Effect of foot and hand massage on post operative pain of patients with chest surgery

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Abstract

Research aim: To assess baseline level of post-operative pain of patients with chest surgery in experimental and control group. To determine the effect of foot and hand massage on post-operative pain of patients with chest surgery in experimental group. To compare post intervention changes on post-operative pain of patients with chest surgery between experimental and control group. Methods: The tools used for data collection were demographic profile, interview schedule and Numerical Rating Scale and biophysiological parameters. Quasi experimental pre test post test control group design on forty samples (twenty in the control group and twenty in the experimental group) who were in 3rd post operative day by non probability purposive sampling technique. Results shows 100% subjects had pain on operated site. In that most of the subjects were having pain during deep breathing exercise. The pre intervention data of pain measured with Numerical Rating Scale, the mean score of pain in control group and experimental group were 7.25 and 7.85 respectively. In pre intervention phase the mean score of heart rate in control and experimental group was 87.75 and 86.6 respectively, respiratory rate was 18.7 and 19.45 respectively, SBP was 132.45 and 129.8 respectively and DBP was 89.5 and 87.1 respectively. It indicates that the mean score of heart rate, SBP and DBP is more in control group and the mean score of respiratory rate is more in experimental group. The pre and post intervention mean score of pain in experimental group was 7.85 and 3.892 respectively. The pre and post intervention mean score of biophysiological parameters in experimental group was 6.25 and 4.6 respectively. It reveals that foot and hand massage intervention is highly significant in reduction of pain of patients with chest surgery in experimental group. The p value of pain intensity was 0.000** and biophysiological parameters was 0.0039** which is less than 0.01 at 1% level of significance. It reveals that there is highly significant difference in the level of post operative pain and biophysiological parameters of patients with chest surgery after giving foot and hand massage.
in experimental group. On the basis of the study we can draw the following conclusion. This study supported the use of foot and hand massage for reducing post operative pain of patients with chest surgery.

**Introduction:**

Pain is a complex, multifaceted phenomenon. It is an individual, unique experience that may be difficult for clients to describe or explain and is often difficult for others to recognize, understand and assess. Unrelieved acute pain leads to debilitation, diminished quality of life and depression. Unrelieved acute postoperative pain leads to development of chronic pain syndrome and increased complication. Uncontrolled post operative pain may lead to variety of complications in cardiovascular, immunity, respiratory, metabolic, endocrine, mentality systems and also increase immobility, thrombosis, emboli, lengthened hospitalization and increased costs. Non pharmacologic treatment modalities like massage therapy is increasingly applied to relieve the symptoms of pain in postoperative patients. Massage is the systematic manipulation of the soft tissues of the body, particularly the muscles, tendons and skin. Massage, through touch, is one way that nurses communicate with patients. Pain associated with chest surgery has been poorly controlled in many surgical patients and this area has been less researched by the nursing personnel.

The nurses play an integral member of the multidisciplinary team to provide intervention that can be used by all those recovering from chest surgery. So, the investigator felt the need to find out a simple, easy and effective intervention to reduce the post operative pain and conducted a study to evaluate the effect of foot and hand massage on post operative pain of subjects with chest surgery in selected hospitals of Pune city as a partial fulfilment for the decree of Masters in Nursing, as per MUHS, Nashik.

**Title:**

Effect of foot and hand massage on post operative pain of patients with chest surgery in selected hospital of Pune city.

**Objectives of the study:**

1. To assess baseline level of post-operative pain of patients with chest surgery in experimental and control group.

2. To determine the effect of foot and hand massage on post-operative pain of patients with chest surgery in experimental group.

3. To compare post intervention changes on post-operative pain of patients with chest surgery between experimental and control group.
Hypotheses

$H_0$: There will be no significant difference in the levels of postoperative pain of patients with chest surgery after foot and hand massage in both groups (experimental and control group).

$H_1$: There will be significant difference in the levels of postoperative pain of patients with chest surgery after foot and hand massage in experimental group.

$H_2$: There will be significant difference in the biophysiological parameters in patients with chest surgery in experimental group.

$H_3$: There will be association between the findings and selected background variables.

Assumptions:

1. The patients undergone chest surgery suffering with pain.
2. Majority of the patients do not have adequate pain control with pharmacological measures.
3. Foot and hand massage may help to reduce the level of pain among patients undergone chest surgery.

Research methodology:

In this study quasi experimental pre test post test control group design was adopted. The post surgery patients who were in 3rd post operative day were chosen as the target population. The sample consisted of forty (twenty in the control group and twenty in the experimental group). The sampling criteria were inclusion criteria: The post chest surgery subjects who were on 3rd post operative day and complaining of pain, subject with following chest surgery admitted in the cardiac recovery unit and wards for the next three days and subjects who were conscious and well oriented. Exclusion criteria: Subjects who are having chronic pain and who are hemodynamically unstable. Non probability purposive sampling technique was adopted. The tools used for data collection were demographic profile, interview schedule, Numerical Rating Scale and biophysiological parameters. To ensure the content validity the instruments were given to 15 experts from different fields. The reliability of the tools was established by using data collected from 6 research subjects who underwent chest surgery. Reliability was established by Split half method. The reliability of the Numerical Rating Scale was 0.94 and biophysiological parameter measurement was 0.9.

Significant findings of the study:

It was observed that majority (50%) subjects were between the age group above 60 years in control group and 30% subjects were between the age group of 40-50 years in experimental group. Most of the subjects were male, married and educated. Majority of subjects were serviceman. It also interpreted that majority of the subjects were having coronary artery disease and operated for CABG. Most of the subjects were receiving Tramadol as an analgesic.
Pre and post intervention data of post operative pain:

100% subjects had pain on operated site. In that most of the subjects were having pain during deep breathing exercise and none of them complained of pain on first day of surgery. 100% subjects were having sharp and aching pain in both the groups.

**Figure:** Bar diagram showing pre and post intervention pain intensity in experimental group.

Distribution of pain scores and biophysiological parameters observed in the pre intervention phase in both groups:

The pre intervention data of pain measured with Numerical Rating Scale, the mean score of pain in control group and experimental group were 7.25 and 7.85 respectively in the pre intervention phase. It reveals that there is statistical significance difference before intervention in both groups. In pre intervention phase the mean score of heart rate in control and experimental group was 87.75 and 86.6 respectively, the mean score of respiratory rate in control and experimental group was 18.7 and 19.45 respectively, the mean score of systolic blood pressure in control and experimental group was 132.45 and 129.8 respectively and the mean score of diastolic blood pressure in control and experimental was 89.5 and 87.1 respectively. It indicates that the mean score of heart rate, systolic blood pressure and diastolic blood pressure is more in control group and the mean score of respiratory rate is more in experimental group.
Distribution of pain scores and biophysiological parameters observed in the post intervention phase in experimental group:

The pre and post intervention mean score of pain in experimental group was 7.85 and 3.892 respectively. The pre and post intervention mean score of biophysiological parameters in experimental group was 6.25 and 4.6 respectively. It reveals that there is significant decrease in pain and biophysiological parameters in experimental group after intervention. It also reveals that foot and hand massage intervention is highly significant in reduction of pain of patients with chest surgery in experimental group.

In post intervention data of changes in pain pattern, 75% subjects were having reduction in pain, 60% subjects were having relief in pain and inducing sleep. This indicates that most of the subjects were having reduction in pain and none of them having increasing pain in experimental group in post intervention phase.

![Bar diagram showing pre and post intervention data of pain by Numerical Rating Scale and biophysiological parameters in experimental group.](image)

**Figure:** Bar diagram showing pre and post intervention data of pain by Numerical Rating Scale and biophysiological parameters in experimental group.

Comparison of pre and post intervention changes on post operative pain of patients with chest surgery in experimental group:

The pre and post intervention mean score of pain in experimental group was 7.85 and 3.892 respectively. The pre and post intervention mean score of biophysiological parameters in experimental group was 6.25 and 4.6 respectively. It reveals that there is significant decrease in pain and biophysiological parameters in experimental group after intervention. The p value of pain was $p = 0.000^{**}$ and biophysiological parameters was $p = 0.004^{**}$ is less than reasonable choice i.e. less than 0.01 at 1% level of significance. It reveals that foot and hand massage intervention is highly significant in reduction of pain of patients with chest surgery in experimental group.
Comparison of post operative pain of patients with chest surgery in experimental and control group:

The comparison of the post intervention changes in pain intensity and biophysiological parameters in both the groups. The p value of pain intensity was 0.000** and biophysiological parameters was 0.0039**which is less than reasonable choice i.e. less than 0.01 at 1% level of significance. It reveals that there is highly significant difference in the level of post operative pain and biophysiological parameters of patients with chest surgery after giving foot and hand massage in experimental group.

Conclusion:

This study supported the use of foot and hand massage for reducing post operative pain of patients with chest surgery.

References