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Review Article

The Effect of Massage Therapy on Psychological Outcomes in Patients after Cardiac Surgery: A Mini Review

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Abstract

Introduction: Due to the reduction of side effect costs, nowadays, non-pharmacological approaches such as massage therapy have been put to center attention by therapists. As a structured review, this research was undertaken with the objective of determining the effects of massage therapy on the patients' outcomes (pain, stress, anxiety and depression) occurring after heart surgeries.

Materials and Methods: In this Literature review, Searching was done by using keywords such as Massage Therapy, CABG, Patient Outcomes (Pain, Stress, Anxiety and Depression) at Academic databases such as PubMed, CINAHL/Nursing, Science Direct, and Scopus, during the years 2004 to 2014. Next, based on the relevance of the articles to the subject of our study and the opinions from the research team, relevant and appropriate articles were selected and analyzed contextually.

Results: Among 174 papers, 8 fully related papers to the subject of the research were ultimately selected. Massage therapy can lead to a reduction of pain, stress and anxiety in patients, as well as the reduction of need for sedatives in patients in line for heart surgeries.

Conclusion: Massage therapy is a safe and effective therapy in reducing and recovering psychological outcomes and pain in patients undergoing heart surgeries. Hence, the use of such non pharmacological approaches can be appealing to Clinical caregivers.

Keywords: Massage Therapy, CABG, Patient Outcomes, Stress, Anxiety, Pain, depression

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Introduction

Cardiovascular diseases are the primary cause of death in the modern world and are responsible for the death of 16 million people per year (1). Nearly 52 percent of mortalities in US and 48 percent of Europe are related to these kinds of diseases. There are different methods to cure cardiovascular diseases. One of the most prevalent medical interventions in these cases, particularly in case of ischemic and valve issues, is surgery (2). As a treatment method, surgeries will often lead to longer lives and better life quality in these patients (3). For prevalence, in only the US, more than 500,000 cases of heart surgeries take place (4). Although surgeries are the first step in achieving health, but in the recovery phase, many patients deal with physical and mental challenges. Pain, stress, lack of self-confidence, fear of death, physical inabilities, depression and anxieties are some of the cases that patients would confront before or after surgeries (5-7). Depending on the process of surgery, patients would more or less experience cutaneous and visceral pains in the chest and pain in the vein removal area (8, 9). On the other hand, appropriate treatment processes and mental stress management in early recovery phases after the surgery can lead to higher levels of satisfaction from the surgery, reduction of side effects and less time of hospitalization (10). Generally, to soften these outcomes, medical approaches are employed which would usually come along with side effects such as Nausea, Vertigo, drowsiness, Hypotension, Constipation and respiratory depression (11, 12). Hence, in this regard, paying attention to non-pharmacological approaches has become widespread. Owing to the side effects of drugs and variance in affectivity, the implementation of non-pharmacological approaches alongside the medical approaches in order to reduce negative outcomes has been recommended frequently in recent years (13). Hence considering modern non-pharmacological with less costs and side effects is looking increasingly essential. One of the methods proposed in this regard is complementary therapy which has introduced distinct approaches to responding mental and physical needs of patients after heart surgery (14). As a modern approach in complementary therapy, massage therapy has had a significant contribution to the alleviation of these needs (4). Massage is in fact the manipulation of superficial and soft tissue, to create physiological effects on the different systems of the body such as Cardiovascular, Musculoskeletal and neurological systems (12). Depending on the type of execution, massage could have different results. For example, the theory of Gate Control has been proposed, i.e. by applying pressure during massage, the signal will be transported faster in competition with the sense of pain in neurological routes, therefore blocking those routes and preventing the sense of pain from transportation. By stimulating Parasympathetic and containing Sympathetic, a sense of tranquility is transferred (15). In respect to biological effects, massage causes an increase in the levels of secretion of Beta-endorphins, serotonin, dopamine and natural killer cells and decreases the secretion of cortisol. Decreases in heart rates and blood pressure are

also reported as the effects of massage (16, 17). By triggering the parasympathetic system, due to the inversion of response in some of the physiological systems in reaction to stress, massage facilitates the return to normal conditions following emergencies. Stimulating, the parasympathetic will have effects such as lowering heart beats, slowing respiration and consequently creates a sense of tranquility (12). Reduction in the levels of pain, stress and anxiety has also been reported in some patients (18). Considering the results mentioned above, massage therapy is assumed to be one of the most popular and prevalent methods in complementary therapy which is non-aggressive, relatively cheap, and easy to use (10, 11). There have also been contradicting results reported in numerous studies. For example, in the studies undertaken to determine the effects of massage therapy on lowering stress and anxiety and the difficulties after heart surgeries, different results have been published (10, 11, 19). On the other hand, the use of some complementary methods such as massage therapy has remained controversial in health care systems (2). The emergence of such uncertainties in the medical society is one of the main challenges for such methods to enter the treatment circle. It is noteworthy that, systematic reviews are important and are considered as "vital chains" between researches and medical decisions (20). Therefore this study was undertaken as a structured review with the objective of examining the effect of massage therapy on the outcome of patients after heart surgeries.

Material and Methods

Literature search: In this Literature review, all the information related to the topic of the study during the years 2004 to 2014 were fully examined. The searching process was done through electronic databases such as PubMed, CINAHL/Nursing Science Direct and Scopus, while the used keywords were consisted of the following: Massage Therapy, CABG, Patient Outcomes (Stress, Anxiety, Pain and Depression)

Study Selection Criteria: Literature search was directed to find randomized controlled trial reports as full text articles. Due to the limitation of undertaken studies, every paper with a focus on the adult population, written in English during the years 2004 to 2014 were considered for evaluation. These studies were next assessed by the entrance criteria, relevance, papers abstract table and the PEDro scale. PEDro scale is an authentic, valuable scale for the quality assessment of the methodologies in medical trials (21), and thus was used to evaluate the quality of methodologies in studies. After the exclusion of irrelevant articles (reviews, repeated and abstracts), 8 literatures were finally considered for a complete analysis of a content and structured review. Due to the lack of access to the descriptive results from studies, the abstracts were overlooked. (Figure 1)

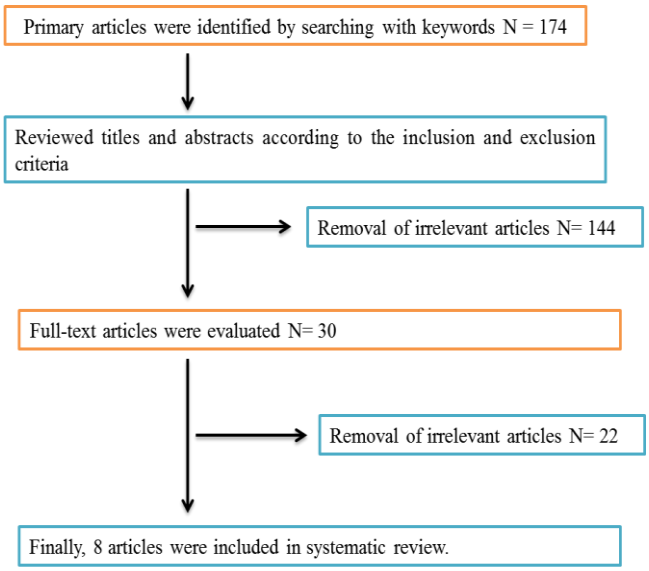

Figure1: Search Algorithm

Results

Among 174 articles which were dedicated to examining the effects of massage therapy, 8 final literatures with full relevance were selected as research sources and were reviewed. Considering the fact that the process of searching papers took place during the years 2004-14, the more recent papers of 2009-2014 show that in the field of researching and paper publishing regarding the effects of massage on outcomes of patients undergoing heart surgeries, there is a certain upward trend in the topic of implementing non-pharmacological methods and specially massage therapy. These papers have addressed the role of massage therapies on pains, stress and anxiety in patient's undergoing coronary surgeries. Among studies, Bauer, Cutshall and Braun explained that massage therapy could lead to a reduction in pain, stress and anxiety (19, 22, 23). Babaie has also considered anxiety, stress and depression as psychological outcomes (11).The principal finding of Albert study was that two 30-minute massage therapy sessions on postoperative day 2 or 3 and 4 or 5 after cardiac surgery did not improve psychometrics outcomes (10). Different outcomes could be attributable to the different massage therapy interventions (24). In other studies, in addition to these variables, the elements that was put to center attention the most, was the level of anxiety(25), which almost every single article had a word or two to say about and declared the affectivity of massage therapy on it. Pain was occasionally put as a sole variable for effects in massage interventions, and in this regard, results demonstrated reductions of this outcome in patients (26). Although there were differences in methodologies, techniques, treatment periods and the area of inflicting; the focus of final results of the considered outcomes had similar outcomes (Table 1).

Table1:A summary of the included studies investigating massage therapy and patient outcomes (Stress, Anxiety, Depression, Pain)

Ref	Authors	Study design	Participant number(total)	Pedro scale	Massage therapy interventions	Main findings
26	Sadeghi Shermeh et al (2009)	RCT Three-group Case Group, n=30 Control Group (usual care), n=30 Placebo Group (massage under the thumb of the right foot) n=30	N=90	6	20minute massage under the thumb of the right foot 2times a day, for 2days	Significant reduction Sternum pain between case and control groups (P<0.001)
19	Bauer et al (2010)	RCT Two-group Case Group, n=62 Control Group (20-minute quiet relaxation time), n=51	N=113	7	20minute massage in areas where the patient had pain at 2and 4days after surgery	Significant reduction pain, anxiety and tension (P<0.001)
22	Cutshall et al (2010)	RCT Two-group Case Group ,n=30 Control Group (20-minute quiet time), n=28	N=58	6	20minute massage shoulder, neck and back, 2 and 5 days after surgery	Significant reduction pain, anxiety and tension (P<0.001)
27	Asadi Zaker et al (2011)	RCT Two-group Case Group, n=32 Control Group (usual care), n=33	N=65	5	20minute massaging the palms and feet	Significant reduction pain reduce the consumption of sedatives (P=0.00)
11	Babaei et al (2012)	RCT Two-group Case Group, n=36 Control Group (usual care), n=36	N=72	6	20minute Swedish massage, hand, leg and back 3 days after surgery	Significant reduction anxiety ،stress, depression and fatigue (P<0.001)
23	Braun et al (2012)	RCT Two-group Case Group, n=75 Control Group (rest time), n=71	N=146	7	20minute Swedish massage, hand, leg, shoulder, neckandback3or4 and 5or6 days after surgery	Significant reduction Pain (P=0.001),anxiety(P<0.0001) ,muscular tension(P=0.002) and relaxation(P<0.0001)
25	Bagheri Nesami et al (2012)	RCT Two-group Case Group, n=40 Control Group (gentle foot rub with oil for one minute), n=40	N=80	7	20minute foot massage from two days postoperatively for 4 days	Significant reduction anxiety (P=0.001)
10	Albert et al (2009)	RCT Two-group Case Group, n=126 Control Group (usual care), n=126	N=252	6	30 minute massage hand, foot and back 2 or 3and 4 or 5 days after surgery	Without effect (no significant) Anxiety(P=0.2) depression(P=0.5) and pain(P=0.2)

Discussion

Considering the side effects that are discussed in the subject of medical intervention on patients, implementing non-pharmacological methods such as complementary therapy have become invaluable to healthcare. By stimulating the parasympathetic nerves and the consequent tranquility made in the patients, massage therapy is a focused topic in this regard (12). On this basis, this study was undertaken with the goal of determining the effects of massage therapy as a non-pharmacological intervention on the outcomes of patients after coronary surgeries. In this respect, the study of relevant final papers that were selected for analysis, proposed that massage therapy has a significant contribution on the reduction of levels of stress, anxiety, pain and depression in patients undergoing coronary bypassing. Although there were differences in the area and duration of massage, the final results suggested a significance of the effects of massage therapy on the measured variables. In study was performed by Bauer, in addition to the specific techniques used for every patients, He first massaged the areas that were in pain or discomfort and then he tried to do it on other places such as arms, thighs and back(19). Bagheri Nesami and Sadeghi Shermeh obtained similar results in the field of pain and stress reduction by massaging solely the metatarsus (25, 26). About the different outcomes in Albert's study, Baure suggests that a targeted approach (i.e., focusing on where the patient requests massage) is a truer reflection of how massage therapy is typically delivered. The greater range of techniques and individualized treatments permitted in their intervention may also have been an important factor. Pain, tension, and anxiety are challenges faced by all cardiac surgical patients. It is important not to dismiss prematurely a noninvasive, nontoxic, and relatively inexpensive intervention that can provide significant benefits to many cardiac surgical patients (24). The debatable point is the overall impact of massage on the body, regardless of the position or duration, which, due to the general features of massage, has similar consequences, depending on the outcomes in patients, on the body.

In the society of Coronary Artery Bypass Graft (CABG) patients, this issue is particularly importance, since after heart surgeries typically; patients go through a long procedure that includes manipulation and expansion of the ribcage, which often produces postoperative discomfort in the back, shoulders, and neck. In addition, discomfort may be related to surgical positioning, immediate postoperative cares, chest tubes, intravenous lines, and prolonged bed rest. These patients frequently complain pain from different parts of the body such as shoulders, the neck and the back (28). Accordingly, the use of massage therapy, with its consequent effects on the reduction of pain, stress and anxiety will lead to appropriate recovery and wellness during the process of treatment on patients (29, 30).

Conclusion

For patients under cardiovascular surgeries, depending on the level of surgery and morbidities along with it, medical interventions control the outcomes after surgery, and will often lead to undesirable side effects. Thus, by focusing on the results of the undertaken studies, massage therapy has proven to be an effective and secure act in the reduction and recovery of psychological outcomes and pain in the society of patients undergoing heart surgeries. Hence, the use of this non pharmacological approach can be significant to those working in medical environments.

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