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Effectiveness of Back Massage Therapy in Promoting Sleep Quality among Post Operative Patients after Cardiac Surgery

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Abstract: ***A study to assess the effectiveness of Back Massage therapy in promoting sleep quality among post operative patients after cardiac surgery in selected tertiary hospital, Kanchipuram district, Chennai, Tamilnadu. The aim of the study was to assess the effect of Back Massage therapy in promoting sleep quality among post operative patients after cardiac surgery who was admitted in cardio thoracic intensive care unit. The conceptual framework used in this study was Wiedenbach's Helping Art of clinical nursing theory. A quantitative approach was used for the present study. Using simple random sampling technique, 40 samples were selected from cardio thoracic intensive care unit, Chettinad Super Speciality Hospital, Kelambakkam. The tool used was structured questionnaire and modified Pittsburgh sleep quality index. The collected data was analyzed using descriptive and inferential statistics. The findings of the study revealed significant changes in the sleep quality among post operative patients after cardiac surgery. The mean post test level (4.25) of sleep quality was higher than the pre test level (1.80) of sleep quality, likewise standard deviation post test level (1.20) pre test level (0.41) and the 't' value of 10.971 which was statistically significant at p<0.05 level in experimental group, after receiving Back Massage therapy. There was a minimal change in sleep quality in the control group without any intervention and projects 't' value of 1.927 which was not statistically significant at p<0.05 level. Based on the objectives of the study, there was no significant association in the level of sleep quality among post operative patients after cardiac surgery with selected demographic variables. Thus the study proves that, Back Massage Therapy had effect on promoting sleep which can be provided as a complementary therapy in management of sleep disturbances among post operative patients after cardiac surgery.***

Keywords: Effectiveness, Back Massage therapy, sleep quality, post operative patients, cardiac surgery

1. Introduction

Cardiovascular diseases have the highest mortality rates about 16 million people per year in the modern world until 2020. Nearly 52 percent of deaths in the United States and 48 percent of Europe are related to this disease.

The incidence and prevalence of cardiovascular disease (CVD) are increasing rapidly in developing countries. Most patients with CVD do not respond to medical treatment and have to undergo cardiac surgery. This highly stressful experience results in increased levels of anxiety for patients.

The incidence of Coronary Artery Disease (CAD) has doubled in India over the last 3 decades, whereas CAD rates have dropped by 50% during the same period in most developed countries. Number of percutaneous coronary interventions and coronary artery bypass surgery are increasing steadily every year in India due to higher prevalence of CAD. Postoperative outcomes such as severe pain, anxiety, psychological distress and sleep disturbance are commonly associated with recovery from cardiac surgery. These factors may compromise the effective of their treatment and quality of life of patients undergoing major heart surgery. Pain can prolong a patient's post-operative stay in the hospital and affects their satisfaction level. There is a need for clinicians and nurses to identify safe and effective therapeutic interventions to use following a major cardiac surgery.

In recent years, there has been a focus on complementary therapies to manage or alleviate pain and anxiety. These therapies have many noninvasive techniques that are cost effective and simple with fewer side effects when compared to drugs. Complementary therapies are used as adjuvant therapy alongside conventional medical treatments to enhance overall health and promote a faster recovery. Massage therapy is one type of complementary therapy and is recognized as an essential part of health and wellness. Body massages have been tested in different populations and found to have marked effect in decreasing pain and anxiety, which help patients improve their quality of sleep and speed recover. In addition, Massage therapy may enhance patient mobility and recovery from surgery, which allows patient to perform daily activities and take part in physiotherapy treatment and rehabilitation.

Integrative therapies such as massage have gained support as interventions that improve the overall patient experience during hospitalization. Thoracic surgery patients undergo long procedures and commonly have postoperative back, neck, and shoulder pain. A study conducted by few authors and given the promising effects of massage therapy for alleviation of pain, also studied the effectiveness and feasibility of massage therapy delivered in the postoperative thoracic surgery setting.

Massage therapy is one of the most popular and simple form of complementary medicine which is in third place among the complementary therapies. Massage therapy that promotes the manual mobilization of several structures from both muscle and subcutaneous tissue, by applying mechanical force to tissues and thereby it promotes sleep to the patient by involving touch and movement. Massages typically delivered with the hands, although elbows,

forearms, or feet may be used. Benefits of massage are related to its effects on the musculoskeletal, circulatory, lymphatic, and nervous systems. Massage also positively affects mental and emotional states. Massage therapy continues to grow in popularity, with most people using massage therapy as a means to reduce stress, promote sleep and relax the muscle tension.

2. Literature Survey

A study determined that nurses caring for patients during the post-operative period find it challenging to manage their pain, sleep disturbances and anxiety. Although analgesic drugs are helpful in reducing pain, the adverse effects lead to further discomfort. Therefore, there is a need for nurses to have scientifically tested, simple and effective interventions to manage the pain, sleep disturbances and anxiety. A steady, emerging body of evidence suggests that massage therapy is vital to the healing process of patients undergoing general surgery.

Complementary and Integrative therapies such as massage have gained support that it improves the well being of the patients and enhances speed recovery. The study evaluated complaints of pain, fatigue and sleep which are intrinsically subjective and given the promising effects of massage therapy for alleviation of pain, also studied the effectiveness and feasibility of massage therapy delivered in the postoperative thoracic surgery setting during the recovery period following the coronary artery bypass graft surgery.

Table 1: Literature survey of Back Massage Therapy on Sleep Quality

Author/ Citation	*Type Of Study*	*Sample*	*Key Findings*
Fang C S, Liu C F Hu Li Za Zhi.2006:53(6):78-84	Case Report	ICU Patients	Patient's perception of sleep was obviously improved.
Redeker NS, Hedges C J.Cardiovasc. Nurs.2002;7:56-68	Comparative study	Patient following CABG	Significant differences in sleep quality by Day 1 and Day 2 is higher in experimental group than the control group.
Rochester MN The New England Journal of Medicine(243):630-633	Interventional study	Cardiac surgery patients	Back Massage Therapy helped in mitigate in medical challenges.
Liza.J.Dion Int J, Ther. Massage Bodywork 2015;8(1):25-30	One group Pretest Post test Design	Patients after Thoracic Surgery	Healing experience increased, shows reduction in pain and improvement in sleep.

As investigator, was posted in cardio thoracic intensive care unit observed that, poor quality of sleep in the postoperative period due to several factors including pain from surgical incision, presence of thoracic drains, pain caused by prolonged time in bed, and high anxiety level. In addition, muscle pain, particularly in the neck, shoulders and back, may make it difficult for patients to breath, cough, move and also to sleep. Each individual patients act up the situation differently towards the surgical intervention and its healing process and these factors were created the interest in investigator to assess the level of sleep quality after the back massage therapy among patients subjected to cardiac surgery.

3. Objectives

- To assess the pre test level of sleep quality among post operative patients after cardiac surgery in experimental and control group.
- To evaluate the effectiveness of Back Massage Therapy in promoting sleep quality among post operative patients after cardiac surgery in experimental group.
- To compare the pre test and post test level of sleep quality among post operative patients after cardiac surgery in both experimental and control group.
- To associate the post test level of sleep quality among post operative patients after cardiac surgery with selected demographic variables in experimental group.

4. Methods

A quantitative evaluative research approach, True Experimental study, Pre test and Post test design was selected for this study and conducted in cardiothoracic intensive care unit at Chettinad Super Specialty Hospital Chennai, India. The pilot study was conducted prior to the main study with 6 samples and feasibility and practicability of tools and methods was identified. The main study was conducted using 40 samples by using simple random sampling technique. The objective of the study was explained and informed consent was obtained from the sample and Back Massage therapy was given for 20 minutes from 2nd postoperative day to 5th post operative day for the experimental group (20) samples, 2 hours after the chest physiotherapy and control group (20) samples were on the routine care. Demographic data was collected by using structured questionnaire. The Data collection procedure was concluded with obtaining post test on Modified Pittsburgh Sleep Quality Index. The structured tool was validated by three nursing experts and one medical expert. The reliability of the tool was r = 0.86 by using Karl Pearson's correlation coefficient formula and hence the questionnaire was found to be reliable.

5. Data Collection and Analysis

The study was approved by the Institutional Human Ethical Committee Prior to conduction of study. The aim

of the study was explained to the study participants and informed consent was obtained by explaining in their own vernacular language. Descriptive statistics like mean, frequency, percentage, were used for demographic data. Effect of back massage therapy was evaluated by paired 't' test and compared using independent 't' test and association of post test level of sleep with demographic variables was done using Chi square test and P value less than 0.05 was considered as statistically significant.

6. Results and Discussion

Participants in experimental group majority 65% of age 50-60, 70% of male, 90% were married, 60% were finished primary education, 60% were sedentary lifestyle, 75% were earning Rs.5000-10000 per month, 95% were non vegetarian, 90% were not doing regular exercise, 55% were non smoker, 60% were non alcoholic, 30% were having diabetes mellitus, 25% were having hypertension, 5% were having both diabetes and hypertension, 40% were having kidney disease. On the pre test level of sleep quality among post operative patients after cardiac surgery in both experimental and control group. The mean sleep quality was 1.80 in experimental and 1.75 in control group respectively. The analysis reveals that in the experimental group, the pre test mean value was 1.80 with SD 0.41 and post test mean value was 4.25 with SD 1.20 and projects 't' value as 10.97 which was statistically significant at $p<0.05$ level.

Table 2: The comparison of pre test and the post test level of sleep quality among post operative patients after Back Massage Therapy in Experimental group.

N= 20

Test	*Sleep Quality*		*'t' Value*
	Mean	*Standard Deviation*	
PRE TEST	1.80	0.41	10.971*
POST TEST	4.25	1.20	

* Significant at $p<0.05$

Table 2 depicts the mean pre test level of sleep quality in experimental group was 1.80 with standard deviation 0.41, and the post test level of mean 4.25 with SD 1.20 and which projects 't' value of 10.971 which was statistically significant at $p< 0.05$ level.

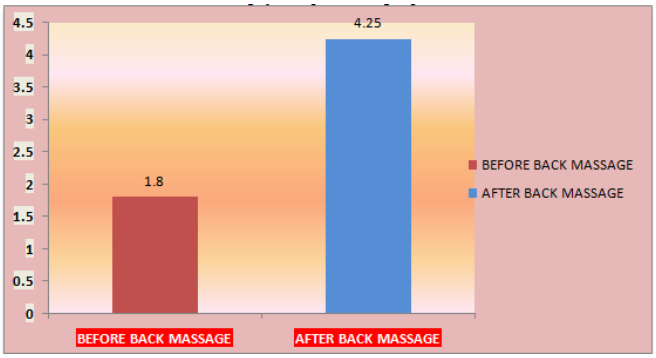

Figure 1: Effectiveness of Back Massage Therapy in Promoting Sleep Quality among Post Operative Patients after cardiac surgery in Experimental group.

Figure 1: shows the mean pre test level of sleep quality in experimental group was 1.80 and the post test level of mean was 4.25 respectively.

Table 3: Comparison of pre test and post test level of sleep quality among post operative patients after cardiac surgery in control group.

N=20

Control Group	*Sleep Quality*		*'t' Value*
	Mean	*Standard Deviation*	
PRE TEST	1.75	1.33	1.927#
POST TEST	2.30	1.12	

#Not significant at $p< 0.05$

Table 3 depicts that the pre test level of sleep quality mean 1.75 and SD 1.33 and post test level of mean 2.30 and SD 1.12 in control group which projects 't' value of 1.927 which was statistically not significant at $p< 0.05$ level.

The study results show a difference in the level of sleep quality among post operative patients receiving back massage therapy in experimental group. Data depicts that the mean post test level of sleep quality was higher than the pre test sleep quality level. The calculated 't' value for post test sleep quality is 10.97 which is greater than the table value. The computed 't' value shows that there is a significant difference between the pre and posttest level of sleep quality. Based on these results the research hypothesis was accepted. This indicates that back massage therapy is effective in promoting sleep quality.

A similar study was conducted in four hospitals in the south eastern united states are found that surgery Before back massage, the mean sleep level recorded by the patients was 5.18 [standard deviation (SD): 2.01]. After back massage, the mean sleep level was 2.33 (SD: 2.10). The observed promotion of sleep was statistically significant: paired samples $t_{52} = 12.43$, $r = 0.67$, $d = 1.38$, $p < 0.001$. Qualitative data illustrated improvement in all areas, with the most significant areas of impact reported being overall pain level, emotional well-being, relaxation, and ability to sleep. This study shows that integration of massage therapy into the acute care setting creates overall positive results in the patient's ability to deal with the challenging physical and psychological aspects of their health condition. The study demonstrated not only significant improvement in sleep levels, but also the interrelatedness of pain, relaxation, emotions, recovery, and finally, the healing process.

Results shows differences in level of sleep quality among post operative patients after cardiac surgery in experimental group who received Back Massage therapy. The't' value 10.97 was statistically significant at $p < 0.05$ level, and in the control group the't' value was 1.92 which was not significant at $p < 0.05$ level.

A similar study was conducted in Brazil in 2010 focused on the effects of back massage for improving sleep in patients following cardiopulmonary artery bypass graft surgery. Back massage therapy was performed by the physiotherapist as per the protocol which consisted of

back, neck, and shoulder massages. This intervention was performed around 7:00 p.m., 2–3 hours before sleep. The control participants sat in comfortable chairs for three consecutive nights and were not subjected to massage therapy. The results indicate that back massage therapy improved the comfort level of the massage therapy group participants in comparison with those patients in the control group. Recovery from fatigue was significantly faster in the massage therapy group, reaching statistically significant differences by Day 1 and Day 2. Sleep effectiveness was also significantly higher in the back massage group participants during all the study period.

The study findings have shown that the post test level of sleep quality among post operative patients after cardiac surgery with selected demographic variables had no significant association.

7. Conclusion

Back Massage therapy was found to be Effective in promoting sleep quality among the post operative patients after cardiac surgery. The findings of the study revealed that there were significant changes in sleep quality level among post operative patients after cardiac surgery in experimental group after receiving back massage therapy and minimal changes in sleep quality level in control group who was on routine care. On the basis of this the research hypothesis was accepted. Based on the objectives there was a non significant associated in the level of sleep quality among post operative patients after cardiac surgery with selected demographic variables. The study concluded that after receiving 20 minutes of Back Massage therapy twice a day for 4 days, statistically showed improvement in level of sleep quality among post operative patients after cardiac surgery which can be used as a complementary therapy in promoting sleep quality in post cardiac surgery.

8. Future Scope

In Nursing Practice, staff nurses has to apply theory into practice as the complementary and alternative therapies are currently playing major part in clinical area and can use Back Massage Therapy in their daily practice on patients to promote sleep quality.

In Nursing Education, student nurses can actively participate in Back Massage therapy and can apply into practice. The faculty members can motivate the student nurses in learning the alternative and complementary therapy and how effectively it can be applied during practice.

In Nursing Administration, administrators must encourage the public to learn Back Massage therapy and know about the health benefits and they can themselves be trained in the Back Massage therapy and can motivate others to participate and provide benefits to the patients.

In Nursing Research, nurses can conduct more research studies to demonstrate the effects of Back Massage therapy along with other diseases and also publish articles in the journal explaining the importance of Back Massage therapy.

References

[1] Babaee S, Shafiei Z. Effectiveness of massage therapy on mood of patients after open - heart surgery. Iran J Nurs midwifery Res. 2012 (2Suppl 1): S 120 – 4.
[2] Khor GL. Cardiovascular epidemiology in the Asia – pacific region. Asia pacific journal of clinical nutrition. 2001: 76 – 80.
[3] Geevar Zachariah. Prevalence of coronary artery disease and coronary risk factors in Kerela, south India: A population survey. Indian heart J. 2013: 5 (3): 243-249.
[4] Manjunath, Agaarwal. Coronary artery disease in patients undergoing cardiac surgery for non-coronary lesions in a tertiary care centre. Indian Heart J. 2014: 66(1):52 – 56.
[5] Kshettry VR, CaroleLF. Complementary alternative medical therapies for heart surgery patients: feasibility, safety and impact. Ann thorac surg.2006: 81 (1):201 – 5