FOOT REFLEXOLOGY AND STERNOTOMY PAIN REDUCTION

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ABSTRACT

A Quasi experimental pre-test post-test control group design was adapted for this study. The conceptual framework for the study was based on the nursing process model. The study was done at Apollo Multi Specialty hospital in Madurai.60 samples (30 experimental and 30 control) were selected through non-probability purposive sampling. The tools used were a questionnaire examining demographic and clinical data, Standardized Numerical Scale for subjective assessment and objective structured pain indicators for assessing the objective pain behaviour. Pre-test level of sternotomy was assessed for both groups. In experimental group, foot reflexology intervention was given for 7 days and post-test pain level was assessed for three days (3rd, 5th and 7th day). In control group, pain level was assessed without foot reflexology intervention. The collected data were tabulated and statistically analysed. The study results found that the post-test subjective and objective sternotomy pain mean score for the experimental group was ((1.17±0.9) and (3.4±1.04). The post-test subjective and objective pain mean score for the control group was (3.36±0.56) and (16±9.8). Hence the foot reflexology was effective in reducing sternotomy pain among post cardiothoracic patients.

KEYWORDS

Foot reflexology, Sternotomy and Pain.

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INTRODUCTION
The cardiothoracic surgery patients are exposed to stress and pain due to sternotomy incision. The primary aim of the study was to evaluate the effectiveness of foot reflexology on sternotomy pain among post cardiothoracic surgery patients at Apollo Multi Specialty hospital in Madurai.
The objectives of the study were assess the level of sternotomy pain among post cardiothoracic surgery patients before foot reflexology as well as after foot

reflexology, to evaluate the effectiveness of foot reflexology on sternotomy pain and to find out the association between the effects of foot reflexology on sternotomy pain and their demographic variables among post cardiothoracic surgery patients.

Significance and need for the study

The international association for the study of pain defines pain as an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms f such damage. Factors that affect postoperative pain consists of the previous experience, surgical intervention, Reflexology is a bodywork modality in the field of complementary and alternative medicine. Reflexology is the act of applying pressure on specific areas of hands and feet that correspond to particular organs and glands of the body using specific thumb finger and hand technique. Reflexology therapies are classified into three types - ear reflexology, hand reflexology and foot reflexology. The basic concept of foot reflexology promotes homeostasis. Foot reflexology improves blood circulation, lymphatic circulation and also motivates relaxation, good sleep and wound healing. Intraoperative pain management, site and size of incision and extent of surgical trauma.

Statement of the problem

A study to evaluate the efficacy of foot reflexology on sternotomy pain reduction among post cardiothoracic surgery patients at selected hospital in Madurai.

Objectives

To assess the level of sternotomy pain before foot reflexology in both control and experimental groups.

To assess the level of sternotomy pain after foot reflexology in both control and experimental groups.

To assess the effectiveness of foot reflexology on sternotomy pain reduction by comparing the post test score between control and experimental groups.

To compare the pre-test and post-test level of sternotomy pain scores among sternotomy pain scores among post cardiothoracic surgery patients in control and experimental groups.

To find out the association between the effect of foot reflexology on sternotomy pain reduction and their

selected demographic variables among post cardiothoracic surgery patients.

Hypothesis

H_1: The mean post-test sternotomy pain scores of experimental group subject is significantly lower than the mean post-test sternotomy pain scores of control group.

H_2: The mean post-test sternotomy pain scores of experimental group is significantly lower than the mean pre-test sternotomy pain scores.

H_3: There is a statistically significant association between pre-test sternotomy pain scores with selected demographic variables on both control and experimental groups.

METHODOLOGY

Research approach

An experimental approach was selected for this study to evaluate the efficacy of foot reflexology on sternotomy pain reduction.

In this study, quasi experimental –pre-test post-test control group design, was adopted.

Setting of the study

Population

The target population for this study was patients undergone cardiothoracic surgery in Madurai district.

The accessible population was patients undergone cardiothoracic surgery and 2nd post-operative day in Apollo Multi Specialty Hospital, Madurai.

Sample

The sample consists of patient who were undergone cardiothoracic surgery at Apollo Multi Specialty Hospital, Madurai.

Sample size

The total sample size of the study was 60. In that 30 patients were considered as experimental group and remaining 30 as control group.

Sampling technique

Sample for this study was selected through non-probability purposive sampling. These samples were the participants those who were available during the study. Samples were selected based on inclusion criteria.

Inclusion criteria

Patients who were

Undergone cardiothoracic surgery and second post-operative day

Older than 20, below 70 years of age

Willing to participate

Who are all staying in the hospital up to 7 days after surgery.

Capable of giving adequate response to pain.

Comorbidities–DM (with controlled limit of blood sugar)

Exclusion criteria

Patients who had previously exposed to similar experiment.

Cardiothoracic surgery patients with immediate post-operative complications

Description of the tool

The tool consists of 3 parts:

Part I

Section A - demographic data

Section B - clinical data

Part II

This part contains the subjective standardized numerical pain intensity scale with the score of 0-10 that ranges from no pain to severe pain.

Part III

This part includes the self-administered questionnaire, which contains following parameters with focused determination,

Blood pressure

Respiration

Pulse

Body movement

Vocalization

Facial look

Other effects of pain

Precipitating factors of pain

METHODS OF DATA COLLECTION

The data was collected among the clients undergone cardiothoracic surgery in Apollo specialty Hospital at Madurai. The period of data collection was four weeks. Written permission was obtain from the concerned authorities. Samples of the study were recognized on the basis of inclusion criteria and selected by non-probability purposive sampling method. Totally 60 patients were selected, 30 patients were consider as experimental group and 30

were control group. Pre-test assessment for both experimental and control group was done. Following week the patients in experimental group were given foot reflexology to the cardiothoracic patients. With use of thumb finger give a pressure over the both foot for 15 minutes then the patient pain score vital signs was documented. After 6 hours, the procedure was repeated 3 times a day, with the interval of 2 hours and for 7 continuous days. In the control group, only the pain intensity was measured and registered after measurement of pulse rate, blood pressure and respiratory rate without intervention. After the data collection the investigator tells about foot reflexology procedure to staffs working there.

RESULTS AND DISCUSSION

The overall post-test subjective sternotomy pain mean score of the experimental group was decreased (1.17±0.9) with mean difference of 22 than the control group post-test subjective sternotomy pain mean score (3.36±0.56) with mean difference of 34. Also, the overall post-test objective sternotomy pain mean score was decreased (3.4±1.04) with mean difference of 40 than the control group objective sternotomy pain mean score (16±9.8) with mean difference of 61.

The paired't' test for subjective and objective pain sores within the experimental group were found to be highly significant. The unpaired't' test score was obtained for post-test subjective sternotomy pain among control and experimental group was 13.49 (p<0.001). It was found to be highly significant. Also the unpaired't' test score was obtained for post-test objective sternotomy pain among control and experimental group was highly significant in which the 't' value was 25.69 (p<0.001).

Discussion

The study results found that the post-test subjective and objective sternotomy pain mean score for the experimental group was ((1.17±0.9) and (3.4±1.04). The post-test subjective and objective pain mean score for the control group was (3.36±0.56) and (16±9.8).

Hence the foot reflexology was effective in reducing sternotomy pain among post cardiothoracic patients. And also the results found that, there is no

association between pre-test sternotomy pain scores among post cardiothoracic patients with their demographic variables.

Table No.1: Data collection schedule

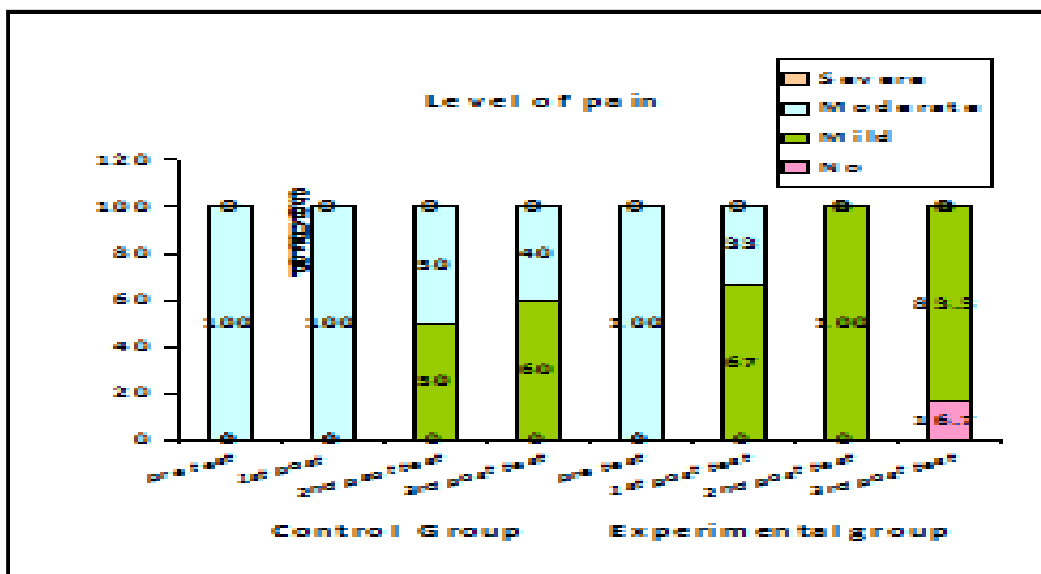| S.No	Group	Pre-test	Intervention	Post-test
1	Experimental	2nd day of cardiothoracic surgery	2nd, 3rd, 4th, 5th,6th,7th day of cardiothoracic surgery with foot reflexology	Post-tests were done on 3rd, 5th, 7th day of cardiothoracic surgery
2	Control	2nd day of cardiothoracic surgery		Post-tests were done on 3rd, 5th, 7th day of cardiothoracic surgery

Figure No.1: Frequency distribution of subjective sternotomy pain in control and experimental group
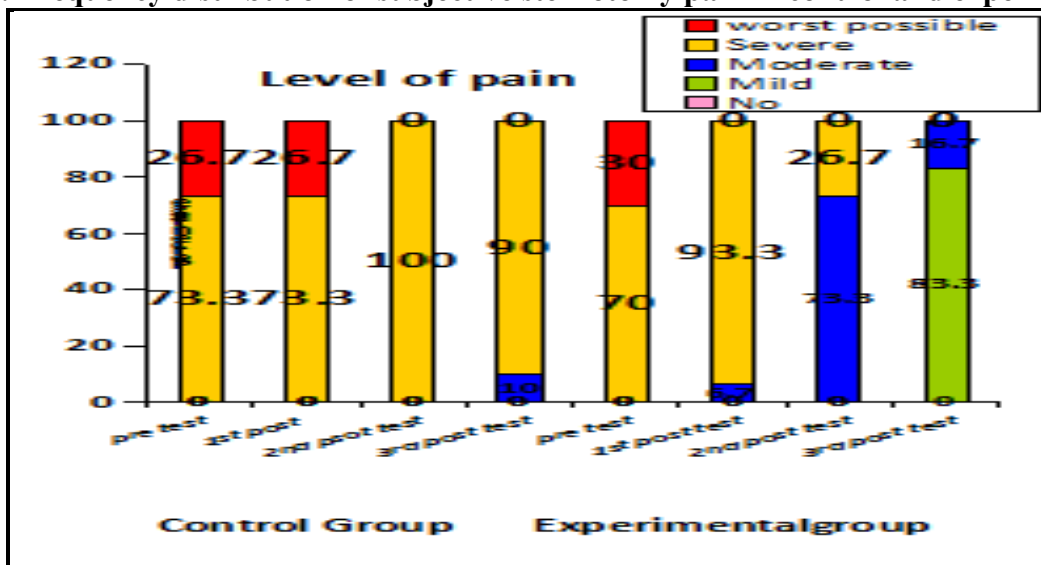

Figure No.2: Frequency distribution of objective sternotomy pain in control and experimental groups

IMPLICATION

The implication of the findings has been discussed in relation to nursing service, nursing education, nursing administration and nursing research.

These findings help the nursing personnel to implement foot reflexology in clinical settings.

Periodic conferences, seminars and symposium can be arranged regarding alternative and complementary therapies to make nursing professional competent to meet the ever changing needs of the society.

Nurses should take initiative to conduct research on effect of non-pharmacological interventions.

RECOMMENDATION

A similar study needs to be conducted in other private and government hospitals in order to draw a generalization.

A similar study may be done with large sample for generalization of the results.

A longer period of intervention can be studied for more reliability and effectiveness.

CONCLUSION

Foot massage is an easy and low-cost method, is helpful for pain reduction among post cardiothoracic patients. Regarding the importance of pain control in post cardiothoracic patients and considering few studies in the field of complementary medicine and massage therapy on post cardiothoracic patients, researchers interested in the field of massage therapy are recommended to do studies with a large sample size and in different environment and research communities.

Further research studies are recommended to clarify the effect of foot massage on other variables among post cardiothoracic surgery patients such as weaning time, psychological variables (stress, anxiety).

CONFLICT OF INTEREST

We declare that we have no conflict of interest.

BIBLIOGRAPHY

1. Ann Marriner Tomey, Martha Raile Alligood. Nursing theories and their work, *Missouri: Mosby Publication,* 6th Edition, 2006, 43-48.
2. Bare G Brenda, Smeltzer C Suzanne, *et al*. Brunner and suddarth's text book of medical surgical nursing, *Lippincoot Williams and Wilkins Publication, Philadelphia,* 12th Edition, 2010, 1325-1345.
3. Basavanthappa B T. Nursing research, *Jaypee Brothers Medical Publishers, New Delhi,* 2nd Edition, 2007, 164-168.
4. Black M. Joyce, Jane Hokanson Hawks. Text book of medical surgical nursing, *Elsevier Publication, India,* 8th Edition, 2001, 48-55, 808-834.
5. Challinor Paul, Sedgewick John. Principles and practice of renal nursing, *Stanley Thornes Publishers, UK,* 2001, 90-152.
6. Christensen, Kockrow. Foundations and adult health nursing, *Mosby Elsevier Publications, Philadelphia,* 6th Edition, 2011, 121-134, 395-412.
7. Donna D. Ignatavicius, *et al*. Medical - surgical nursing: A nursing process approach, *Saunders,* 1991, 2402.