



**COMPLEMENTARY ALTERNATIVE THERAPY METHODS  
USED IN PERSONS RECEIVING PALLIATIVE CARE TO  
ALLEVIATE PAIN**

**A Literature Review**

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## **ABSTRACT**

Palliative care aims for the relief of suffering, pain and other problems, physical, psychosocial and spiritual. Pain is the suffering that encompasses all of a person's physical, psychological, social, spiritual, and practical struggles. Nursing aims at promoting health and caring for the sick. Evidence based practice incorporates the use of the most relevant evidence coming from nurses and health care professionals, used on patient care decisions. Complementary alternative therapy integration to nursing has been linked to nursing competency and promotion of patient advocacy. Complementary alternative therapy methods have also been used in the reduction of pain, however, more initiatives, research and integration are needed.

The purpose of this study was to describe practices from complementary alternative therapy methods used in persons receiving palliative care to alleviate pain. Focusing on acupuncture, hypnosis and massage therapies.

A literature review of sixteen articles was carried out. Articles which met the inclusion criteria and were relevant to the literature review's aim were retrieved from CINAHL and PubMed databases. Fourteen articles were retrieved from the databases and two articles were found using a manual search. A systematic process of reviewing each article, thoroughly examining them as to analyze the method and results was undertaken.

Results were categorized in relation to pain effectiveness of complementary alternative therapies namely acupuncture hypnosis and massage. During acupuncture oncological pain, lumbar pain and chronic postoperative pain was reduced and an improvement in the control of the symptoms was observed, however, the reduction was transient. Post hypnotically there was significant pain reduction for diverse kinds of pain and patient groups. Such pain reduction had a lasting effect over time. Hypnosis treatment and medication interaction was not significant. Massage showed sizeable degree improvement across different pain levels, low, moderate, high, for a diverse group of patients of different age groups with greater pain intensity decrease to patients with cancer and chronic pain. The effects of massage on pain were sustained for a few hours.

In conclusion in relation to acupuncture there seems to have been some pain reduction, however, transient. Hypnosis in most cases has showed long lasting pain reduction results up to the point of analgesia for diverse kinds of pain and patient groups. Massage seemed to have had immediate pain reduction effects but mediocly lasting. Results are promising, however, current literature is scarce. Further research alongside with implementation of current and future evidence into proper practice is suggested.

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## **BACKGROUND**

### **Palliative care**

In accordance with the World Health Organization (WHO) palliative care is an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness through the prevention and relief of suffering by means of early identification and impeccable assessment of pain and other problems, physical, psychosocial and spiritual (Sepulveda, Marlin, Tokuo, & Ullrich, 2002). The need of palliative care is increasing for patients with cancer but there are also increasing demands for other persons suffering with chronic as well as life-threatening illnesses, where an early intervention before terminal stage is optimal (Worldwide Palliative Care Alliance [WPCA], 2014).

The term life threatening illness (LTI) refers to illness with significant threat to life (Sheilds et al., 2014). Examples of patients with long term illness that may require palliative care are Alzheimer's and other dementias, cancer, cardiovascular diseases (excluding sudden deaths), cirrhosis of the liver, chronic obstructive pulmonary disease, diabetes, HIV/AIDS, kidney failure, multiple sclerosis, Parkinson's disease, rheumatoid arthritis, drug-resistant tuberculosis (WPCA, 2014). Patients with a threatening illness such as chronic diseases and cancer may develop many problems and symptoms affecting their quality of life and therefore requiring palliative care (Stoppelenburg, Philipsen & Van der Heide, 2015).

Additionally, the European School of Oncology also states that, palliative care is the person-centred care focusing on physical and psychological symptoms, social and existential distress. Palliative care also takes into account the cultural needs in patients with limited prognosis, aiming at the optimization of the quality of life of patients, their families and/or friends (Ahmedzai et al, 2004).

According to a European association for Palliative Care (EAPC) ten core competencies in palliative care are described. The competencies are; 1- applying the basic concepts of palliative care in settings where patients and families are based, 2- enhancing physical comfort throughout patients' disease trajectories, 3- meeting patients' psychological needs, 4- social needs, and 5- spiritual needs, 6- responding to the needs of family carers in relation to short-, medium- and long-term patient care goals 7- addressing the challenges of clinical and ethical decision-making in palliative care, 8 -practicing comprehensive care co-ordination and interdisciplinary teamwork across all settings where palliative care is offered, 9- developing interpersonal and communication skills appropriate to palliative care and finally 10- practicing self-awareness and undergoing continuing professional development (Gamondi, Larkinand & Payne, 2013a, 2013b).

Additionally, Merriam Webster (2016) defines life threatening disease as capable of causing someone's death, WHO (2016) defines chronic diseases as those not passed from person to person, being of long duration and of a generally slow progression. The four main types of noncommunicable (chronic diseases) being cardiovascular

diseases, cancers, chronic respiratory diseases and diabetes. Also, long term illness is defined as a chronic disease having three months duration or longer (WHO, 2016).

## **Nursing**

In accordance with the International Council of Nurses, nursing incorporates independent and collaborative care of people of all ages, families, groups and communities, sick or well and in all different places. Nursing includes the promotion of health, prevention of illness, and the care of the sick, disabled and dying people. Promotion for a safe environment, research, participation in forming health policy. Key nursing aspects also include promoting health education and patient- health systems management (International Council of Nurses [ICN], 2013).

According to Meleis (2012), nursing is a discipline which shares both a perspective and domain. Perspective is how we see and interpret the world. Nursing also involves a therapeutic relationship with other human beings, professionals, practice in nursing and process of decision making (Lugton & McIntyre, 2005). Nurses are the ones who are the most frequently met with patients. Nurses have strong relationships to both patients and their families (Dobrina, Tenze & Palese, 2014). The role of palliative nursing is to assess the needs of patients' and families facing life-limiting illness and to plan, implement and evaluate appropriate interventions (Haraldsdottir, 2011).

Nursing is a caring discipline which can be both a science and an art. It can be defined as connecting with persons, grasping meaning of encounters with persons and conducting oneself morally (Meleis, 2012). Nursing is practice oriented where nurses provide care for persons with illness or who may possibly become ill and nurses as health professionals provide this care by seeking knowledge in relation to what they do (Meleis, 2012). The scope of nursing practice is constantly evolving based on recent research evidence. Therefore, nurses require initial, as well as lifelong training (ICN, 2013).

## Evidence Based Nursing

Evidence Based Practice (EBP) incorporates the use of the most relevant evidence used on patient care decisions, this evidence is often derived from research by nurses and other healthcare professionals (Polit & Beck, 2012). Nurses are members of the health care team (ICN, 2013). Employers, in addition to nurses themselves, must take responsibility to educate nurses with regards to new skills, knowledge and improve and maintain competencies (ICN, 2013). The nursing process has been discussed by developing many theories in relation to communication, interaction, and approach to practice (Meleis, 2012).

Evidence based medical practice is the ethical, explicit, and critically examined use of current best evidence in forming decisions about the care of individual patients. The

evidence based medical practice, integrates individual clinical expertise with the best available external clinical evidence from systematic research (Sackett, Rosenberg, Gray, Haynes & Richardson, 1996). Scope of nursing practice is related to tasks and functions, as well as knowledge, judgement, responsibility, professional accountability and skill with regards to interventions used to best care for individuals (ICN, 2013). Nursing therapeutics includes all nursing activities that can contribute to caring for nursing clients. Additionally the nurse may help the client through a transition in life such as a situational transition, health/illness transition or bereavement transition (Meleis, 2012). Nurses must be able to assess, plan, implement and evaluate how to best care for individuals (ICN, 2013). Holistic perspective in nursing means that patients are not only approached from their illness perspective in need of a treatment but that the individual as a human being in the totality of itself must be involved (Petiprin, 2015).

## **Pain**

As in the International Association for the Study of Pain, pain is a non-pleasant sensory and emotional/affective and cognitive experience that is linked to actual or possible tissue damage or is described in terms of such damage (International Association for the Study of Pain [IASP], 1979).

According to Dame Cicely Saunders, total pain is the suffering that encompasses all of a person's physical, psychological, social, spiritual, and practical struggles (Saunders, 1978). Additionally, McCaffery (1968) states that pain is what the person says it is and occurs when he or she says it does.

There are different kinds of pain. Nociceptive pain which is divided into somatic (i.e. affecting bones, joints, connective tissues, muscles) and visceral (i.e. affecting the internal organs such as heart, liver etc.). Somatic pain is characterized by aching, often constant may be dull or sharp, often worse with movement and well localized. Gnawing pain is also a type of somatic pain. Visceral pain is described as constant or crampy, aching, poorly localized and referred pain (Audette & Bailey, 2008). And there is also neuropathic pain characterized by burning, tingling constant, aching squeezing, itching, stabbing, shock-like, electric, shooting, hot burning pain and lancinating sensations (Audette & Bailey, 2008).

There is also chronic pain that has been acknowledged as pain that persists more than the average healing time and hence lacking the acute warning function of physiological nociception. In contrast acute pain is characterized as of 3 months duration. Usually pain is regarded as chronic when it lasts or recurs for more than 3 to 6 months. Chronic pain should be given greater attention as a global health priority because adequate pain treatment is a human right, and it is the duty of any health care system to provide it (Treede et al, 2015).

Pain assessment often focuses on location of pain, duration of pain, the lasting effect of the particular pain experienced in time, the intensity of the pain, a description of the quality-characteristics of the pain in question and any alleviating and/or

aggravating factors associated with the pain. Also several scales are in use in order to assist in the measurement of pain such as the Visual Analogue Scale (VAS) and the Present Pain Inventory (PPI) among others (Audette & Bailey, 2008).

In relation to standard medical treatment of pain WHO has developed a three-step "ladder" for cancer pain relief in adults. If pain occurs, there should be prompt oral administration of drugs in the following order: nonopioids (aspirin and paracetamol); then, as necessary, mild opioids (codeine); then strong opioids such as morphine, until the patient is free of pain. To calm fears and anxiety, additional drugs – “adjuvants” – should be used (Miller, 2004).

Physiological effects of pain include increased catabolic demands: poor wound healing, weakness, muscle breakdown, decreased limb movement and associated risks, respiratory problems, increased sodium and water retention, decreased gastrointestinal mobility, tachycardia and elevated blood pressure. Immunological effects of pain include a decrease in natural killer cell counts. Psychological effects of pain include negative emotions: anxiety, depression, sleep deprivation and existential suffering (Audette & Bailey, 2008).

Pain could mean to patients the following: poor prognosis or impending death, decreased autonomy, impaired physical and social functioning, decreased enjoyment and quality of life, challenges to a person’s dignity and threat of increased physical suffering (Audette & Bailey, 2008).

Patients have also reported increased pain as the main symptom negatively affecting their overall quality of life and lowered pain as leading to a better quality of life (Drageset, 2012). Also being physically comfortable and free from pain again positively affected quality of life on chronically ill patients (Strohbuecker et al, 2011).

### **Complementary Alternative Therapies (CAT)**

Complementary therapies that are used in conjunction or in place of conventional health care practices include a wide range of treatment modalities, for example such as herbal therapies, hands on massage healing etc. (College of Nurses of Ontario [CNO], 2014). According to the American Nurses Association (ANA), nurses are encouraged to become aware of their state’s position regarding complementary therapy and to facilitate the integration of complementary therapies into their work (Sparber, 2001). Additionally, in the UK more than five million people a year consult complementary practitioners. In the US an estimated fifteen billion dollars a year is spent on CAT. Acupuncture, aromatherapy, chiropractic, homeopathy, hypnotherapy, osteopathy and reflexology are the therapies most commonly provided in primary care. CAT is also increasingly integrated with nursing care and more evidence is being collected from other areas of practice as well (Kilbey, 2005) Nurses have a responsibility to deliver care based on current evidence and validated research (Nursing Midwifery Council [NMC], 2002).

In some articles the term Complementary Alternative Medicine is used in place of Complementary Therapies and in accordance with the United States Department of Health -National Center for Complementary and Alternative Integrative Health, these are defined as a group of different health care systems and products that are not currently seen as part of conventional medicine. These practices fall into the following five categories 1) alternative health systems, or complete systems of therapy and practice ; 2) mind-body techniques designed to enhance the mind's effect on bodily functions and symptoms; 3) biologically-based approaches, such as herbalism; 4) manipulative and body-based techniques , such as chiropractic and massage therapy; and 5) energy therapies. Acupuncture and Massage fall under the fourth category of manipulative and body-based techniques. Hypnosis falls under the second category of mind-body techniques designed to enhance the mind's effect on bodily functions and symptoms. (National Center for Complementary and Alternative Integrative Health [NCCAIH], 2015).

Nurses trained in CAT have a unique opportunity to provide services that facilitate wholeness by promoting holistic strategies for patients seeking to achieve a higher quality of life. (Fowler & Newton, 2006). In the US, CAT integration to nursing has been linked to nursing competency, promotion of patient advocacy, and guidelines have been reviewed for CAT integration from federal to state level (Parkman, 2002). In accordance to ANA, nurse educators have been considering the inclusion of complementary and alternative therapies in nursing curricula at the undergraduate, graduate and continuing education levels (Gaydos, 2001). The American Nurses Association Congress on Nursing Practice and Economics (CNPE) governing 2.9 million registered nurses through its 54 constituent member nurses associations has formally recognized holistic nursing as an official nursing specialty, with its own defined scope and standards of practice. Holistic nursing (HN) integrates complementary and alternative therapy approaches into clinical practice (ANA, 2008). However, although the federal government, academia, and the private sector have begun to offer some support for CAT education, and research, more initiatives and integration are needed (Ventola, 2010).

## **Acupuncture**

Acupuncture in accordance to Merriam – Webster (2016) medical dictionary is a Chinese originating practice of inserting fine needles through the skin at specific points with the focus to cure disease or relieve pain. However, the use of the term “acupuncture” can both refer to either a specific procedure involving acupuncture via the use of needles or a multicomponent treatment that also involves history taking, physical examination, diagnosis, and education. According to acupuncture theory, there are several hundred acupuncture points - meridians or channels that are arranged

along the body connecting these points as well as numerous other extra points that are not associated with a particular meridian (Langevin et al, 2011).

Additionally, acupressure may be used in place of acupuncture, particularly because patients can do it themselves. Acupressure works similarly to acupuncture; however rather than needles, finger-point pressure is placed on acupoints. In general, acupuncture is well tolerated and significant adverse effects are rare (O' Sullivan & Higginson 2010; MacPherson et al, 2002).

## **Hypnosis**

Hypnosis is an altered state of consciousness (trance state) achieved, that can be used for therapeutic purposes. It does not necessarily have to be a state of relaxation and it can also be both non - medically and naturally occurring (National School of Hypnosis and Psychotherapy [N-SHAP], 1994). A hypnotherapy session entails hypnotic induction, trance-deepening instructions and imagery therapy, hypnotic suggestions are designed to produce an overall physical relaxation (Whorwell, Prior & Faragher, 1984)

Experiencing a state of trance is something natural, and can even occur spontaneously such as driving on a familiar road every day or when in a boring situation (Zahourek, 2001) Previous studies of hypnotherapy have shown to alleviate anxiety, relieve stress, and strengthen self-confidence and self-esteem (Valente, 2003).

Hypnosis can be seen as a state of altered consciousness that can be artificially induced, in which there is attention focusing and marked responsiveness to suggestions and direct or indirect commands. Contrary to popular belief, hypnosis is not sleep but rather intense concentration. The degree one responds depends on many psychological and biological factors. The ability to respond to hypnosis varies from individual to individual; it tends to increase after successive trances (Miller-Keane, 2016).

Hypnosis in the nursing interventions classification, is defined as assisting a patient to induce an altered state of consciousness to create an accurate awareness and a directed focus experience (Miller-Keane, 2016). A nursing intervention is an action for which nurses are responsible that is aiming to benefit a patient or client (Miller-Keane, 2016). Hypnosis was accepted in 1958 by the American Medical Association as an adjunct treatment. Hypnosis is an effective modality in the health professions in a manner consistent with the core values of nursing as defined by the American Nurses Association (Mottorn, 2010).

## **Massage**

Massage according to Merriam – Webster (2016) is the act of rubbing or pressing someone's body in a manner that helps muscles to relax or used in order to reduce pain in muscles and joints.

There are numerous kinds of massage, two basic categories emerge: Relaxation massage – also referred to as Swedish massage; practiced in places like spas, resorts and wellness centers. Swedish massage techniques incorporate circular pressure applied by the hands and palms, firm kneading, percussion-like tapping, bending and stretching. Swedish massage can also be applied to patients in hospital settings (Northwestern Health Sciences University [NHSU], 2016).

Second basic category is that of rehabilitative massage – also referred to as deep tissue, therapeutic, medical and/or clinical massage is offered in clinics, hospitals and chiropractic offices. Rehabilitative massage is used for musculoskeletal rehabilitation and/or to reduce pain in persons who have lost a limb or suffered a stroke (NHSU, 2016).

Massage therapy is the most common and most utilized type of complementary therapy in Sweden utilizing touch and manual techniques, such as stroking and gentle pressure, in order to relax the body and help to restore health (Hanssen et al, 2005). Also as a complementary therapy, massage provides a cost-effective therapeutic tool with low risk if appropriately administered (Wright, 2004).

## **PROBLEM STATEMENT**

Palliative care aims for the relief of suffering, pain and other problems, physical, psychosocial and spiritual. Pain is the suffering that encompasses all of a person's physical, psychological, social, spiritual, and practical struggles. Pain is a central point of concern to the definition of palliative care. Pain is also associated with quality of life. Higher quality of life is also under the scope of palliative care. Nursing aims at promoting health and caring for the sick. Complementary alternative therapy trained Nurses have a unique opportunity to provide services that facilitate wholeness by promoting holistic strategies for patients seeking to achieve a higher quality of life. Holistic nursing which comprises of the integration of CAT into clinical practice has been recognized by the American Nurses Association as a legitimate nursing specialty, with its own defined scope and standards of practice. Complementary alternative therapy integration to nursing has been linked to nursing competency and promotion of patient advocacy. Complementary alternative therapy methods have also been used in the reduction of pain, however, more initiatives, research and integration are needed.

## **AIM**

To describe practices from complementary alternative therapy methods used in persons receiving palliative care to alleviate pain.

## **Research questions**

1. What evidence has been found for acupuncture as complementary alternative therapy method to relieve pain in persons receiving palliative care?
2. What evidence has been found for hypnosis as complementary alternative therapy method to relieve pain in persons receiving palliative care?
3. What evidence has been found for massage as complementary alternative therapy method to relieve pain in persons receiving palliative care?

## **METHOD**

### **Literature review**

In accordance with Garrard (2011), a literature review is an analysis of scientific work regarding a specific topic that commands from the reviewer to systematically and meticulously study each of the studies. To further evaluate the study purpose, evaluate the right choice and quality of the scientific methods, examine the analysis questions and answers set by the authors. Before making a summary of the findings across the studies, and writing an objective synthesis of the findings.

A literature review can be considered secondary source. Secondary sources are information from research prepared by someone who is not the original researcher. Nevertheless, the information that is used in the literature review should all be based on primary sources research written by the original researcher who conducted the study (Polit & Beck, 2012).

The purpose of a literature review is to improve a researcher's understanding of the study topic in question from various perspectives and this may well include the examination of different sources that discuss about the same study topic. (Polit & Beck, 2012). The articles themselves may be critically evaluated when conducting a literature review were their strengths and weaknesses may be found (Garrard, 2011). A literature review also provides an overview of a particular area of interest (Polit & Beck, 2012). A literature review was the chosen method as it was the means to gather current research to answer the aim. It explored the research area in detail, and identified gaps in the research, if there were any (Polit & Beck, 2012).

## **Data collection**

Data collection is a procedure used to gather information from or about a particular subject area in a study (Garrard, 2011). Primary source research reports will be used in the literature review. Primary data collection refers to original articles used only, written by the researchers who conducted the studies themselves (Polit & Beck, 2012). The method of data collection was presented in a database search process illustrating the date of database searches, the databases searched, the number of articles found, the number of article abstracts read, the number of articles read and the number of articles selected (Table 1). Only peer reviewed articles were included. A peer-reviewed paper is one that has undergone the careful and thorough examination of it by one or more scientific experts (Garrard, 2011).

The publisher MEDLINE database (PubMed) and the Cumulative Index to Nursing and Allied Health Literature (CINAHL) databases will be used for the search of at least 15 articles with the AIM of the study in mind. Primary data collection was achieved by means of systematic research of the PubMed and CINAHL databases. CINAHL is an important database that includes references to health journal, books, dissertations - all in the English language (Polit & Beck, 2012) Both Free text and MeSH (Medical Subject Headings) terms were employed for both PubMed and CINAHL searches. A manual search of recent review articles was also performed. A manual search of similar articles on PubMed and CINAHL databases was conducted as well. Because of the emphasis of literature reviews to search for available data in a systematic way, this two main databases were chosen because of the improvements in recent years of these databases' indexing by methodology (Polit & Beck, 2012). Database searches produced 236 article hits, of which 222 abstracts were reviewed out of which 136 articles were examined and out of which 14 articles were included. Six articles were found using manual search technique out of which two were selected. That gave 16 articles which were used for analysis in total. The MeSH term Complementary Therapies was used in PubMed. However, CINAHL forced the use of the term Alternative Therapies instead. The Cochrane database of systematic reviews was also researched; however, most relevant research was incomplete. Also as supported by Sutton, Duval, Tweedie, Abrams and Jones (2000) about half of the Cochrane meta-analyses appeared as subject to different levels of publication biases with a 20 percent strong indication of missing trials.

### Inclusion criteria

English language peer reviewed journals and articles published within the last 12 years (2004-2016) were included.

### Exclusion criteria

Articles published more than 12 years ago, grey literature – which are unpublished articles and research reports (Polit & Beck, 2012) and articles published in a non-English language were excluded.

Table 1: Database search process

Database: Date of Search	Key Words	Identified Articles (hits)	Abstracts Reviewed	Articles Examined	Articles Included
PubMed: 16-03-03	Hospice and Palliative Care Nursing OR Palliative Care OR Terminal Care OR Hospice Care OR Terminally ill OR Hospices AND Complementary Therapies AND Pain OR Pain Management OR Pain Measurement	156	148	76	6
CINAHL: 16-03-05	Hospice and Palliative Care Nursing OR Terminal Care OR Palliative Care OR Hospice Care OR Terminally ill Patients OR Hospice Patients OR Hospices AND Alternative Therapies AND Pain OR Pain Management	80	74	60	8

Manual Search 16-03-13 – 16-03-15 Articles examined: 06, articles included: 2

## **Data analysis**

The selected for literature review were thoroughly analyzed for their strength and weaknesses in terms of methodology, ethics-conflicting interests, patronage, adequacy in meeting the aim of the study (Machi & McEvoy, 2012).

“The purpose of the data analysis was to organize, provide structure to, and elicit meaning from data” (Polit & Beck, 2012, p. 556). The articles were individually analyzed for their strength and weaknesses by examining their descriptive statistical data and their relevance in addressing our research topic (Garrard, 2011).

The articles selected were categorized in a Matrix. The Matrix method was a process and structure of reviewing the literature systematically (Garrard, 2011). The Matrix was an instrument assisting in describing the selected articles in a systematic and organized form, providing information on each article’s purpose, variables, participants, and results (Garrard, 2011). The modified matrix for reporting categorization, evaluation and quality assessment of academic studies from Garrard (2011) was used for analyzing the articles selected for literature review. At least 16 articles were used in the literature review (Appendix II). Thematic analysis was undertaken to pinpoint, irregularities, inconsistencies and/or patterns of any kind among the articles (Polit & Beck, 2012).

The process of coding was not trying to adhere to the individual authors’ concepts as coding was data driven (i.e. actually based on the data results of the articles themselves) (Braun & Clarke, 2006). In this study, data were specifically collected and categorized based on the results of the articles themselves. The themes were based on the research questions regarding acupuncture, hypnosis and massage as complementary alternative therapies used to relieve pain in persons receiving palliative care having adhered to “The purpose of data analysis was to organize, provide structure to, and elicit meaning from data” (Polit & Beck, 2012, p. 556).

To make it easier for reference purposes for the reader when the constructing of the categorization matrix and the organization of the documents was done in accordance to their alphabetical first author name appearing order. The three level scale of high (I), moderate (II) and low (III) quality rate (Appendix I) was also used when assessing the articles for selection as in the guide of academic articles and studies regarding quality in both quantitative and qualitative research, modified - Berg, Dencker & Skärsäter (1999), Willman, Stoltz & Bahtsevani (2006).

## **Ethical considerations**

When it comes to ethical considerations data is not to be misrepresented intentionally or otherwise, stated in a misinformative way and the researcher will present it with the results of the articles used in an objective way and with no changes made to the facts and results present. In a literature review, results that both support and oppose the author’s views should be presented (Polit & Beck, 2012).

Research misconduct should not be taking place and that would refer to “fabrication, falsification and plagiarism”. Plagiarism is a kind of misconduct and intentional representation of another person’s own work (Wager & Wiffen, 2011).

Also the principle of non-maleficence should be examined when looking through the articles in the use of the methods reviewed especially in conditions that these techniques may be contra indicated as for our intention is to do no harm. The principle of beneficence, which essentially is to do good need to be taken also in consideration alongside with respect for human dignity and these must be found in the articles selected (Polit & Beck, 2012).

All the above also agrees with the Declaration of Helsinki that points out that it is the responsibility of physicians who partake in medical research to protect the life, health, dignity, integrity, representation, right to self-determination, privacy, and confidentiality of personal information of research participants. Even the thorough understanding of scientific literature is mandatory before approaching persons in need of health care (WMA, 2008). Hence, the author’s very own evaluation of the articles will be taking the above into careful consideration in the overall evaluation process of the articles selected.

## **RESULTS**

Just before proceeding with the results section the author wished to be noted that during the course of this study a number of interesting incidental findings were discovered. Hence, in the interests of advancing science and improving the quality of life for those concerned these findings are presented in Appendix III-Incidental findings results section.

### **Pain reduction and acupuncture**

Oncological pain, lumbar pain and chronic postoperative pain was reduced and an improvement in the control of the symptoms was presented by this population as measured on the VAS scale (Alessandro et al, 2013). Pain, improved during acupuncture, but the benefit was transient, Edmonton Symptom Assessment Scale (ESAS) scores were used (Lim, Wong & Aung, 2011).

Contrary to the above, however, no significant difference in median pain scores was observed in patients treated at acupuncture site (L14) versus the sham site. Still the patients in the sham site acupressure arm were more likely to experience severe pain than those in the LI4 acupressure arm (The VAS scale was used) (Bao et al, 2011).

Incidentally, follow-up scores for nurse-led supportive care continued to decline, whereas acupuncture scores increased but declined again nearer the final week of the study (Lim et al, 2011).

## **Pain reduction and hypnosis**

McGill total pain scores were calculated. The VAS and PPI scores when analyzed in the same manner as the total pain score, they showed an identical pattern. The analyses showed that the changes in pain ratings did not depend on using a particular pain rating method (Dorfman et al, 2013).

Neuropathic pain analyses in HIV patients showed that there was a reduction in pain following hypnosis and that the reduction continued unchanged for at least 7 weeks (Dorfman et al, 2013). Likewise burn trauma patients' hypnotherapy group had a significantly lower pain rating than the control group at the 5th session. Although the hypnotherapy group did not report a significant reduction in pain from baseline to the 3rd session there was a significant reduction in pain from baseline to the 5th session. This reduction was not seen in the control group (Shakibaei, Harandi, Gholamrezaei, Samoei & Salehi, 2010). Also, pain patients from rural areas reported a significant reduction in pain levels post hypnotically (Thornberry, Schaeffer, Wright, Haley & Kirsh, 2007). Additionally in a case study the absence of pain was confirmed and the patient reported that she was happy the procedure had been undertaken without the need for any anaesthetic drugs. She was not amnesic and had a clear memory of all surgical phases (Facco, Pasquali, Zanette & Casiglia, 2013).

When hypnosis was compared to massage changes between sessions in the average pain measured by the Brief Pain Inventory (BPI) there was a non-significant decrease of mean pain intensity in the hypnosis group over time compared to the massage group. Pain was decreased in both groups over time. There was no statistically significant difference in the amount of pain reduction achieved in the hypnosis and massage groups. Both groups demonstrated a statistically significant decrease in pain intensity after the sessions. However, hypnosis had a more prolonged analgesic effect compared to massage throughout the hospital stay. No difference in pain intensity and mood between the hypnosis and massage groups was found at 12 weeks post discharge (Ardigo et al, 2016).

Contrary to the above, in cancer patients undergoing bone marrow procedures VAS scores were slightly lower in for the hypnosis group; however the difference was not statistically significant (Snow et al, 2012). Although, hypnosis resulted in a reduction in the affective component of pain, that is, anxiety, there was no statistically significant reduction in the sensory component of pain, however (Snow et al, 2012). Interestingly enough, Dorfman et al (2013) in relation to pain found the exact reverse finding - that when the sensory and affective sub scores of the McGill were separately analyzed. That the sensory sub scores showed a main effect of hypnosis treatment, however, the affective scores were only marginally significant. There was a reduction not only in participants' pain levels, but also an improvement in their quality of life (Dorfman et al, 2013).

Additionally, hypnosis treatment and medication interaction was not significant. These analyses show that there were similar benefits to hypnosis for participants on and off pain medications (Dorfman et al, 2013). Statistics failed to reveal any systematic relationship between the amount of practice of self-hypnosis used in between standard hypnosis training sessions and reduction in total pain scores (Dorfman et al, 2013).

## **Pain reduction and massage**

On average, from the start of a therapy session to after the end of the session, the hospice patients reported a 52 percent reduction in pain scores. A sizeable degree of improvement was achieved across all three pain levels (low, moderate, high) (Polubinski & West, 2005). The primary benefits of massage of the children and adolescents that were categorized as physical. Physical benefits included feeling relaxed, feeling better overall, and having less pain and nausea (Post-White et al, 2009). Pain intensity decreased and pain unpleasantness decreased in veterans receiving palliative care resulting in immediate and sustained change in pain (Mitchinson, Fletcher, Kim, Montagnini & Hinshaw, 2014). Both massage and simple touch were associated with statistically significant improvements in immediate and sustained pain outcome (Kutner et al, 2008).

Patients with chronic pain showed a greater decrease in pain intensity and pain unpleasantness compared to patients without chronic pain, and similarly, patients with cancer had a greater decrease in pain intensity and unpleasantness compared to patients without cancer (Mitchinson et al, 2014). Although not statistically significant, more isolated patients experienced greater improvements in pain intensity and pain unpleasantness compared to patients who had someone involved in their care (Mitchinson et al, 2014).

As for the sustainability of the outcomes all nine post intervention measures of PPI (Present Pain Intensity) -VAS and anxiety -VAS over a 2.5-hour period were statistically reduced as compared with the baseline. Analysis revealed statistically significant time effects on PPI -VAS and anxiety -VAS across time. As shown PPI-VAS declined immediately and consistently for 20 minutes, then gradually began to return 30 minutes but stayed below the baseline throughout the 16- to 18-hour period. Overall, the mean number of pain locations at 16 to 18 hours was statistically decreased from baseline. The mean total score of the quality of pain at 16 to 18 hours approached statistical difference from baseline. The pain descriptor of gnawing pain was statistically reduced and hot-burning pain was trending toward a reduction (Sui-Whi, Wilkie, Gallucci, Beaton & Huang, 2009).

Additionally, pain decreased for metastatic cancer patients more after massage than after the No Touch intervention group the difference, however, was not statistically significant (Toth et al, 2013). Both groups demonstrated statistically, but not clinically, significant sustained improvements in pain (Kutner et al, 2008). For each research group, there were no statistically significant changes. Neither were there any significant changes in pain scores pre- and post-massage. There was a statistically significant reduction in pain VAS scores in both the aromatherapy and combined massage groups after the second treatment. No significant changes in the pain descriptors scale were noted, however, and no obvious cumulative analgesic effect over time was apparent (Soden, Vincentb, Craske & Ashley, 2004).

## **DISCUSSION**

### **Method discussion**

The aim of this study was to describe practices from complementary alternative therapy methods used in persons receiving palliative care to alleviate pain. The research questions further focused on relevant evidence concerning acupuncture, hypnosis and massage therapies in persons receiving palliative care to alleviate pain respectively with regards to the aim.

Bearing in mind that the goal of evidence based practice is to provide a scientific basis for patient's care using the highest level of evidence possible (Rice, 2008) the author thus inspired used a systematic method (Garrard, 2011) of data collection with the aim of strengthening this particular literature review to mind. The author also kept an organized record of saved searches in CINAHL and PubMed of articles reviewed and examined. Steps were reported in such a way as to insure in the best way possible that this literature review can be both traced back to its components and also be reproduced. All articles were read and re read in a systematic process of reading each article selecting them in accordance with relevance to aim, academic quality and organizing them accordingly.

A weakness of this literature review was that articles within the past 12 years instead of the preferable 5 year span were utilized as there was not enough peer reviewed articles relevant to the aim of the review. Articles from eight different countries with very diverse cultures were included: one from Brazil one from Switzerland nine from the United States of America one from Italy one from Canada one from Iran one from the United Kingdom and one from Taiwan. Diverse as these articles might be from a different cultural perspective they, however, still cannot be representative of a global perspective.

Three research questions were specifically chosen to be utilized in relation to addressing the aim of this review concerning the areas of acupuncture, hypnosis and massage. That was done purposefully as for the selection of enough appropriate quality articles to become possible and to also at the same time to accordingly and specifically focus the scope of complimentary alternative therapies that otherwise would have included a multitude of different methods as well.

The use of the boolean operator "OR" instead of "AND" as in between "hospice and palliative care nursing" and "palliative care" in the database research process, for example means that the search result may have excluded other articles on nursing. Also by conducting a literature review there is often the possibility that the most recent research articles might have not been yet included.

Articles on chronic pain where included (Ardigo et al, 2016) as this falls within the scope of palliative care which includes the care of people from the beginning of the disease trajectory which could last more than 3-6 months which is the standard definition of chronic pain (Treede et al, 2015).

Articles with opposing and non-significant measurements (Bao et al, 2011) were also included. As non-significant findings are findings in themselves. And also it is the author's ethical responsibility to objectively report all related findings which ever they may be.

The method of data analysis used is also one of the study's strengths as the careful reading and rereading of the articles brought forth links to different definitions. These would include those of pain management, the different definitions of pain IASP, (1979); Saunders (1978) & McCaffery (1968) and the palliative care core competencies as defined by the European Association of Palliative Care (which include meetings patients' physical, psychological, social and spiritual needs) (Gamondi et al, 2013).

Different aspects of pain were touched upon the articles by different groups such as cancer patients (Bao et al, 2011) and HIV patients (Dorfman et al, 2013) for example. That was partially done because of the limited number of suitable academic articles that the author could draw from. Secondly palliative care did start with a main focus on cancer patients early on but now it evolved into incorporating other terminal conditions as well. Hence, this can be also argued not as a limitation but also as a strength. The same can be argued for chronic pain also mentioned earlier as in also incorporates the changes nurses , persons and health professionals experience as the disease trajectory unfolds.

In the article by (Polubinski & West, 2005) "benefits are looked into" which as a phrasing can be argued as possibly biasing the results. However, they do quantify by the words "possible" and "limitations". It is more likely that the motivation of the available volunteer therapist is more likely to reflect more heavily on the actual bearings of the statistical results.

Which brings the author to the point why the author also included a case study article that the author gave a quality III marking as a counter measure solely on these grounds (i.e. being a case study and therefore subject to generalizability concerns) The article by (Facco et al, 2013) was incorporated simply to illustrate the importance of the individual therapist, the approach utilized and the needs and particular make-up of the patient involved in a rather dynamic interaction that can be both partially mathematically quantifiable but at the same time much transcending straight forward statistical methods in addressing the totality of persons' interactions and needs. Which the author has found lacking in systematic reviews such as the ones as in the Cochrane foundation for instance.

In articles such as Post-White et al (2009) the sample is small as to produce generalizable results and new studies should be made. However, again this article was included in relation to the scarcity of relevant up to standard academic literature and it is also often the case that in palliative care a high attrition rate often due to patients' deaths is to be expected. For the same reasons related to sample and attrition rates and lack of readily generalizable results thereof the quality rating of the articles was reduced from quality I to quality II article were appropriate.

The article by Shakibaei et al (2010) concern pain in trauma burn patients and it was included for the reasons mentioned above. Interestingly enough it gives different aspects of pain that would agree with Dame Cicely Saunders in her definition of pain. Similarly the article on pain management by Snow et al (2012) try to argue a sensory definition component of a patient's pain experience may be of lesser importance than an affective one when trying to understand the lack of statistical significance in their study. They also call on the need for further studies that needed to be made. Interestingly enough in Soden et al (2004) the statistical significance was lost over time which is interesting in its self and will be further discussed in the results discussion section.

Another criticism could be as in the Thornberry et al (2007) article that mentions rural patients that the author is using very diverse populations in linking that to palliative care. However, this is particular article for instance is taken from *Palliative and Supportive Care* journal and it deals with chronic pain patients so the same arguments as before on chronic pain and palliative care disease trajectory were utilized. Diverse populations can also be used in examining the effectiveness on hypnosis in many different aspects of pain and how that is a main concern in palliative care and nursing evidence based interactions overall. Also, Thornberry et al (2007) conducted a chart review of n = 300 pain patients from the Pain Treatment Center of the Bluegrass who had undergone hypnosis for their pain concerns and that were directly related to the aim of this study.

The author has personally observed all ethical considerations in the objective reporting of all findings in this literature review. The articles used in an objective way and with no changes made to the facts and results present. Results that both supported and opposed the author's views were presented as ethically required (Polit & Beck, 2012). All articles included were also examined from bias on behalf of their authors. All articles also were ethically approved by their respective ethical approval committees. No adverse effects were reported as result in any of the studies on the patient population. Additionally in accordance with the Declaration of Helsinki that points out that it is the responsibility of physicians who partake in medical research to protect the life, health, dignity, integrity, right to self-determination, privacy, and confidentiality of personal information of research participants (WMA, 2008) the author has found that no ethical risks were taken in carrying out any of the studies examined.

## **Results discussion**

All of the results found in this literature review are of importance to nurses especially after CAT implementation into nursing is linked to nursing competencies and holistic nursing being an established separate and legitimate specialty for registered nurses. Complementary alternative therapy practicing nurses are also said to promote patients advocacy which reinforces communication of information concerning patient rights, privacy, confidentiality, representation, right to self-determination, support and education of patients, and health care professionals, and in summary the general promotion of ethical principles in relation to patients in relation to the totality of their being. Nurses also aim at promoting the care for the sick, caring for patients and

health care professionals alike in relation to pain management of different palliative care groups and their perspective individual members. Complementary alternative therapies sometimes are used in conjunction or in place of conventional nursing and health care practices. Complementary alternative therapies have also been used in the reduction of pain.

### Pain reduction and acupuncture

Oncological pain, lumbar pain and chronic postoperative pain was reduced and an improvement in the control of the symptoms was presented by this population as measured on the VAS scale (Alessandro et al, 2013). This, however, is a finding reported only with regards to the particular time that the study was performed and no data was gathered in relation to any lasting pain management effects of acupuncture as an alternative complementary therapy. Pain, improved during acupuncture, but the benefit was transient, ESAS scores were used (Lim et al, 2011). In this study it is clear that pain improved only during acupuncture with no lasting effects on pain. It would be interesting for further research to investigate whether this short lived finding maybe associated to other factors as for instance paying attention to the patient itself brings an effect or even the possibility of a placebo effect especially when compared with simple touch were associated were statistically significant improvements in immediate and sustained pain outcome were observed (Kutner et al, 2008).

In a study trying to improve the research design by utilizing a comparison between actual and sham acupuncture sites a non-significant difference in median pain scores was observed in patients treated at acupuncture site (L14) versus the sham site. Still the patients in the sham site acupressure arm were more likely to experience severe pain than those in the L14 acupressure arm the VAS scale was used (Bao et al, 2011). However, this study used magnetic and electric suction caps. Firstly, assuming that the acupuncturist was skilled and experienced enough as to be finding the actual correct sites on people with different body sizes, a suction neurologically is not interpreted by the brain in the same way as the pressure exuded by a needle. Also in traditional Taoist theory it is not simply about magnetic and electric forces but rather about magnetic and electromagnetic ones. Last but not least as per definition of acupuncture - acupressure works similarly to acupuncture (O' Sullivan & Higgonson 2010; MacPherson et al, 2002). Hence, suction cups by definition do not constitute acupuncture treatment.

Incidentally, follow-up scores for nurse-led supportive care continued to decline, whereas acupuncture scores increased but declined again nearer the final week of the study (Lim et al, 2011). And maybe this has to do with introducing novelty in relation to hope, boredom, fatigue and a number of other variables that need to be investigated further. Also, nursing is a caring discipline and it can be defined as connecting with persons and grasping meaning of encounters with persons (Meleis, 2012) which probably gives an indication of some sort of lack in properly connecting with the patients and what is actually meaningful for them amidst the nurse-led supportive care and its results as reported by Lim et al (2011).

Interestingly, enough some other symptoms seemed to cluster with pain such as nausea and loss of appetite where their improvements were also only transient (Lim et al, 2011). Whereas in other symptoms such a reduction for shortness of breath,

tiredness, depression, anxiety and lack of well-being that again clustered together acupuncture seemed to be having a better effect over time (Lim et al, 2011). Those groupings and the effectiveness of their reduction over time should be studied and analyzed extensively on their own right. Additionally that symptom being at times clustered with pain and others not, is an extra reason why the author included Appendix III-Incidental findings results section.

In general, acupuncture is well tolerated and significant adverse effects are rare (O'Sullivan et al, 2002). This makes acupuncture a rather safe avenue to explore for patients as it is in accord with the ethical principles of beneficence and non-maleficence (Polit & Beck, 2012). Additionally, palliative care aims at the optimization of the quality of life of patients their families and/or friends (Ahmedzai et al, 2004). Also, patients have reported increased pain as the major symptom negatively affecting their overall quality of life and lowered pain as leading an increase of overall quality of life (Drageset, 2012). Hence, effective and sustained - time wise effects on pain management should be also aimed for in future research and practice.

Therefore, it would be desirable for further and better designed studies to be undertaken. Moreover, also due to evidence based practice incorporating the use of the most relevant evidence used on patient care decisions and this evidence being often derived from research by nurses and other healthcare professionals (Polit & Beck, 2012) and especially in relation to the areas that the results are significant and lasting where acupuncture for instance can also be safely implemented.

### Pain reduction and hypnosis

McGill total pain scores were calculated The VAS and PPI scores when analyzed in the same manner as the total pain score, they show the identical pattern. These analyses show that the changes in pain ratings do not depend on using a particular pain rating method (Dorfman et al, 2013). That is a bold statement which but an interesting one none the less for someone who would like to pursue research comparing the effectiveness of different measuring instruments.

Neuropathic pain analyses for HIV patients show that there was a reduction in pain following hypnosis and that the reduction continued unchanged for at least 7 weeks (Dorfman et al, 2013). Likewise burn trauma patients' hypnotherapy group had a significantly lower pain rating than the control group at the 5th session. Although the hypnotherapy group did not report a significant reduction in pain from baseline to the 3rd session there was a significant reduction in pain from baseline to the 5th session. This reduction was not seen in the control group (Shakibaei et al, 2010). Also, pain patients from rural areas reported a significant reduction in pain levels post hypnotically (Thornberry et al, 2007). In contrast to the acupuncture groups above the hypnosis groups seem to have had a more lasting effect on lowering pain in very diverse groups and different kinds of pain.

Additionally, hypnosis treatment and medication interaction was not significant. These analyses show that there were similar benefits to hypnosis for participants on and off pain medications (Dorfman et al, 2013). Given that a hypnotic state is something natural (Zahourek, 2001) it comes as no surprise to the author that there was no hypnosis medication interaction. Interestingly enough in a case study the absence of pain was confirmed and patient reported that she was happy the procedure had been undertaken without the need for any anaesthetic drugs. She was not amnesic and had a clear memory of all surgical phases (Facco et al, 2013). Which also gives an indication of the effectiveness of hypnosis both independently and even without the use of any medication. For ethical purposes, however, the discontinuation of any medication is not propagated by the author as it could jeopardize patients' health (WMA, 2008). On the same note hypnosis is effective in the health professions in a way consistent with the core values of nursing as defined by the American Nurses Association (Mottern, 2010). Hence, both on ethical and effectiveness standards hypnosis could be further explored and implemented on a much wider scale in nursing.

Contrary to the above, in cancer patients undergoing bone marrow procedures VAS scores were slightly lower in for the hypnosis group; however the difference was not statistically significant (Snow et al, 2012). Also, hypnosis resulted in a reduction in the affective component of pain, that is, anxiety, there was no statistically significant reduction in the sensory component of pain (Snow et al, 2012).

However, Dorfman et all (2013) in relation to pain found the exact reverse finding - that when the sensory and affective sub scores of the McGill were separately analyzed. That the sensory sub scores showed a main effect of hypnosis treatment on the other hand, the affective scores were only marginally significant.

These findings can be very well attributed to different procedures being undertaken and the context-environment in which they are taking place given that hypnotic states can also incorporate operant and classical conditioning learning components that could produce different results on their own. Also several perception and cognition theories can come into play.

When hypnosis was compared to massage changes between sessions in the average pain measured by the BPI (Brief Pain Inventory) there was a non-significant decrease of mean pain intensity in the hypnosis group over time compared to the massage group. Pain decreased in both groups over time. There was no difference between both groups (hypnosis compared to massage). Both groups demonstrated a statistically significant decrease in pain intensity after the sessions. However, Hypnosis had a more prolonged analgesic effect compared to massage throughout the hospital stay (Ardigo et al, 2016). Again hypnosis appears as having a lasting analgesic effect on pain and it would have been interesting for further studies to examine compare and contrast both the pain lowering and analgesic effects of hypnosis on different kinds of pain. Hypnosis can also be studied in pain management were different directions may be given in the changing of the perception approach exploration understanding and handling of pain in its totality of its defined and undefined aspects, given that according to McCaffery (1968) pain is what the person states it is.

Interestingly enough hypnosis would fall under the mind-body techniques designed to enhance the mind's effect on bodily functions and symptoms category (NCCAIH, 2015). Which makes an interesting observation is that in this case the mind is called to affect the body and at the same time the mind in its brain capacity to be exact has different areas, parts and internal organs of the body represented on itself. Whereas at the same time there is also a mental abstract representation of those very same areas by the mind on a mental level as well (and mapped parts of the brain also). That alone no one has even conceptualized yet let alone studied before. This observation alone brings the author to observe an oxymoron between the practicing self-awareness and undergoing continuing professional development as advocated by EAPC (Gamondi et al, 2013) and the actual striving to practically apply (or the luck thereof) of what international organizations so fondly enjoy putting on paper.

### Pain reduction and massage

On average, from the start of a therapy session to after the end of the session, the hospice patients reported a 52 percent reduction in pain scores. A sizeable degree of improvement was achieved across all three pain levels (low, moderate, high) (Polubinski & West, 2005). The primary benefits of massage of the children and adolescents that were categorized as physical. Physical benefits included feeling relaxed, feeling better overall, and having less pain and nausea (Post-White et al, 2009). These findings are in agreement with the Merriam Merriam – Webster (2016) definition of massage as the act of rubbing or pressing someone's body in order to reduce pain. This bodily emphasis is also reflected on the physical benefits reflected by the above researchers indicating an effect of the body to emotional states and pain.

Pain intensity decreased and pain unpleasantness decreased in veterans receiving palliative care resulting in immediate and sustained change in pain (Mitchinson et al, 2014). Both massage and simple touch were associated with statistically significant improvements in immediate and sustained pain outcome (Kutner et al, 2008). Again the aspects of sustained outcomes in relation to time resurface. The kind of massage techniques utilized in most articles resembled or utilized Swedish massage techniques mostly offered to terminally ill and hospitalized patients (NHSU, 2016).

As for the sustainability of the outcomes all nine post intervention measures of PPI (Present Pain Intensity) -VAS and anxiety -VAS over a 2.5-hour period were statistically reduced as compared with the baseline. Statistically significant time effects on PPI -VAS and anxiety -VAS across time were observed. As shown PPI-VAS declined immediately and consistently for 20 minutes, then gradually began to return 30 minutes but stayed below the baseline throughout the 16- to 18-hour period. Overall, the mean number of pain locations at 16 to 18 hours was statistically decreased from baseline. The mean total score of the quality of pain at 16 to 18 hours approached statistical difference from baseline. The pain descriptor of gnawing pain was statistically reduced and hot-burning pain was trending toward a reduction (Sui-Whi et al, 2009). There is some sustainability of results for a few hours compared to the non-lasting effects on pain by means of acupuncture, however, by comparison hypnosis has more lasting effects time wise. More studies would be required in relation to different kinds of pain. Optimally in palliative care we should be striving

for lasting results throughout the disease trajectory in chronic and life threatening illnesses (WPCA, 2014).

Additionally, pain decreased for metastatic cancer patients more after massage than after the No Touch intervention the difference, however, was not statistically significant (Toth et al, 2013). Both groups demonstrated statistically, but not clinically, significant sustained improvements in pain (Kutner et al, 2008). Which is in its self-interesting as statistics although are used to provide us for a reliable and objective base against which to base our findings, however, in this case and maybe others' that does not necessarily translate in the desired effect clinically observed in the people that we caring for and if it goes unnoticed it can even lead us to misleading results and implementation of those when trying to utilize evidence based practice.

Palliative care aims for the relief of suffering, pain and other problems, physical, psychosocial and spiritual (WPCA, 2014). And indeed acupuncture hypnosis and massage address in varying degrees of effectiveness both pain and other symptoms (for more details of other symptoms please cross-reference with Appendix III-Incidental findings results section). Clinical significance of massage for other symptoms included a 52 percent reduction in pain scores and patients having experienced similar improvements in anxiety and peacefulness (Polubinski & West, 2005).

There was a reduction through the use of hypnosis not only in participants' pain levels, but also an improvement in their quality of life, and in participants with elevated levels of depression-related symptoms, a reduction in these symptoms (Dorfman et al, 2013). That was also in agreement from the basic research on pain and its definitions were increased pain was the main symptom associated with the overall quality of life (Drageset, 2012).

Pain is the suffering that encompasses all of a person's physical, psychological, social, spiritual, and practical struggles. And that again is both directly addressed in relation to pain and the number of other symptoms just mentioned above Nursing aims at promoting health and caring for the sick. Evidence based practice incorporates the use of the most relevant evidence coming from nurses and health care professionals, used on patient care decisions. However, as a reminder caution should be exercised as already mentioned as to what is statistically and what is clinically significant in trying to improve our service both within palliative care specifically and nursing in general.

Also, according to Petiprin (2015) holistic nursing entails patients not being only approached from their illness perspective in need of a treatment. In fact the individual as a human being in the totality of itself must be involved. To which the author agrees with, as the symptoms themselves clustering with other symptoms begs for a more inclusive approach of their study in the same way that the whole human being must be holistically examined paying attention to all of his/her needs inclusive.

Nursing is a caring discipline which is also related to the art of nursing. It can be defined as connecting with persons (Meleis, 2012). Touch is a means of connecting and is such a recurrent theme in the nursing science as touch carries kinesthetic information in hypnotherapy-neurolingistic programming terms, body language

information in communication patterns terms and in the traditional Chinese medicine (includes acupuncture) Chi- warmth. It is interesting to observe that even in guilt ridden societies, where physical contact would be a taboo subject, even in death suddenly the very restoration of human beings connection with their physical aspect of the totality of their being, ameliorates part of their suffering. That should be a lesson to be studied and learned by all concerned.

## **Conclusion**

In relation to acupuncture there seems to have been some pain reduction, however, transient. Hypnosis in most cases has showed long lasting pain reduction results up to the point of analgesia for diverse kinds of pain and patient groups. Massage seemed to have had immediate pain reduction effects but mediocresly lasting. Results are promising, however, current literature is scarce. Author would suggest further research alongside with implementation of current and future evidence into proper practice.

## **Clinical implications**

There is accumulating evidence of cost-effectiveness and feasible cost savings in at least a few clinical populations with regards to complementary and alternative therapies (Herman, Poindexter, Witt, & Eisenberg, 2012). Hence complementary and alternative therapies can be a feasible approach both in relation to available evidence but also in relation to being realistically employable.

In accordance to Kilbey (2005) Complementary alternative therapies reportedly assist with side-effects of widely administered medical treatments for nausea, constipation, pain, insomnia, edema, muscular pains and tension; Create feelings of well-being, enabling patients to feel better; Promote touch, which is important with respect to the isolation feelings experienced by cancer patients for example; Contrary to other treatments received they provide a positive experience; They are also stress and tension relieving and emotionally supporting; They reduce anxiety by means of a relaxing effect on patients; They promote confidence and assist with altered body image; Provide individual attention ; Empower people and promote self-help.

Nurses, nurse leaders and other health professionals working within palliative care such as medical doctors and psychologists can utilize the knowledge presented as to better manage the symptom of pain to palliative care individuals alongside with an array of other symptoms that complementary and alternative therapies can address. The benefits of such techniques can also be used on the health professionals themselves as well as means of avoiding work related stress, pain and increase work ability for some nursing personnel for instance (Airosa et al, 2011). This knowledge and consecutive skills can also be used with regards to facing fear and superstition when looking at research for the results that it actually yields. Therefore complementary and alternative therapies can also serve as an inspiration to new kind of research and continuous professional and personal development by extension towards a holistic and high quality of care service towards individual patients.

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## APPENDIX I

Classification guide of academic articles and studies regarding quality in both quantitative and qualitative research, modified Berg, Dencker & Skärsäter (1999), Willman, Stoltz & Bahtsevani (2006).

CLASSIFICATION	GRADING OF ACADEMIC QUALITY		
	I = High quality	II = moderate	III = Low quality
<b>Randomised controlled trial (RCT)</b> is a prospective study that entails a comparison between a control group and one or more experiment groups.	Large, well planned and well executed multicenter study with an adequate description of protocol, material and methods including treatment techniques. The number of patients/participants is large enough to answer the research question. Adequate statistical methods.	*	Randomized study with few patients/participants and/or too many partial studies with insufficient statistical strength. Insufficient number of patients/participants, inadequately described method or large attrition rate (participant dropout rate).
<b>Clinical controlled trial (CCT)</b> is a prospective study that entails a comparison between a control group and one or more experiment groups. Not randomized.	Large, well planned and well executed study with an adequate description of protocol, material and methods including treatment techniques. The number of patients/participants is large enough to answer the research question. Adequate statistical methods	*	Limited number of patients/participants, method inadequately described, faults or lacking in protocol and insufficient statistical strength.
<b>Non- controlled study (P)</b> is a prospective study but without a control group.	Well defined research questions, sufficient number of patients/participants and adequate	*	Limited number of patients/participants, method inadequately described, faults or lacking in protocol and insufficient statistical strength.

	statistical methods.		
<b>Retrospective study (R)</b> is an analysis of a historical material that is related to something that already happened, for example patient charts.	Number or patients/participants sufficient to answer the research question. Well planned and well executed study with an adequate description of protocol, material and methods.	*	Limited number of patients/participants, method inadequately described, faults or lacking in protocol and insufficient statistical strength.
<b>Qualitative study (Q)</b> often is an investigation where the aim is to study phenomena or interpret meaning, perceptions and experiences from the perspectives of the participants. The aim can also be to develop concepts, theories and models.	Context clearly described. Selection of participants motivated. Clearly described selection criteria, data collection, transcription process and method of analysis. Credibility and reliability described. Relation between data and interpretation evident. Critique of method.	*	Poorly formulated research questions. Patient/participant group inadequately described. Method and analysis not sufficiently described. Presentation of results incomplete.

\* Some of the criteria for level I are not met, but the academic quality is deemed higher than level III – Low quality.

## APPENDIX II

Assessment of articles (Garrard, 2011)

Author(s) Year Country	Title	Aim	Method	Sample	Results	Type Quality
Alessandro.E., Brito.C., Cecatto.R., Saul.M., Atta.J.A., Lin.C.A. 2013. Brazil.	Evaluation of acupuncture for cancer symptoms in a cancer institute in Brazil.	This paper describes the population given acupuncture treatment and the effects of the intervention on symptom management.	A higher VAS score means a higher perception of symptom intensity. Baseline and final symptom intensity was recorded using a visual analogue score (VAS) ranging from 0 to 10 cm, with a higher score meaning higher symptom intensity.	n=206 (23)	All patients were undergoing mainstream drug treatment for pain and/or chemo toxicity. This first year showed an average improvement of 63.6% in relief of symptom intensity.	P II
Ardigo.S., Herrmann.F.R., Moret.V., Laurence Déramé.L., Giannelli. S., Gold. G., Pautex. S. 2016. Switzerland.	Hypnosis can reduce pain in hospitalized older patients: a randomized controlled study.	The main objective of this randomized controlled study was to measure how hypnosis can improve the management of chronic pain in older hospitalized patients. Our hypothesis was that hypnosis would be feasible and effective in decreasing pain intensity in this population. We further hypothesized that the ability to perform self hypnosis would provide a prolonged decrease in pain intensity measured	A single center randomized controlled trial using a two arm design (hypnosis versus massage) to assess the immediate and prolonged effect of hypnosis on the management of chronic pain in elderly patients. The study setting was a large geriatric hospital (300 beds).	n=53 (19)	Pain intensity decreased significantly in both groups (hypnosis, massage) after each session. Greater sustained pain decrease in the hypnosis group only.	RCT II

		3 months after hospital discharge compared to massage.				
Bao. T., Ye.X., Skinner.J., Cao.B., Fisher. J., Nesbit.S., Grossman.S. 2011 USA.	The Analgesic Effect of Magnetic Acupressure in Cancer Patients Undergoing Bone Marrow Aspiration and Biopsy: A Randomized, Blinded, Controlled Trial.	To evaluate the efficacy of magnetic acupressure in reducing pain in cancer patients undergoing BMAB.	Cancer patients without previous acupuncture or acupressure experience were stratified by the number of prior BMAB and randomized to having magnetic acupressure delivered to either the large intestine 4 (LI4) acupoint or a sham site. The primary study endpoint was the patient's pain intensity rating during the procedure using a visual analogue scale (VAS).	n=78 (1)	Although its use did not significantly reduce median pain scores in patients undergoing BMAB, it does appear to reduce the proportion of patients with severe pain associated with this invasive procedure.	RCT I
Dorfman.D., George.C.M., Schnur.J., Simpson.D.M, Davidson.G, Montgomery.G. 2013 USA.	Hypnosis for Treatment of HIV Neuropathic Pain: A Preliminary Report.	The purpose of the present study was to determine whether hypnosis could be a useful intervention in the management of painful HIV-DSP.	Participants were 36 volunteers with HIV-DSP who received three weekly training sessions in self-hypnosis. Participants were followed for pain and its sequelae for 7 weeks prior to the intervention, and for 7 weeks post intervention.	n=36 (0)	Mean SFMPQ total pain scores were reduced from 17.8 to 13.2 ( $F[1, 35] = 16.06, P < 0.001$ ). The reductions were stable throughout the 7-week post intervention period. At exit, 26 out of 36 (72%) had improved pain scores. Of the 26 who improved, mean pain reduction was 44%. Improvement was found irrespective of whether or not participants were taking pain medications.	P I
Facco.E., Pasquali. S., Zanette. G., Casiglia. E. 2013 Italy.	Hypnosis as sole anaesthesia for skin tumor removal in a patient with multiple chemical sensitivity.	Hypnosis when chemical anaesthesia is high risk.	Case report.	n=1 (0)	She confirmed the absence of pain and reported that she was happy the procedure had been undertaken without the need for any anaesthetic drugs. She was not amnesic and had a clear memory of all surgical phases.	CR III
Kutner. J. S.,	Massage Therapy	To evaluate the efficacy	Multisite, randomized clinical	n= 380	Both groups massage and control	RCT

Smith. M.C., Corbin. L.,Hemphill. L., Benton. K., Mellis. B.K., Beaty,B., Felton,S., Yamashita, T.E., Bryant,L.L. Fairclough, D. L., 2008, USA.	versus Simple Touch to Improve Pain and Mood in Patients with Advanced Cancer.	of massage for decreasing pain and symptom distress and improving quality of life among persons with advanced cancer.	trial.	(32)	demonstrated immediate improvement in pain and mood. Massage was superior for both immediate pain and mood. No between-group mean differences occurred over time in sustained pain.	II
Lim,J.T.W., Wong,E.T., Aung,S.K.H., 2011, Canada.	Is there a role for acupuncture in the symptom management of patients receiving palliative care for cancer? A pilot study of 20 patients comparing acupuncture with nurse-led supportive care.	A pilot study to document changes in symptoms after acupuncture or nurse-led supportive care in patients with incurable cancer.	Patients receiving palliative care with estimated survival of at least 3 months were screened with the Edmonton Symptom Assessment System (ESAS). Patients (n=20) with significant symptoms were randomized to receive weekly acupuncture or nurse-led supportive care for 4 weeks.	n=170 screened out of which n=42 were eligible out of whom n=20 gave consent (2)	Total symptom scores were reduced by an average of 22% after each acupuncture visit and by 14% after each supportive care visit. During the 6 weeks of follow-up, mean total scores for nurse-led supportive care continued to decline, whereas acupuncture scores increased but declined again by week 6. Compared with baseline, ESAS scores at the end of the follow-up period were reduced by 19% for the acupuncture arm and 26% for nurse-led supportive care.	RCT I
Mitchinson,A., Fletche,C.E., Kim,H.M., Montagnini,M., Hinshaw.D.B., 2014, USA.	Integrating Massage Therapy Within the Palliative Care of Veterans With Advanced Illnesses: An Outcome Study.	To describe the integration of massage therapy into a palliative care service and to examine the relationship between massage and symptoms in patients with advanced illnesses.	Between April 1, 2009, and July 31, 2010, received massage at the VA Ann Arbor Health Care System. Data on pain, anxiety, dyspnea, relaxation, and inner peace were collected pre and post massage. Diagnoses, chronic pain, and social support were also abstracted. Analysis of covariance was used to	n=153 (0)	Pain intensity decreased by 1.65 (0-10 scale, P < .001), Massage is a useful tool for improving symptom management and reducing suffering in palliative care patients.	P I

			examine changes over time.			
Polubinski,J.P., West,L., 2005, USA.	Implementation of a Massage Therapy Program in the Home Hospice Setting.	We examine the changes in patients' self-ratings of pain, anxiety, and peacefulness. Pain and anxiety were chosen because these symptoms are frequently experienced by hospice patients and have been frequently measured and reported in massage therapy studies Peacefulness was added as a complement to the other scales.	Intervention Patients and families were informed of the volunteer massage therapy program at The Hospice of the Florida Suncoast, including program objectives, limitations, and potential benefits. Massage was provided based on assessed patient need and availability of the volunteer therapist.	n=32 (0)	On average, from the start of a therapy session to after the end of the session, the patients reported a 52% reduction in pain scores and experienced similar improvements in anxiety and peacefulness.	P II
Post-White,J., Fitzgerald,M., Savik,K., Hooke,M.C., Hannahan,A.B., Sencer,S.F., 2009, USA.	Massage Therapy for Children With Cancer.	This pilot study aimed to determine the feasibility of providing massage to children with cancer to reduce symptoms in children and anxiety in parents.	In the 2-period crossover design, children and their parent were randomized to the massage therapy (MT) or quiet-time (QT) group and then crossed over to the other condition at the same point in their next identical chemotherapy cycle.	n=25 (2)	Physical benefits included feeling relaxed, feeling better overall, and having less pain (n = 5) and nausea (n = 1) Massage might not be the most effective intervention to reduce pain and nausea in children. In our preliminary feasibility study, we found that children who were in pain or had significant nausea did not want to receive massage.	RCT I
Shakibaei,F., Harandi,A.A. , Gholamrezaei,A., Samoei.R., Salehi.P., 2010, Iran.	Hypnotherapy in Management of Pain and Re- experiencing of Trauma in Burn Patients.	This study examined the effects of hypnosis on both pain and re- experiencing of trauma.	Forty-four patients hospitalized for burn care were randomly assigned to either hypnotherapy or a control group.	n=44 (0)	There was a significant reduction in trauma re-experience scores in the hypnotherapy group but not the control group. The findings support the efficacy of hypnotherapy in the management of both pain and re- experiencing of trauma in burn patients.	RCT I
Snow,A.,	A Randomized	Pain and anxiety are	the authors randomly assigned	n=80	The hypnosis intervention reduced the	RCT

Dorfman,D., Warbet,R., Cammarata,M., Eisenman,S., Zilberfein,F., Isola,L., Navada.S., 2012, USA.	Trial of Hypnosis for Relief of Pain and Anxiety in Adult Cancer Patients Undergoing Bone Marrow Procedures.	closely associated with bone marrow aspirates and biopsies. To determine whether hypnosis administered concurrently with the procedure can ameliorate these morbidities.	80 cancer patients undergoing bone marrow aspirates and biopsies to either hypnosis or standard of care.	(0)	anxiety associated with procedure, but the difference in pain scores between the two groups was not statistically significant. The authors conclude that brief hypnosis concurrently administered reduces patient anxiety during bone marrow aspirates and biopsies but may not adequately control pain. The authors explain this latter finding as indicating that the sensory component of a patient's pain experience may be of lesser importance than the affective component.	I
Soden,K., Vincentb,K., Craske, S., Ashley,S., 2004, UK.	A randomized controlled trial of aromatherapy massage in a hospice setting.	This study was designed to compare the effects of four week courses of aromatherapy massage and massage alone on physical and psychological symptoms in patients with advanced cancer.	Forty-two patients were randomly allocated to receive weekly massages with lavender essential oil and an inert carrier oil (aromatherapy group), an inert carrier oil only (massage group) or no intervention.	n=42 (0)	We were unable to demonstrate any significant long-term benefits of aromatherapy or massage in terms of improving pain control, anxiety or quality of life. However, sleep scores improved significantly in both the massage and the combined massage (aromatherapy and massage) groups. There were also statistically significant reductions in depression scores in the massage group.	RCT II
Sui-Whi,J., Wilkie,D.J., Gallucci,B.B., Beaton,R.D, Huang,H-Y. 2009, Taiwan.	Effects of a Full-Body Massage on Pain Intensity, Anxiety, and Physiological Relaxation in Taiwanese Patients with Metastatic Bone Pain: A Pilot Study.	The purpose of this study was to describe the feasibility of MTand to examine the effects of MTOn present pain intensity (PPI), anxiety, and physiological relaxation over a 16- to 18-hour period in 30 Taiwanese cancer	This pilot study was a quasi-experimental, one-group, pretest-post-test design with repeated measures.	n=36 (0)	Overall, the mean number of pain locations at 16 to 18 hours was statistically decreased from baseline. The mean total score of the quality of pain at 16 to 18 hours approached statistical difference from baseline. The pain descriptor of gnawing pain was statistically reduced and hot-burning pain was trending toward a reduction. Both the present pain and	P I

		patients with bone metastases.			worst pain were statistically different. Least pain and acceptable level of pain intensity, however, were statistically nonsignificant.	
Thornberry,T., Schaeffer,J., Wright,P.D., Haley,M.C., Kirsh,K.L., 2007, USA.	An exploration of the utility of hypnosis in pain management among rural pain patients.	Hypnosis is an adjunctive, noninvasive treatment with few side effects that can be useful in the management of chronic pain.	We conducted a chart review of 300 pain patients from the Pain Treatment Center of the Bluegrass who had undergone hypnosis for their pain concerns.	n=300 (0)	Hypnosis appears to be a viable adjunct for pain management patients, including those from rural and relatively disadvantaged backgrounds. Prospective trials are needed to examine the utility of this modality in end-of-life and palliative care patients.	R I
Toth,M., Marcantonio,E.R, Davis,R.B., Walton,T., Kahn,J.R., Phillips,R.S., 2013, USA.	Massage Therapy for Patients with Metastatic Cancer:A Pilot Randomized Controlled Trial.	The study objectives were to determine the feasibility and effects of providing therapeutic massage at home for patients with metastatic cancer.	Patients were randomized to receive either massage or, as controls, a notouch intervention by professional massage therapists or usual care.	n=42 (3)	Providing therapeutic massage improves the quality of life at the end of life for patients and may be associated with further beneficial effects, such as improvement in pain and sleep quality.	RCT II

## APPENDIX III

### Incidental findings results section

Incidental findings	Acupuncture	Hypnosis	Massage
Results	<p>Clinical significance for other symptoms such as chemo toxicity related nausea/vomiting and xerostomia were also reduced (Alessandro et al, 2013).</p> <p>There was a smaller reduction for nausea, depression, anxiety and loss of appetite with drowsiness initially increasing and then decreasing with each subsequent visit. Also reduction for shortness of breath, tiredness, depression, anxiety and lack of well-being. Interestingly enough as in pain the reduction for nausea and loss of appetite improvement was also only transient (Lim, Wong &amp; Aung, 2011).</p>	<p>Hypnosis had a positive effect on mood; this was not the case for the massage group, however (Ardigo et al, 2016).</p> <p>Clinical significance for other symptoms reduction in anxiety was substantially greater in the hypnosis group than in the standard of care group (Snow et al, 2012). Again contrary to the above Dorfman et al (2013) found that there were no measurable changes in anxiety level associated with the treatment. In agreement to Dorfman et al (2013) there was no effect on anxiety (Ardigo et al, 2016).</p> <p>Hospital and Anxiety Depression Scale (HADS) Scores of depression improved significantly over the time in the hypnosis group (Ardigo et al, 2016). Participants with elevated levels of depression-related symptoms, a reduction in these symptoms (Dorfman et al, 2013).</p> <p>Results also showed positive changes in four areas: physical functioning, role functioning, pain-related well-being, and perceived change in health status. No interactions amongst those areas were statistically significant, also (Dorfman et al, 2013). Using the Perceived Disability Scale (PDS)-specifically, those deemed to be poor responders to hypnosis reported</p>	<p>Clinical significance of massage for other symptoms included a 52 percent reduction in pain scores and patients having experienced similar improvements in anxiety and peacefulness (Polubinski &amp; West, 2005). Mental effects were reported as having “a sense of calmness,” taking a “weight off your shoulders,” being able to “release my thoughts,” “feeling relaxed,” and “taking stress away from thinking about the treatment (Post-White et al, 2009). The largest change occurred for relaxation improvement (Mitchinson et al,2014) One notable finding was that patients without a caregiver involved in their care had a greater decrease in anxiety compared to those who did not (Mitchinson et, 2014). Both massage and simple touch were associated with statistically significant immediate improvements in mood (Kutner et al, 2008). Anxiety-VAS declined immediately after the intervention and consistently declined for 15 minutes with the nadir at 15minutes, then gradually began to return at 20 minutes but not regressing to the baseline throughout the 16-to 18-hour period (Sui-Whi. et al, 2009).</p>

greater levels of perceived dysfunction in their sexual functioning compared to the good responders. No other variables, including depression, approached significance. Patients also reported an average of 49.8 percent improvement in their relaxation levels post hypnosis (Thornberry et al, 2007).

Additionally,” Emotional effects included “feeling special,” “being in a better mood,” and “enjoying the moment.” The majority of children reported that the benefits lasted several hours or for the rest of the day. Both the younger children and the adolescents found the most benefit from less stress and anxiety (Post-White et al, 2009). Among the secondary outcomes, there was significant improvement in quality of life of the patients in the massage group compared to the control groups at 1 week (Toth et al, 2013). Massage was statistically superior to simple touch immediately after treatments Both groups demonstrated statistically significant improvements in physical and emotional symptom distress and quality of life across weekly assessments (Kutner et al, 2008). With regards to sleep quality there was a statistically significant improvement in the Verran and Snyder-Halpern (VSH) sleep scale scores post-treatment for patients in the massage and combined massage groups. Patients in the aromatherapy group also tended to sleep better post massage but this did not reach statistical significance (Soden et al, 2004). Contrary to the above there was no significant change in anxiety and alertness after either massage treatment or the no touch intervention (Toth et al, 2013).