluate the effect of therapeutic massage in the levels of pain	random study	EVA	29 cancer patients	-Decrease in pain intensity at 42% in the experimental group and 25% for the control group
Grealish, L., Lomasney, A., & Whiteman, B.	2000	Analyze the impact of massage therapy in pain, nausea and relaxation	randomized	EVA.	87 cancer patients	-Immediate Reduction of pain, nausea and relaxation
Toth, M., Kahn, J., Walton, T., Hrbek, A., Eisenberg, D., & Russell, P.	2003	Evaluate the effect of massage therapy on pain and anxiety	pilot study	Pain, anxiety (VAS) and quality of life (QOL)	26 cancer patients with metastases	-Decreased pain of 5.50 to 3.83 -Increasing the anxiety of 3.83 to 4.75
Post-White, J., Kinney, M. E., Savik, K., Gau, J. B., Wilcox, C., & Lerner, I.	2003	Determine whether the therapeutic massage and touch are more effective than the standard treatment in reducing symptoms of anxiety, mood disorders, pain, nausea and fatigue and increasing relaxation and satisfaction	randomized	BPI (Brief Pain Index); BNI (Brief Nausea Index); POMS (Profile of Mood States)	164 patients	-Reduced levels of anxiety, pain with decreased use of pain relievers, blood pressure, heart rate and breathing
Soden, K., Vincent, K., & Craske, S.	2004	Evaluate the effectiveness of the massage to decrease pain, anxiety, depression, sleep pattern and improve the quality of life	randomized	EVA, Verran and Snyder-Halpern (VSH) (scale of sleep), hospital anxiety and depression scale (HAD) and the list of Symptoms Rotterdam (RSCL).	42 cancer patients	No significant differences in terms of improvement in pain management, anxiety or quality of life. -Improved sleeping patterns -Reduction of depression in the massage group
Hernandez-Reif, M., Ironson, G., Field, T., Hurley, J., Katz, G., & Diego, M.	2004	Evaluate the effect of massage therapy on anxiety, mood swings and depression.	experimental	State Trait Anxiety Inventory (STAI); Profile of Mood States (POMS); symptom Checklist-90-R (SCL-90-R)	34 women with breast cancer	-Minimization in anxiety, depressed mood and anger in the short term; -Minimization, long-term, depression
Cassileth, B., & Vickers, A.	2004	Avaliar o efeito da massagem terapêutica na dor, fadiga, stress / ansiedade, náuseas, e depressão.	almost-experimental	EVA	1290 cancer patients	-Reduction of pain, fatigue, stress, anxiety, nausea and depression approximately 50% and in the same clinic improved 10% more than in the relocation and more durability.
Deng, G., & Cassileth, B.	2005	Evaluate the effect of massage therapy on the relief of symptoms	prospective	EVA	230 cancer patients	-Decrease in the incidence of muscle fatigue, anxiety, depression, rescue analgesic consumption and improved circulatory and respiratory pattern.

Ferreira, A., & Lauretti, G.	2007	Evaluate the effects of therapeutic massage in the control of pain	experimental	Pain (EAN) and quality of life (EORTC QLC-C30)	34 cancer patients	-Decrease in consumption of morphine
Wilkinson, S., Love, S., Wescombe, A., Gambles, M., Burgess, C., Cargill, A., et al.	2007	Assess the effectiveness of care with massage the management of anxiety and depression	randomized	subscale of State Anxiety Inventory (SAI), Center for Epidemiological Studies Depression (CES-D)	288 cancer patients	-There were no significant differences in improvement of anxiety and depression; -The anxiety improved self-report for patients who received massage therapy. This relationship did not exist for the self-report of depression.
Billhut, A., Bergbom, I., & Stenes-Victorin, E.	2007	Evaluate the effect of massage therapy on levels of nausea, anxiety and depression	randomized	Eva for nausea and for the remaining variables used the HADS	39 women with breast cancer doing chemotherapy	-Significant Reduction of nausea in the experimental group; -There was no differences between anxiety and depression in both groups.
Kutner, S., Smith, M., Corbin, L., Kempfill, I., Benton, K., & Mellis, K.	2008	Evaluate the effectiveness of the massage to decrease pain and distress of symptoms and improve quality of life  Evaluate the effectiveness of therapeutic massage in improving the quality of life, pain, stress, suffering	randomized	Memorial Pain Assessment Card; Brief Pain Inventory [BPI]; McGill Quality of Life Questionnaire; Memorial Symptom Assessment Scale	380 advanced cancer patients	-Immediate improvements in mood and in pain, with more relevance in the experimental group. -In the long term there was no statistical differences corroborate the improvement in quality of life, pain, stress, suffering and in decreasing the use of painkillers.
Currin, J.; Meister, E.	2008	Analyze the impact of massage therapy in pain, physical and emotional discomfort and fatigue	Not randomized		251 cancer patients	- Decrease of pain, discomfort, emotional and physical fatigue.
Young, C.	2008		experimental		28 terminal cancer patients	-Decreased pain and depression for the experimental group.
Downey, L., Diehr, P., Standish, L., Patrick, D., Kozak, L., Fisher, D., et al.	2009	Evaluate the effect of massage therapy on quality of life and pain	Randomized	MSAS (Memorial Symptom Assessment Scale)	167 patients	-Reduction of pain, however, was not statistically significant
Jane, S. W., Wilkie, D. J., Gallucci, B. B., Beaton, R. D., & Huang, H. Y.	2009	Evaluate the effectiveness of massage in reducing the levels of pain	Quasi-experimental	VAS (ansiedade) MSF_MPO (Short-Form Mc-Grill Pain Questionnaire); BPI (Brief Pain Inventory)	Patients with metastases osseas	Immediate effect $p = 0.001$ Medium effect $p < 0.000$ Long effect $p = 0.04$
Adams, R., White, B., & Beckett, C.	2010	Evaluate the effect of massage therapy on the levels of pain	qualitative and quantitative	EVA - interview	53 cancer patients	-The pain level decreases from 5.18 to 2.33 after the intervention of the massage. -Through the qualitative data describe these illustrate relevant improvements in terms of total pain, emotional well-being, relaxation and sleep patterns.
Sui-Whi, J., Wilkie, D., Gallucci, B., Beaton, R., & Huang, H.-Y.	2011	Evaluate the effectiveness of the massage of pain, anxiety and vital signs	Randomized	(BPI-VAS) pain, anxiety, sleep, relaxation and distress used VAS	36 Patients with metastases osseas	Effective in the short and in the long term with regard to pain and anxiety, There was no significant effects that could corroborate the changes in heart rate and mean arterial pressure.

#### 4. Discussion

The results described above emphasize the current need to increase the empirical evidence as well as raise awareness of the benefits associated with this type of interventions that are carried out by nursing staff-therapeutic massage, focusing particularly on the level of patients with oncological pathology.

However, most studies in this systematic review, enhance the effect of massage therapy on decreasing and the intensity of some outbreaks that cause discomfort such as: providing relaxation, pleasure, avoid physical problems, release emotional blocks, easing of pain, in this concrete case it is up to the nurse, trying to reduce the pain, anxiety, depression and discomfort.

Regarding to pain was found on the basis of the described studies, above that the results converge because massage therapy decreases pain levels in some so significantly (Weinrich & Weinrich, 1990; Ferrell-Torry & Glick, 1993; Grealish, Lomasney, & Whiteman, 2000; Wilkie et al., 2000; Toth et al., 2003; Post-White et al., 2003; Cassileth & Vickers, 2004; Currin & Meister, 2008; Young, 2008; Jane et al., 2009; Adams, White & Beckett, 2010; Sui-Whi, et al., 2011) and in others not (Deng & Cassileth, 2005; Ferreira & Lauretti, 2007; Kutner et al., 2008).

We also note that there is the possibility of certain studies support that massage therapy causes patients to reduce the use of painkillers and recourse to SOS (Post-White, Kinney, Savik, Gau & Lerner, 2003; Deng & Cassileth, 2005), However concluded that the differences are not so significant that (Ferreira & Lauretti, 2007; Kutner et al., 2008). In terms of anxiety and depression results were also contradictory, because some have revealed positive effects and that if they did feel in the short term (Post-White, Kinney, Savik, Gau & Lerner, 2003; Hernandez-Reif, Ironson, Field, Hurley, Katz & Diego, 2004; Cassileth & Vickers, 2004; Deng & Cassileth, 2005; Young, 2008; Jane et al., 2009), other long-term (Soden, Vincent, Craske, 2004; Hernandez-Reif et al., 2004) and others did not reveal any effects (Ahles *et al.*, 1999; Billhult et al., 2007).

There are also discrepancies about the other areas of nursing, with respect to the effectiveness of massage therapy, the level of nausea, as there is who consider that massage therapy has benefits (Ahles Ahles *et al.*, 1999; Grealish, Lomasney, & Whiteman, 2000; Cassileth & Vickers, 2004; Billhult et al., 2007) and some people don't mention them (Ahles *et al.*, 1999; Post-White et al., 2003).

However it was found that this intervention has obtained positive results, those results that are associated with decreased vital signs due to the relaxation promoted (-Torry & Glick, 1993; Post-White et al., 2003; Deng & Cassileth, 2005), in the depressed mood and anger (Hernandez-Reif, Ironson, Field, Hurley, Katz & Diego, 2004; Kutner et al., 2008), on muscle fatigue (Cassileth & Vickers, 2004; Deng & Cassileth, 2005; Currin & Meister, 2008), in stress (Cassileth & Vickers, 2004) and the level of emotional well-being and sleep patterns (Soden *et al.*, 2004; Adams *et al.*, 2010). There was no statistical differences that could corroborate the improvement in quality of life, stress and suffering (Soden *et al.*, 2004; Kutner *et al.*, 2008), justifying the interest of this study

## Conclusion

The analysis of the results, though in many cases were contradictory showing positive and negative or neutral data the purpose of our study, allowed us to conclude that massage therapy has beneficial effects in the short term the level of emotional well-being, physical and emotional discomfort, depressed mood, sleep patterns, stress and relaxation. The level of quality of life and suffering are contradictory reporting to future investigations continuity perspective. Through this study found the need to step up research in the field of nursing, broadening the field of nurses, leading to effective therapeutic interventions carried out by these professionals so that we can control and lessen the anxiety and depression. The nurse has an important role in front of the patients ' recovery, highlighting their feelings and contributing to improving the self-esteem of these. In this sphere the massage therapy intervention, because the constant contact of the nurse with the patient encourages the implementation of these actions in order to relieve pain, promote common assistance and improve the quality of life of the patient. It was noted also that the use of massage therapy is a reality in the universe of human health, nurses increasingly resorting to this type of interventions that had been used since a long time for the patient's comfort. Our role as researchers and researchers is to establish scientifically the effects and benefits of this intervention, in order to add them to the non-pharmacological therapies that are already incorporated in the current health care system.

It is well known that even with the lack of research in this area, the nurses in their day-to-day work already use some therapies for pain control, such as relaxation techniques, cutaneous stimulation (massage, heat/cold, Transcutaneous electrical stimulation), among others.

It was found that the relaxation promotes the reduction of these factors, especially the muscle tension, improving the pain, because muscle contraction contributes to exacerbation of pain, focusing on the nerve endings, especially in chronic pain. With the preparation of this study found that massage therapy decreases pain levels total, both short or long term, and that, according to some authors, decreased the use of analgesics and the consumption of painkillers. If it appears that with the implementation of the relaxation massage that she produces works in rebalancing of the body. However most complementary therapies, leads people to submit the relaxation response. Such techniques are related to existing interaction between pain, muscle tension and anxiety, because a patient with pain often presents feelings of apprehension and fear, leading to muscle tension which in turn worsens the pain.

It is important to note that the additional practices that can be used as non-pharmacological treatment of pain are two groups: techniques or methods carried out by nurses in the nursing consultation and that require expertise or professional qualification. The care factors derive from the humanistic expectation associated with the knowledge base of scientific and concept of reciprocity that should be between the nurse and the patient, so that the nursing staff a duty to be attentive to the complaints of the patient, because the body pain that is felt by this, should always be monitored so that your story is the most improved and real as possible as regards the evidence of pain and description of its intensity so that their combat intervention as efficiently as possible.

One of his contributions is the emphasis on care practice as interpersonal, based on factors that result in the satisfaction of human needs, promoting health and individual and family growth, as well as in understanding the environment as favouring personal development and integrated biophysical and human behavioural knowledge.

Finally, and still on the basis of the results obtained, we also suggest the development of more research in order to give greater consistency to empirical effects of massage intervention, cancer patients and so contribute to the practice of nursing excellence based on evidence.

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