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Research Article

EFFECT OF FOOT REFLEXOLOGY ON POST OPERATIVE PAIN AMONG PATIENTS WITH STERNOTOMY AT SELECTED HOSPITAL, COIMBATORE

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A B S T R A C T

Foot reflexology is effective in reducing post operative pain among patients with sternotomy. The aim of the study was to identify the effect of foot reflexology on postoperative pain among patients with sternotomy at selected hospital, Coimbatore. Quasi experimental one group pretest posttest design was adopted in this study. 30 patients were selected by using purposive sampling technique. The demographic profile was collected from the patients. Pre-test was done to assess the postoperative pain, by using numerical rating scale. Foot reflexology was given for 20 minutes twice a day when pain score >3 on numerical rating scale. Post test was done to reassess the postoperative pain, by using numerical rating scale after
5 minutes of intervention. It was identified that the post-test mean level of pain score among patients in the experimental and control group was 3.2 and 4.9 respectively with a mean difference of 1.7. Standard deviation of the experimental and control group was 0.74 and 0.65 respectively. The calculated 't' value of 8 was greater than the table value at 0.05 level of significance. Hence, it was concluded that foot reflexology is an effective intervention to reduce postoperative pain among patients with sternotomy.

INTRODUCTION

Heart is the most important vital organ in our body to be alive in the world. Cardiovascular diseases (CVDs) have become the major cause of death in India now. (prabaharan,2016). More than 80% of CVD deaths are predominantly caused by ischemic heart disease and stroke. At 50% of CVD mortality in worldwide. (prabaharan,2016).

Sternotomy is the choice of surgical procedure to access the heart in which a midline vertical incision is made along the sternum.(Lewis's 2015). More than 2 million people undergo sternotomy in every year worldwide for heart surgery. (Bordoni, *et al* 2017). Post operative pain are most common phenomenon following every category of cardiothoracic surgeries.Sternotomy pain after cardiac surgery is frequently under treated. (Abdou F, 2018). The myocardial oxygen demand increase the workload of the heart, thereby cardiovascular performances decreases and the complications arises, which slows down the recovery of the patient after the surgery. (Embong, 2015).

Foot reflexology is one of the branches of the complementary and alternative therapy, which can be as defined as the gentle manipulation or pressing on certain parts of the foot to produce an effect elsewhere in the body.

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(Cochrane collaboration, 2015). Proper pain relief would speed up the recovery and thereby shorten the length of stay in the hospital.(Embong, 2015).Foot reflexology is simple, non invasive method, and no side effects can be used as a complimentary therapy to reduce Sternotomy pain after cardiothoracic surgery.(Abdou el hafez,2018). Based on the above facts the researcher would like to study on effect of foot reflexology on postoperative pain among patients with sternotomy.

Literature Review

Abdou, and El hafez (2018) was conducted a study to assess the effect of foot reflexology practice on acute pain and anxiety of critically ill patients after cardiothoracic surgery among 60 patients, adopted Quasi experimental research design in Assuit university hospital, Egypt. The results revealed that significant difference in mean score of pain between the experimenral and control group. ('p' value <0.001).

Rigi,Feiji,Naseri,and Salehi (2015) was investigated the effect of foot reflexology on pain in patients undergoing coronary artery bypass surgery. Clinical trail was performed among 52 patients in university of medical science of Iranshahr. The results revealed that significantly decreased pain in experimental group after the intervention. (`p' value 0.000).

Varghese (2012) was studied to assess the effectiveness of foot reflexology to reduce post-operative pain after sternotomy

patients in selected Hospitals, Bangalore. True experimental time series design performed among 60 patients who underwent sternotomy. The results showed that significant in demonstrating the efficiency of foot reflexology in reducing post operative pain after sternotomy patients. (`p' value <0.05).

Statement of the Problem

Effect of Foot Reflexology on Postoperative Pain Among Patients with sternotomy At Sri Ramakrishna Hospital, Coimbatore.

Objectives

- ✓ To assess the level of post operative pain among patients with sternotomy.
- ✓ To evaluate the effect of foot reflexology on postoperative pain among patients with sternotomy.
- ✓ To find out association between postoperative pain and selected demographic variables among patients with sternotomy.

Hypotheses

H_1: There is a significant difference between pre-test and post-test level of the postoperative pain among patients with sternotomy in experimental group.
H_2: There is a significant difference between pre-test and post-test level of the postoperative pain among patients with sternotomy in control group.
H_3: There is a significant difference between post-test level of the postoperative pain among patients with sternotomy in both experimental and control group.
H_4: There is a significant association between the levels of postoperative pain with selected demographic variable among patients with sternotomy.

METHODOLOGY

A quantitative research approach and a quasi experimental one group pre-test-post-test with control group were adopted in this study. The study was conducted at Sri Ramakrishna Hospital, Coimbatore. Purposive sampling technique was used in this study. The sample consists of 30 patients selected among who underwent sternotomy. The postoperative pain was assessed by using numerical pain rating scale.

A quantitative research approach and a quasi experimental one group pertest-posttest with control group was adopted in this study. The study was conducted in the cardiothoracic icu, stepdown and special wards of at Sri Ramakrishna Hospital in Coimbatore. A total number of 30 samples were selected for the study using Purposive sampling technique. By using alternative assignment method 15 patients were assigned for experimental group and 15 patients were assigned for control group. In this study, the independent variable was foot reflexology and the dependent variables was postoperative pain. Demographic variables consist of Age, Gender, Religion, Educational status, Occupation, Marital status, Type of family. Health history consists of personal history, diet, history of regular exercise, history of systemic illness and history of medication. Initial assessment of postoperative pain was done using NRS pain scale. Ethical consent was obtained from the institutional ethical committee. Informed consent was obtained from each study participants. The postoperative pain was assessed each time before and after intervention in both experimental and control group. The application of pressure on cardiac point (below 3 centimetre between4th and 5thtoes)of the left leg by using thumb, and fingers of hands for 3minutes. Thereafter overall pressure points are stimulated in the sole of the both feet by wooden stick (reflexology stick) for 10 minutes. The total duration of procedure was 20 minutes for each patient, twice a day from 2nd postoperative day to 4th postoperative day. After 5 minutes of foot reflexology, the postoperative pain was assessed. Control group received routine care.

RESULTS

Table 1 Comparison between the Pre-test and Post-test Post Operative Pain among Patients with Sternotomy in Experimental Group (n=30)

S.No	Study groups	Observation	Mean	SD	Mean difference	't' value	Table value
1.	Experimental group	Pretest	5.5	0.46	2.3	32.3** *	4.14
		Posttest	3.2	0.74			

***Significance at 0.001 level

Paired 't' test was used to assess pre-test and post-test level of postoperative pain among patients with sternotomy in the experimental group. The mean of the pre-test and post-test postoperative pain score of experimental group was 5.5 and 3.2 respectively and standard deviation was 0.46 and 0.74 respectively. The mean difference in the pain score was 2.3. The calculated 't' value 32.3 was greater than the table value of 4.14 at 0.001 level of significance. Thus the research hypothesis, **H1:**"There is a significant difference between pre-test and post-test level of the postoperative pain among patients with sternotomy in experimental group" was accepted.

Table 2 Comparison Between the Pretest and Posttest Post Operative Pain Among Patients with Sternotomy in Control Group

(n=30)

S.No	Study groups	Observation	Mean	SD	Mean difference	't' value	Table value
1.	Control group	Pretest	5.05	0.36	0.13	3.12*	2.14
		Posttest	4.92	0.65			

*Significance at 0.05 level

Paired't' test was used to assess the pretest and posttest level of postoperative pain among patients with sternotomy in the control group. The result shows that the mean of the pain score was 5.05 and 4.92 with the mean difference of 0.13. The calculated standard deviation was 0.36 and 0.65 respectively. Calculated 't'value3.12 was greater than the table value of 2.14 at 0.05 level of significance. Thus the research hypothesis,H2:"There is a significant difference between pre-test and post-test level of the postoperative pain among patients with sternotomy in control group" was accepted.

Table 3 Comparison of post operative pain in experimental & control group after foot reflexology

(n=30)

S. no	Study groups	Observation	Mean	SD	Mean difference	Calculated value	't' value
1.	Experimental group	Posttest	3.2	0.74	1.7	8***	4.14
	Control group		4.9	0.65			

Unpaired 't' test was used to compare the post-test level of pain among experimental and control group. It was identified that the post-test mean of the pain score among patients in the experimental and control group was 3.2 and 4.9 respectively with a mean difference of 1.7. Likewise the standard deviation of the experimental and control group was 0.74 and 0.65 respectively. The Calculated 't' value 8 was greater than the table value 4.14 at 0.001 level of significance. Hence the research hypothesis, **H3:** "There is a significant difference between post-test level of the postoperative pain among patients with sternotomy in both experimental and control group" was accepted.

Major Findings

The level of pain before intervention in experimental group, result reveals that 15 (100%) patients had moderate pain, the score between 4-6 and after intervention, it was identified that 13 (86.7%) patients had mild pain between 1-3 and 2 (13.3%) had moderate pain.

Comparison between pre-test and post-test level of postoperative pain among patients with sternotomy in the experimental group showed a significant difference after foot reflexology the calculated 't' value 32.3.

Comparison between pre-test and post-test level of postoperative pain among patients with sternotomy in the control group showed a significant difference after foot reflexology the calculated 't' value 3.12.

Comparison of post-test level of postoperative pain among patients with sternotomy in the experimental and control group showed a significant difference after foot reflexology the calculated't' value 8.

There is a significant association between level of postoperative pain among patients with sternotomy and gender (χ^2=3.906), at 0.05 level of significance.

CONCLUSION

Cardiovascular diseases are the leading cause of death. Sternotomy is the choice of surgical procedures to treat cardiovascular disease. The pain management is very important in immediate postoperative period which is usually undertreated. The postoperative pain is usually treated with pain medications. Foot reflexology is one of the branches of complementary and alternative therapy. The researcher adopted foot reflexology to reduce postoperative pain. It is an application of general pressure on the foot. It is simple, non invasive and cost less. It was found that foot reflexology is effective in reducing pain, impact on sense of wellbeing, and speed up recovery. Hence, the researcher concludes that foot reflexology can be one of the non pharmacological methods to reduce the postoperative pain among patients with sternotomy.

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