

# EFFECTIVENESS OF REFLEXOLOGY ON PAIN AND ANXIETY AMONG WOMEN UNDERGONE ABDOMINAL HYSTERECTOMY

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## Abstract

Hysterectomy is a common surgery done to a large number of women who belong to late reproductive age group. Abdominal hysterectomy is more prevalent in low socio economic groups of women and is considerably more common in the developing world. Pain and anxiety is the most frequently experienced problems after hysterectomy. The main objectives of the study were, To evaluate the effectiveness of Reflexology on pain among women undergone abdominal hysterectomy. To evaluate the effectiveness of Reflexology on anxiety among women undergone abdominal hysterectomy. The research design selected for the study was non equivalent pretest posttest control group design. 60 samples were selected by using purposive sampling technique (30 in experimental group, 30 in control group). Pre-test pain and anxiety level was estimated on the second post-operative day by using Visual Analogue Pain Scale and Modified Spillberger State Trait Anxiety Questionnaire followed by Reflexology (foot massage) for experimental group. Post-test was conducted by using the same scale on fifth post-operative day for both group. Ethical aspect was maintained throughout the study. The data were analyzed by using descriptive and inferential statistics. The study result shows that the pre-test mean value for pain is 8.53 and pre-test SD is .97 and post-test mean is 4.30 and post-test SD is 1.11. The mean difference is 4.23. The calculated T Value is 23.86 is higher than the table value 2.042. The pre-test mean value for anxiety is 46.93 and pre-test SD is 1.50 and post-test mean is 28.76 and post-test SD is 4.82. The mean difference is 18.16. The calculated T Value is 22.68 is higher than the table value 2.042. Hence there is a reduction in pain and anxiety level after administration of Reflexology among women under gone abdominal hysterectomy. The study concluded that Reflexology found to be an effective non pharmacological therapy in reducing pain and anxiety level among women undergone abdominal hysterectomy.

## Introduction

The term hysterectomy originates from two Greek words “hystero” means uterus and “ectomy” means resection or removal from the human body. The first subtotal abdominal hysterectomy was performed by Walter Burnham in 1853, the first elective abdominal hysterectomy was performed by Clay and Koeberle in 1863, and the first laparoscopic was performed hysterectomy by Harry Reich in 1988 (Janet M. Torpy 2007).

Hysterectomy is offered for Endometriosis that is a condition in which cells that usually the womb grow outside the womb, Adenomyosis – a type of endometriosis in which cells that usually line the womb grow in the womb muscle, Enlarged or painful fibroids – non cancerous growths of muscle and fibrous tissue in the womb, irregular or heavy

menstrual bleeding, uterine prolapse – when the womb drops out of position into the vagina (John Hopkins 2009).

The Risk associated with abdominal hysterectomy include Blood clots, Infection, Excessive bleeding, Adverse reaction to anesthesia, Damage to the Urinary tract, bladder, rectum or other pelvic structures during surgery, which may require further surgical repair, Earlier onset of menopause even if the ovaries aren't removed (M. Beattie 2005).

Post operative pain is a consequence of tissue damage from surgical incision. The chemical mediators generate local pain sensation. The pain will reach the brain through dorsal horn. The pain sensations recognized and interpreted perception of pain in the end result of the neural activity of pain transmission and the reticular system was responsible for the emotion and behavioural response to pain (Wstead and Bunasi K 2005).

Operative anxiety is often not surprising to patients, but the feeling can worsen after the procedure is done. Even as they recover physically, their mental health suffers as they experience sadness, fatigue or anxiety all of these symptoms will cause postoperative depression (J. Eval 2009)

### Need and significance of the study

Hysterectomy is often an “end of the road” decision for women who may be debilitated from months of heavy bleeding. Hysterectomy is a common surgery done to a large number of women who belong to late reproductive age group. Abdominal hysterectomy is more prevalent in low socio economic groups of women and is considerably more common in the developing world than in the west.

Mahel (1999) reported that the advantages of an abdominal hysterectomy are lower incidence of damage to the urinary tract and blood vessels. It also allows the repair of a prolapse at the same time. The disadvantages are more pain, a lengthier hospital stay and longer recovery time.

There are several pharmacological methods to control pain and anxiety, but in the recent years, several studies have been done on non – pharmacological methods of pain management due to their temporary effects and side effects of pharmacological methods such as benzodiazepines and analgesics. Two of the widely accepted non – pharmacological methods are reflexology (a form of foot massage that targets points on the foot which are believed to correspond with body parts) and simple massage therapy (Puthusseril. V 2006).

### Statement of the problem

A study to evaluate the effectiveness of reflexology on pain and anxiety among women undergone abdominal hysterectomy in Sree Mookambika Medical College Hospital at Kulasekharam.

### Objectives of the study

1. To assess the level of pain among women undergone abdominal hysterectomy in experimental and control group before and after intervention.
2. To assess the level of anxiety among women undergone abdominal hysterectomy in

experimental and control group before and after intervention

3. To evaluate the effectiveness of Reflexology on pain among women undergone Abdominal Hysterectomy in experimental group.
4. To evaluate the effectiveness of Reflexology on anxiety among women undergone Abdominal Hysterectomy in experimental group.
5. To find out the association between the level of pain among women undergone abdominal hysterectomy and their selected demographic variables such as age, religion, education, occupation, income, type of marriage, type of family, indication of hysterectomy, number of children.
6. To find out the association between the level of anxiety among women undergone abdominal hysterectomy and their selected demographic variables such as age, religion, education, occupation, income, type of marriage, type of family, indication of hysterectomy, number of children.

### Hypothesis

- H1 - There is a significant reduction in pain perception score in experimental group after Reflexology.
- H2 - There is a significant reduction in anxiety score in experimental group after Reflexology.
- H3 - There is a significant association between the pain among women undergone abdominal hysterectomy and their selected demographic variables such as age, religion, education, occupation, income, type of marriage, type of family, indication of hysterectomy and number of children.
- H4 - There is a significant association between the anxiety among women undergone abdominal hysterectomy and their selected demographic variables such as age, religion, education, occupation, income, type of marriage, type of

family, indication of hysterectomy and number of children.

## Operational definitions

### 1. Effectiveness :

In this study it refers to the extent to which the pain and anxiety level is reduced among women undergone abdominal hysterectomy after reflexology by comparing the post test score of experimental and control group.

### 2. Reflexology (Foot Massage)

Reflexology refers to the stimulation of the skin and underlying tissues on the foot with varying degrees of hand pressure. In this study Reflexology involves applying pressure to ankle on feet for 10-15 minutes.

### 3. Pain :

In this study it refers to the unpleasant feeling experienced by women undergone abdominal hysterectomy measured by Visual Analog Pain Scale.

### 4. Anxiety :

In this study it refers as a feeling of uneasy and worry related to abdominal hysterectomy measured by using Modified Spillberger State Trait Anxiety Questionnaire.

### 5. Abdominal hysterectomy :

In this study it refers to the surgical removal of uterus through an incision in the lower abdomen.

### 6. Women :

Women the age of 35-60 years undergone abdominal hysterectomy.

## Conceptual framework

The conceptual framework based on Bettyneuman's (1989) model.

## MATERIAL SIGN METHODS:

### Research design

Research design used in this study non equivalent pretest posttest control group design.

## Setting of the study

The study was conducted in Sree Mookambika Medical College Hospital at Kulasekharam. It is situated with in the college campus.

## Population

The target population : All women who have undergone abdominal hysterectomy at Sree Mookambika Medical college Hospital at Kulasekharam.

Accessible population : Women who have undergone abdominal hysterectomy and who meets the inclusion criteria.

## Sample size

Sample consists of 60 women who have undergone abdominal hysterectomy. Out of 60, 30 samples allotted to the experimental group and 30 allotted to the control group.

## Sampling technique

Purposive sampling technique was used for the study.

## Inclusion criteria :

- ❖ Post operative women who have undergone abdominal hysterectomy at the age of 35 - 60 years
- ❖ Women who are willing to participate in this study.
- ❖ Women who are free from neurological or psychological disorder.

## Exclusion criteria :

- ❖ Women who have undergone vaginal hysterectomy
- ❖ Women who have damaged skin or tissues on their feet.
- ❖ Severe psoriasis or eczema on foot.
- ❖ Women who have cardiac problems and hypertension.
- ❖ Patient who are under the effect of anesthesia.

**Data collection tool**

The data collection used for the study was

Demographic variables

Visual analog pain scale and modified Spillberger State Trait Anxiety Questionnaire.

**Description of the tool**

The tool consists of two sections. Section A and Section B.

**Section A :**

It deals with demographic variables such as age, religion, education, occupation, income, type of marriage, type of family, indications of hysterectomy, number of children's.

**Section B :**

**Visual Analog Pain Scale :**

The visual analog pain scale is used to measure the severity of pain before and after the intervention.

**Section C :**

**Modified Spillberger State Trait Anxiety Questionnaire**

The modified Spillberger state trait Anxiety Questionnaire is used to measure the anxiety level before and after the intervention. The modified spillberger Anxiety Questionnaire consist of 15 questions and it has four options.

**Data collection procedure**

Data was collected in Sree Mookambika Medical College Hospital in the month of October 2015. 60 samples were selected based on inclusion criteria. The sample was allotted to experimental and control group by purposive sampling technique. Pre test was conducted for both experimental group and control group by using visual analogue pain scale and modified Spillberger state trait anxiety questionnaire. For experimental group Reflexology was given for 10-15 minutes for 4 days, Whereas control group did not receive any intervention. Post test was

conducted after reflexology for experimental group and with out reflexology for control group by using the same scale.

**ANALYSIS AND INTERPRETATION:**

**Section A :**

This section deals with the demographic variables of the subjects selected by the investigator.

Fig. 1: Distribution of demographic variables according to Age in experimental and control group presented as bar diagram in figure 1

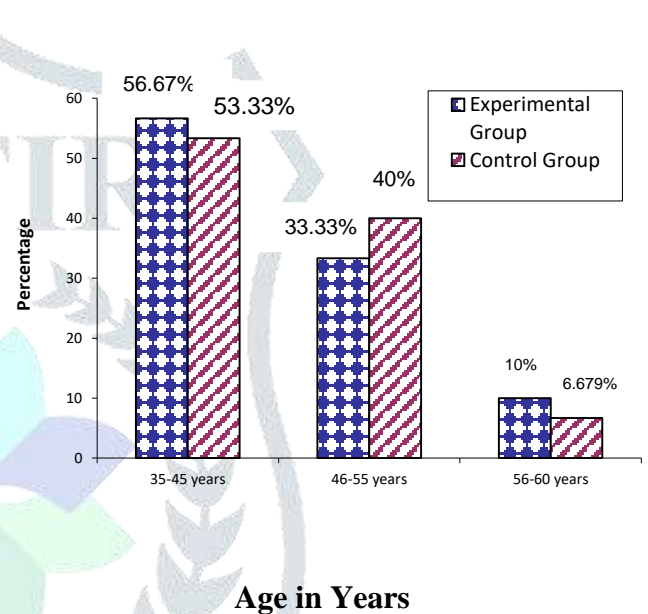


Figure 1 : Distribution of Sample According to Age

Distribution of demographic variables according to education presented as bar diagram in figure 2

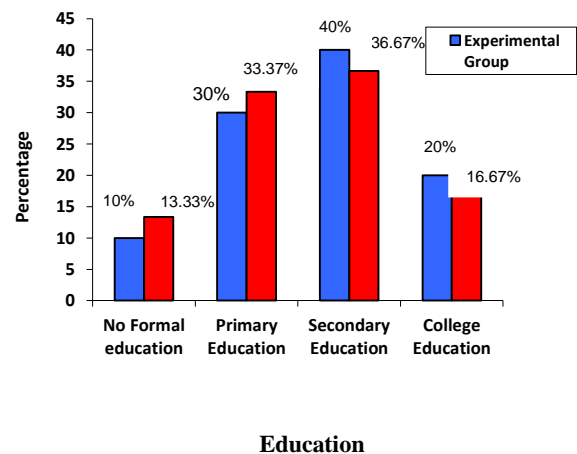
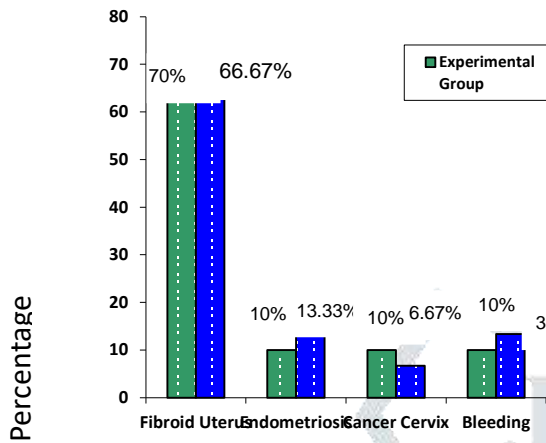


Figure 5 : Distribution of Sample According to Education

**Section B : Pre test and post test level of pain and anxiety:**

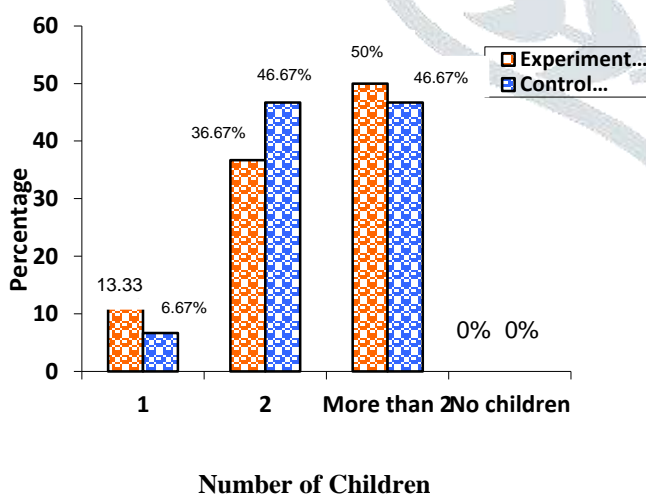
Distribution of demographic variables according to Indication of hysterectomy presented as bar diagram in figure 3.



**Indication of Hysterectomy**

**Figure 10 : Distribution of Sample According to Indication of Hysterectomy**

Distribution of demographic variables according to number of children presented as bar diagram in figure 4



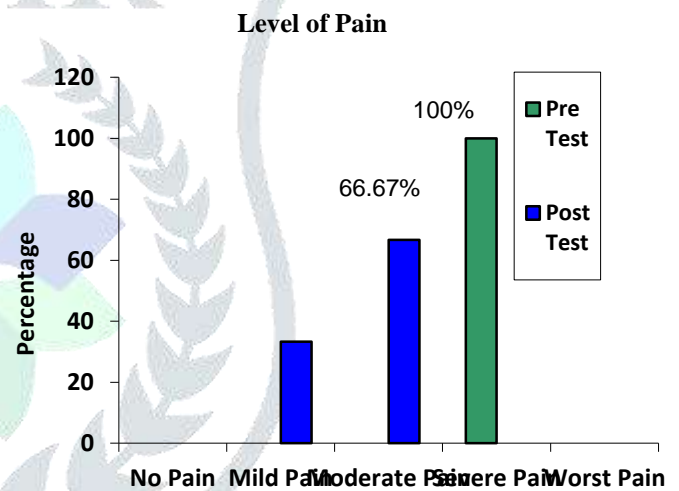
**Number of Children**

**Figure 4 : Distribution of Sample According to Number of Children**

Frequency and percentage Distribution According to the pretest and posttest level of pain among women undergone abdominal hysterectomy in Experimental group N=30

The above table 2 shows that all the samples had severe pain (100%) and no one had no pain, mild pain, moderate and worst pain in the experimental group. In the post test 33.33% had mild pain and 66.67% had moderate pain and no one had severe and worst pain.

The above table two findings are presented in figure 5.

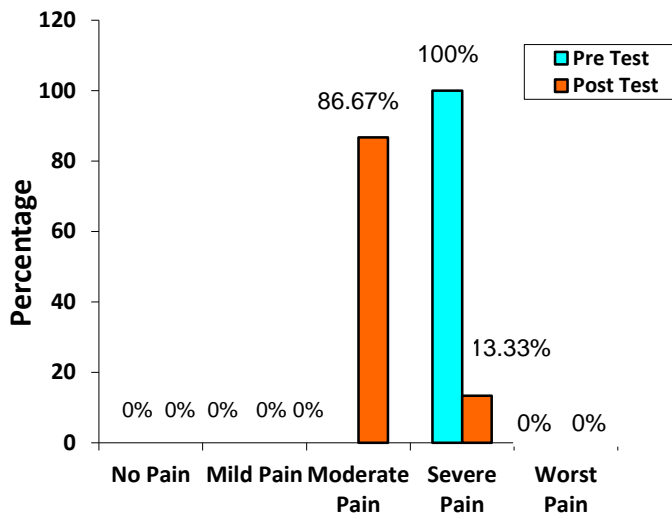


**Figure 5 : Pre and post test level of pain in Experimental group**

Frequency and percentage Distribution According to the pretest and post test level of pain among women undergone abdominal hysterectomy in control group N=30

The above table 3 shows that 100% of the sample had severe pain and no one had no pain mild, moderate, and worst pain. In post test 86.67% had moderate pain and 13.33% had severe pain.

The above table 3 findings are presented in figure 6



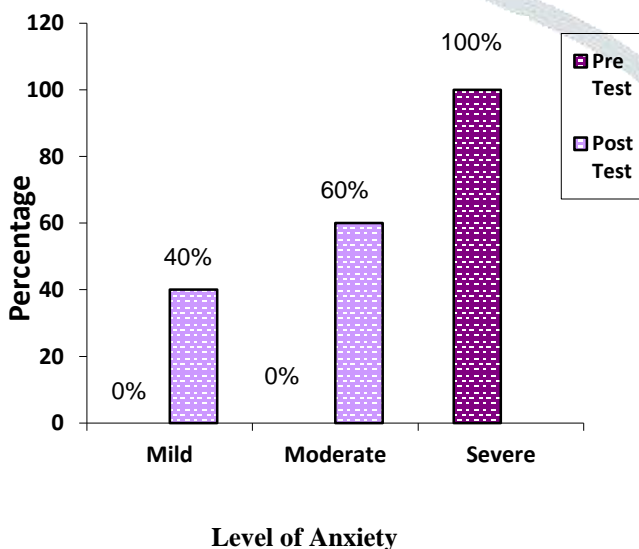
**Level of Pain**

**Figure 6 : Pre and Post test level of pain in control group.**

Frequency and percentage Distribution According to the Pretest and post test level of anxiety among women undergone abdominal hysterectomy in experimental group N=30

The above table 4 shows that in pretest all the samples had severe anxiety (100%) and no one had mild and moderate anxiety. In the post test 40.00% had mild anxiety and 60.00% had moderate anxiety.

The above table 4 findings are presented in figure



**Level of Anxiety**

**Figure 7 : Pre and Post test level of anxiety in Experimental group.**

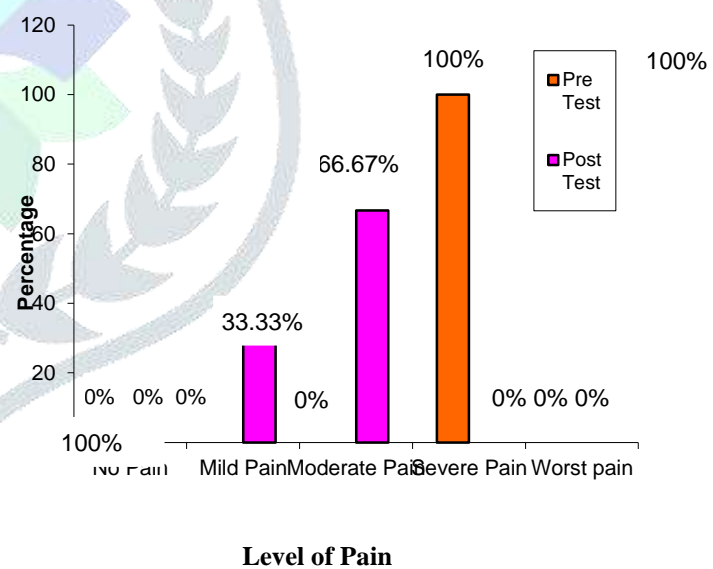
**Comparison of pre test and post test level of pain and Anxiety**

This section deals with the Comparison of pre test and post test level of pain and Anxiety among women undergone abdominal hysterectomy in both groups.

The above table 6 shows that in experimental group, the pretest score shows that (100%) had severe pain and none of them having no pain, mild pain, moderate pain and worst possible pain, the post test score shows that 33.33% had mild pain and 66.67% had moderate pain and none of them having no pain, severe pain and worst possible pain.

In control group the pretest score shows that (100%) had severe pain and none of them having no pain, mild pain, moderate pain and worst possible pain, the post test score shows that 86.67% had moderate pain and 13.33% had severe pain and none of them having no pain, mild pain, and worst possible pain.

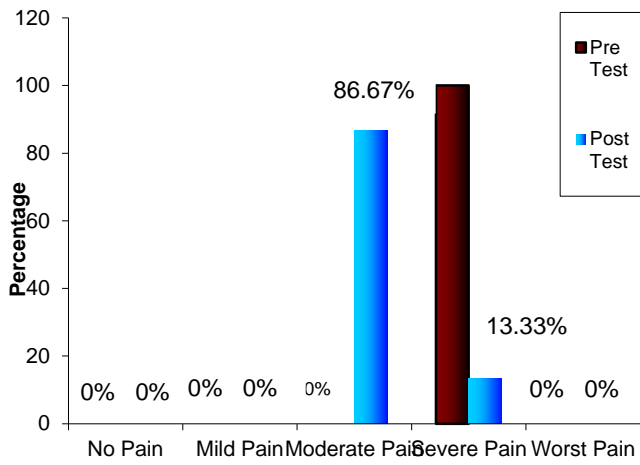
The above findings are presented as bar diagram in figure 8 and 9.



**Level of Pain**

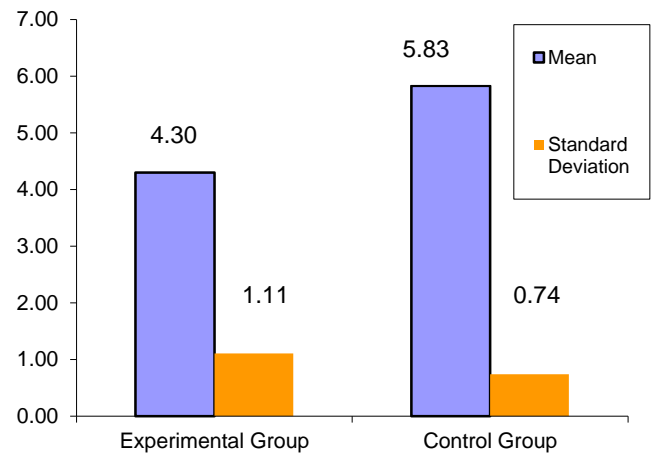
**Figure 8 : Comparison of Pre test and Post test pain score in experimental group**

0%



**Level of Pain**

**Figure 9 : Comparison of Pre test and Post test pain score in Control group**



**Effectiveness of Reflexology on Pain**

**Figure 10 : Effectiveness of Reflexology on pain among women undergone abdominal hysterectomy in Experimental and control group.**

**Section C : Effectiveness of reflexology on pain and anxiety.**

This section deals with the effectiveness of reflexology on pain and anxiety among women undergone abdominal hysterectomy in experimental and control group.

**Table 8**

Effectiveness of reflexology on pain among women undergone abdominal hysterectomy using post test score in experimental group with control group.

The above table 8 shows that in the experimental group, the post test mean pain score was  $4.30 \pm 1.11$  and in the control group was  $5.83 \pm .74$ . The mean difference was high and statistically significant. The pain score in the experimental group in lower than the control group due to the effect of reflexology.

**Section C : Association between demographic variables with pain and anxiety.**

This section deals with association between demographic variables with pain of selected subjects in experimental and control group and also deals with anxiety of selected subjects in experimental and control group.

**Table 10**

Association between demographic variables with the level of pain selected subjects in experimental and control group.

The above table 10 shows that the level of pain is associated with Age and Occupation at 0.05 level of significance and there was no association with demographic variables such as Religion, Education, Income, Type of Marriage, Type of Family, Indication of Hysterectomy, Number of children's.

**Result and discussion**

This chapter gives a brief account of the present study including result and discussion compared with some of the relevant studies done in different settings.

The present study was under taken to evaluate the effectiveness of reflexology on pain and anxiety among women undergone abdominal hysterectomy in Sree Mookambika Medical college Hospital at Kulasekharam.

Non equivalent pre test post test control group design for the study. The level of pain and anxiety was assessed by visual analog pain scale and modified spillberger state trait anxiety questionnaire. The result and discussion of the study are based on the findings obtained from the statistical analysis.

## Distribution of selected characteristics of study

### subjects :

The demographic variables of samples were the age, religion, education, occupation, income, type of marriage, type of family, indication of hysterectomy, number of children.

The study findings reveal that out of 30 women in the experimental group, 56.67% were in the age group of 35-45 years, 33.33% were in the age group of 46-55 years, 10.00% were in the age group of 56-60 years. For control group 53.33% were in the age group of 35-45 years, 40% were in the age group of 46-55 years, 6.67% were in the age group of 56-60 years. The percentage distribution based on religion reveals that in experimental group 43.33% belongs to Christian, 46.67% belongs to Hindu, 10% belongs to Muslim. For control group 40% belongs to Christian, 43.33% belongs to Hindu, 16.67% belongs to Muslim. The percentage distribution based on Education in the experimental group 10% belongs to no formal education, 30% belongs to primary education 40% belongs to secondary education, 20% belongs to college education, for control group 13.33% belongs to no formal education, 33.33% belongs to primary education, 36.67% belongs to secondary education, 16.67% belongs to college education. The percentage distribution based on occupation reveals that 60% belongs to Housewife 20% belong to coolie, 20% belongs to employee in experimental group. 56.67% belong to Housewife 16.67% belong to coolie, 26.66% belong to employee in control group. The percentage distribution based on family monthly income, in experimental group 36.67% were in Rs. 3001 -5000, 63.33% were above Rs. 5001. In control 33.33% were in Rs. 3001 – 5000, 66.67% were in above Rs. 5001. The percentage distribution based on type of marriage in experimental group and control group reveals that 10% belongs to consanguineous marriage and 90% belongs to non – consanguineous.

The percentage distribution based on type of family in experimental group 63.33% belongs to nuclear, 36.67% belongs to joint. For control group 56.67% belongs to nuclear, 43.33% belongs to joint family. The percentage distribution based on Indication of hysterectomy in experimental group 70% are due to fibroid uterus. 10% due to endometriosis, cancer cervix, bleeding, For control group 66.67% due to fibroid uterus, 13.33% endometriosis, 6.67% cancer cervix, 13.33% bleeding .The percentage distribution based on number of children for experimental group 13.33% has, 1children, 36.67% has 2 children 50% has more than 2 children. For control group 6.67% has children, 46.67% has 2 children 46.67% has more than 2 children.

The study findings of the 60 samples (30 in experimental group and 30 in control group) were discussed based on the objectives of the study.

The first objectives of the study was to assess the level of pain among women undergone abdominal hysterectomy in experimental and control group. This study reveals that out of 30 sample in experimental group. In pretest 0% had no pain, mild pain, moderate pain, worst possible pain, 100% had severe pain, In posttest 0% had no pain, 33.33% had mild pain, 66.67% had moderate pain, 0% had severe and worst possible pain. For control group in pretest 0% had no pain, mild pain, moderate pain, worst possible pain, 100% had severe pain. In post test 0% had no pain, mild pain, worst possible pain, 86.67% had moderate pain, 13.33% had severe pain.

The study findings were congruent with the study of Jaisy Jose et al (2012) conducted a study to assess the severity of pain during the first 2 days after abdominal hysterectomy. Eighty women were selected from 4 hospitals. Average pain was moderate on both days, but paired t test indicated that pain increased significantly during ambulation on day one ( $p=.009$ , sensation;  $p<.001$ , distress) and on day two ( $p=0.007$ , sensation;  $p=.030$ , distress). Both ( $p=.001$ ) decreased significantly during rest on day 2, but not on day one, Analysis of quartiles indicated that one fourth of the sample suffered severe sensation pain at all points on day two (60 to 74 mm on a 100 mm visual analogue scale) and moderate to severe sensation on day 3 (40 to 60 mm on a visual analogue scale). The lowest quartile had mild pain on both days (11 to 28 mm on day 1, and 7 to 14 mm on day two. Study revealed that post operative patients have



moderate to severe pain that is relieved with patient controlled analgesia and use of non pharmacologic intervention.

The second objectives of the study is to assess the level of anxiety among women undergone abdominal hysterectomy in experimental and control group. This study reveals that for experimental group in pretest 0% had mild, moderate anxiety, 100% had severe anxiety. In post test 40% had mild anxiety, 60% had moderate anxiety. For control group in pre test 0% had mild and moderate anxiety, 100% had severe anxiety. For post test 0% had mild anxiety, 76.67% had moderate anxiety, 23.33% had severe anxiety.

The study findings were congruent with the study of Zeev N Kain et al (2000) conducted a study to determine whether psychological variables such as preoperative anxiety can serve as predictors for the postoperative pain response. The study sample include women who under went elective abdominal hysterectomy (n-53). Path analysis demonstrated that there are both direct and indirect effects of preoperative state anxiety on post operative pain. Pre operative state anxiety is a significant positive predictor of the immediate postoperative pain ( $\beta=0.30$ ), which in turn, is a positive predictor of pain on the wards ( $\beta=0.54$ ). Pain on the ward, in turn, is predictive for pain at home ( $\beta=0.30$ ). The results of this study indicate that pre operative anxiety may have a critical role in the chain of events that controls the postoperative pain.

The third objectives of the study is to evaluate the effectiveness of Reflexology on pain among women undergone abdominal hysterectomy. This study reveals that the experimental group, the post test mean pain score was  $4.30 \pm 1.11$ , and in the control group was  $5.83 \pm 7.4$ . The mean difference was high and statistically significant. The pain score in the experimental group is lower than the control group due to the effect of reflexology on pain.

The study findings were congruent with the study of Ms. Chitra et al (2003) conduct a study to assess the effectiveness of foot massage on pain among women who have undergone abdominal hysterectomy. in the experimental group 20.73, average pain intensity scale 18.92, unpaired 't' test values should that the calculated t value in both the experimental and control group by using SFMPQ in post test (1) 2.503, post test (2) 2.259 and post

test (3) 2.258; using average pain intensity scale in post test (1) 2.608, post test (2) 2.949 and post test (3) 3.815; using current pain intensity scale in post test (1) 2.177, post test (2) 2.476 and post test (3) 2.131 ( $t(39) = 1.960$ )  $P \leq 0.05$  respectively. The study concluded that there was a significant reduction on pain among women who have undergone abdominal hysterectomy in experimental group than control group.

The fourth objective of the study was to evaluate the effectiveness of Reflexology on anxiety among women undergone abdominal hysterectomy. This study reveals that in the experimental group the post test mean anxiety score was  $28.76 \pm 4.82$  and in the control group was  $38.83 \pm 2.90$ . The mean difference was high and statistically significant the anxiety score in the experimental group is lower than the control group due to the effect of reflexology.

The study findings were congruent with the study of Maryami et al (2013) conducted a study to determine the effect of foot massage on anxiety level after hysterectomy. The result showed that the mean of the anxiety score was not significant different between the two groups before the interventions ( $P=0.21$ ). After the intervention there was significant difference between the two groups in the anxiety score ( $P<0.001$ ). It was concluded that foot massage can reduce anxiety in patients who underwent hysterectomy.

The fifth objectives of the study was to find out the association between the level of pain among women undergone abdominal hysterectomy and their selected demographic variables such as age, religion, education, occupation, income, type of marriage, type of family, indication of hysterectomy, number of children.

The above table describes the association between the level of pain and selected demographic variables in both experimental and control group. The table shows that the level of pain is associated with Age, Occupation and there is no association between religions, education, income, type of marriage, type of family, indication of hysterectomy, number of children.

The sixth objectives of the study was to find out the association between the level of anxiety among women undergone abdominal hysterectomy and there selected demographic variables such as age, religion, education,

occupation, income, type of marriage, type of family, indication of hysterectomy, number of children.

The above table describes the association between the level of anxiety and selected demographic variables in both experimental and control group. The table shows that the level of anxiety is associated with Age, number of children and there is no association between religions, education, Occupation, income, type of marriage, type of family, indication of hysterectomy,

### CONCLUSION:

The study was undertaken to evaluate the effectiveness of reflexology (foot massage) on pain and anxiety among women undergone abdominal hysterectomy in Sree Mookambika Medical College Hospital at Kulasekharam in Kanyakumari District.

### Conclusion :

The conclusion drawn from the findings of the study are as follows :

- Reflexology (foot massage) are found to be an effective nursing intervention in reducing pain and anxiety among women undergone abdominal hysterectomy.
- Reflexology (foot massage) are found to have no side effects when compared with other pharmacological treatments.
- Patient's satisfaction is very much higher in this intervention.
- The findings of the study enlighten the fact that reflexology (foot massage) can be used as a cost effective nursing intervention in reducing the pain and anxiety among women undergone abdominal hysterectomy.

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