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A STUDY TO ASSESS THE EFFECTIVENESS OF FOOT ZONE THERAPY ON LEVEL OF POST-OPERATIVE PAIN, SLEEP AND BOWEL PATTERN AMONG PATIENTS WITH SELECTED ABDOMINAL SURGERY AT ASHWIN HOSPITAL, COIMBATORE

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ABSTRACT

Statement of the Problem: A study to assess the effectiveness of foot zone therapy on level of post-operative pain, sleep and bowel pattern among patients with selected abdominal surgery at Ashwin hospital, Coimbatore. **Objectives:** To evaluate the effectiveness of zone therapy on post operative pain among patients with selected abdominal surgery in experimental and control group. To evaluate the effectiveness of zone therapy on post operative sleep among patients with selected abdominal surgery in experimental and control group. To evaluate the effectiveness of zone therapy on post operative bowel pattern among patients with selected abdominal surgery in experimental group. To determine the correlation between the post operative pain, sleep and bowel pattern among patients with selected abdominal surgery before and after zone therapy in experimental group. To determine the association between the post operative pain, sleep and bowel pattern among patients with selected abdominal surgery with their demographic variables in experimental group. **Methodology:** Pre-test post-test Control Group design and post test only control group design as subtypes of Quasi Experimental Research design was adopted for assessing the effectiveness of zone therapy on the level of post operative pain, sleep and bowel pattern among patients with abdominal surgery. The selected sample size was 40, out of which 20 belong to experimental group and 20 belong to control group, selected by non probability convenient sampling technique. **Results:** Descriptive and inferential statistics were used to analyze the values. The obtained 't' value for the level of post operative pain, sleep and bowel pattern after performing zone therapy were 31.57, 60.05 and 13.94. **Conclusion:** The zone therapy has significant effect in level of post operative pain, sleep and bowel pattern among selected abdominal surgery patients.

KEYWORDS

Effectiveness, Foot zone therapy, Abdominal surgery, Post operative pain, Sleep and Bowel pattern.

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INTRODUCTION

Surgery has become an integral part of global health care, with an estimated 234 million operations performed yearly. A significant proportion of the population has undergone one or the other forms of surgical procedures at one or more points in the life time of an individual (Sanjay K, 2019).

Physiological responses to pain, sleep and bowel pattern create harmful effects that prolong the body's recovery after surgery. Complementary strategies like massaging specific foot zones promotes postoperative well-being with minimum side effects. (Wang H L, 2018)¹.

Need for the study

Wallersteiner (2017)² estimates that there were 7.4 million major abdominal surgeries per year in the world. This number is not expected to change significantly, growing to 8.1 million surgeries in 2030 in world. In India the incidence of abdominal surgery is 12.6% among adult males and 20.8% among adult females. It is found that nursing care rarely focuses on pain, associated sleeplessness and constipation control measures except medication administration after the surgery. Now a day's people are more likely to get treatment without side effect. So they prefer complementary and alternative medicine. This inspired the researcher to do this study.

Objectives

To evaluate the effectiveness of foot zone therapy on post operative pain among patients with selected abdominal surgery in control and experimental group.

To evaluate the effectiveness of foot zone therapy on post operative sleep among patients with selected abdominal surgery in control and experimental group.

To evaluate the effectiveness of foot zone therapy on post operative bowel pattern among patients with selected abdominal surgery in experimental group.

To determine the correlation between the post operative pain, sleep and bowel pattern among patients with selected abdominal surgery before and after foot zone therapy in experimental group.

To determine the association between the post operative pain, sleep and bowel pattern among patients with selected abdominal surgery with their demographic variables in experimental group.

Hypothesis

H₁

There is a significant difference in pain between control and experimental group among patients with selected abdominal surgery.

H₂

There is a significant difference in sleep between control and experimental group among patients with selected abdominal surgery.

H₃

There is a significant difference in bowel pattern between control and experimental group among patients with selected abdominal surgery.

H₀

There is a significant association between the demographic variables with level of pain, sleep and bowel pattern in experimental group.

Assumptions

Foot zone therapy reduce the pain among patients with selected abdominal surgery

Foot zone therapy induce the sleep among patients with selected abdominal surgery

Foot zone therapy improve bowel elimination pattern among patients with selected abdominal surgery

RESEARCH METHODOLOGY

Research approach

Quantitative research approach was selected to assess the effectiveness of foot zone therapy on level of post operative pain, sleep and bowel pattern among patients with selected abdominal surgery.

Research design

For pain and sleep

Pre-test post test control group design as a sub type of quasi experimental research design was adopted for pain and sleep assessment in this study.

C O₁ O₂

E O₁ x O₂

C - Control group

E - Experimental group

O₁ - Pre test assessment

X - Intervention (foot zone therapy)

O₂ - Post test assessment

For bowel pattern

Post test only control group design as a sub type of quasi experimental research design was adopted for bowel pattern assessment in this study.

C O₂

E x O₂

C - Control group

E - Experimental group

X - Intervention (foot zone therapy)
O₂ - Post test assessment

RESEARCH SETTING

The study was conducted among patients with selected abdominal surgery in Ashwin hospital at Coimbatore. It is a 350 bedded multispecialty hospital, which is situated 7 Kilometers away from PPG College of Nursing.

Sample

The accessible population of the study constitutes all the patients who were undergone selected abdominal surgery in Ashwin Hospital at Coimbatore.

Sample size

The sample size for the present study is 40, out of which 20 belong to Experimental group and 20 belong to Control group.

Sampling technique

Non probability convenient sampling technique was adopted for the present study.

Development and description of the tool

The researcher has developed a tool after reviewing the literature to assess the level of post-operative pain, sleep and bowel pattern. It has four sections.

Section – A: Demographic Variables

Demographic variables which include age in years, sex, education, occupation, religion, type of surgery, duration of surgery, drugs used to relieve pain, use of drugs to induce sleep and use of complementary therapies.

Section – B: Numerical Pain Intensity Scale

Numerical pain intensity scale is used to assess the level of post-operative pain on the 2nd post operative day before foot zone therapy and to reassess the pain level on the 5th post operative day after foot zone therapy. Numerical pain intensity scale is a movable scale containing the pain score from 0-10. The division of the scale expressed the pain level in ascending order in which the level 0 indicates no pain, 1-3 mild pain, 4-7 moderate pain, 7-10 the pain level is at its worst point. The patient will be asked to indicate the pain intensity as they experience at the moment by marking at the point. The reading was noted based on the point at which the patient marked.

Scoring

0 - No Pain
1-3 - Mild Pain
4-7 - Moderate Pain
>7 - Severe Pain

Section – C: Modified Clark's Sleep Assessment Scale

Modified Clark's sleep assessment scale is a table consists of 10 questions. Each questions was assessed by using modified Likert Scale which has 5 options, according to the severity, the score was given as 0, 1, 2,3and 4. If the score was 0- sleep not disturbed at all, 1-a little bit, 2-moderately disturbed, 3-quite a bit and 4-extremely disturbed.

Scoring

Good sleep - 0-10
Mild disturbance - 11-20
Moderate disturbance - 21-30
Severe disturbance - 31-40

Section – D: Bristol stool assessment chart

Bristol stool assessment chart is a scale consists of 7 types of stool. Type 1 - Separate hard lumps, like nuts (hard to pass), type 2 - Sausage shaped but lumpy, type 3 - Like a sausage but with cracks on the surface, type 4 - Like a sausage or snake, smooth and soft, type 5 - Soft blobs with clear-cut edges, type 6 - Fluffy pieces with ragged edges, a mushy stool, type 7 - Watery, no solid pieces, entirely liquid.

Scoring

Type 1 – 2 - constipation
Type 3 – 4 - ideal stool
Type 5 – 7 - diarrhea

DATA COLLECTION PROCEDURE

The formal permission was obtained from medical director of Ashwin hospital, to conduct the study. Confidentiality and anonymity of the subject was maintained. The study was carried out for a period of one month. The samples were selected by using non probability convenient sampling technique on the basis of selection criteria. The purpose and duration of the study were explained to the samples to obtain their co-operation and informed consent was taken from the respondent. Among 40 samples, 20 samples were considered as control group and remaining 20 samples as experimental group.

The abdominal surgery patients who were selected for the control group were assessed for level of post-operative pain and sleep on the 2nd post-operative day by using numerical pain intensity scale and modified Clark's sleep assessment scale and routine care was given. On 5th post-operative day the level of post-operative pain, sleep and bowel pattern was assessed by using numerical pain intensity scale, modified Clark's sleep assessment scale and Bristol stool assessment chart.

The abdominal surgery patients selected for the experimental group were assessed for level of post-operative pain and sleep on the 2nd post-operative day before foot zone therapy by using numerical pain intensity scale and modified Clark's sleep assessment scale. Then foot zone therapy was given to the patient for 20 minutes twice a day, in the morning and the evening for 4 days. At the end of the 5th post-operative day post test was conducted by using numerical pain intensity scale, modified Clark's sleep assessment scale and Bristol stool assessment chart. The demographic variables are collected by using structured interview schedule.

Data analysis and interpretation

Table No.1 shows for 38 degrees of freedom and at 0.05 level of significance, the table value was 2.021 and the calculated value was 0.719 which is less than the table value. Hence there is no significance difference existing between the control group and experimental group before performing foot zone therapy on the level of post-operative pain. So the homogeneity was maintained between the groups.

Table No.2 shows for 38 degrees of freedom and at 0.05 level of significance, the table value was 2.021 and the calculated value was 18.978 which was greater than the table value and hence there is significant difference existing between the control group and experimental group. It is concluded that the foot zone therapy is effective for reducing level of post-operative pain among selected abdominal surgery patients.

RESULTS AND DISCUSSION

Major findings of the study

For pain

The pre-test mean score of control group and experimental group before performing foot zone therapy was 9.7 and 9.6

The obtained 't' value of foot zone therapy on the level of post-operative pain among control and experimental group before performing foot zone therapy was 0.719

The post-test mean score of control group and experimental group after performing foot zone therapy was 7.15 and 0.95

The obtained 't' value of foot zone therapy on the level of post-operative pain among control group and experimental group was 18.978

The pre test mean score of experimental group on the level of post-operative pain was 9.6 and post test mean score of experimental group on the level of pain was 0.95

The obtained 't' value of foot zone therapy on the level of post-operative pain among experimental group was 31.57

The demographic variables like sex and occupation showed significant association with the pre test score of foot zone therapy on level of post-operative pain in the experimental group.

For sleep

The pre test mean score of control group and experimental group before performing foot zone therapy was 38.2 and 37.55

The obtained 't' value of foot zone therapy on the level of post-operative sleep among control and experimental group before performing foot zone therapy was 1.722

The post-test mean score of control group and experimental group after performing foot zone therapy was 32.65 and 2.45

The obtained 't' value of foot zone therapy on the level of post-operative sleep among control group and experimental group was 40.462

The pre test mean score of experimental group on the level of post-operative sleep was 37.55 and post test mean score of experimental group on the level of sleep was 2.45

The obtained 't' value of foot zone therapy on the level of post- operative sleep among experimental group was 60.054

The demographic variable sex showed significant association with the pre test score of foot zone therapy on level of post- operative pain in the experimental group.

For bowel pattern

The post- test mean score of control group and experimental group after performing foot zone therapy was 1.6 and 4.8

The obtained 't' value of foot zone therapy on the level of post operative bowel pattern among control group and experimental group was 13.94

The demographic variables like age, sex, education, occupation, religion, type of surgery, duration of surgery, drugs used to relieve pain, use of drugs to induce sleep and use of complementary therapies showed no significant association with the post test score of foot zone therapy on level of post- operative bowel pattern in the experimental group.

Table No.1: Comparison of post operative pain score in control group and experimental group before performing foot zone therapy

't' Test for the mean difference of post-operative pain score between control group and experimental group (n = 40)

S.No	Pre-test score of post operative pain	Mean	Standard Deviation	Table Value	't' Value
1	Control Group	9.7	0.16	2.021	0.719
2	Experimental Group	9.6	0.48		

Table No.2: Comparison of post-operative pain score in control group and experimental group after performing foot zone therapy

't' Test for the mean difference of post- operative pain score between control group and experimental group (n = 40)

S.No.	Post test score of post operative pain	Mean	Standard Deviation	Table Value	't' Value
1	Control Group	7.15	1.06	2.021	18.978*
2	Experimental Group	0.95	0.95		

*significant

CONCEPTUAL FRAMEWORK

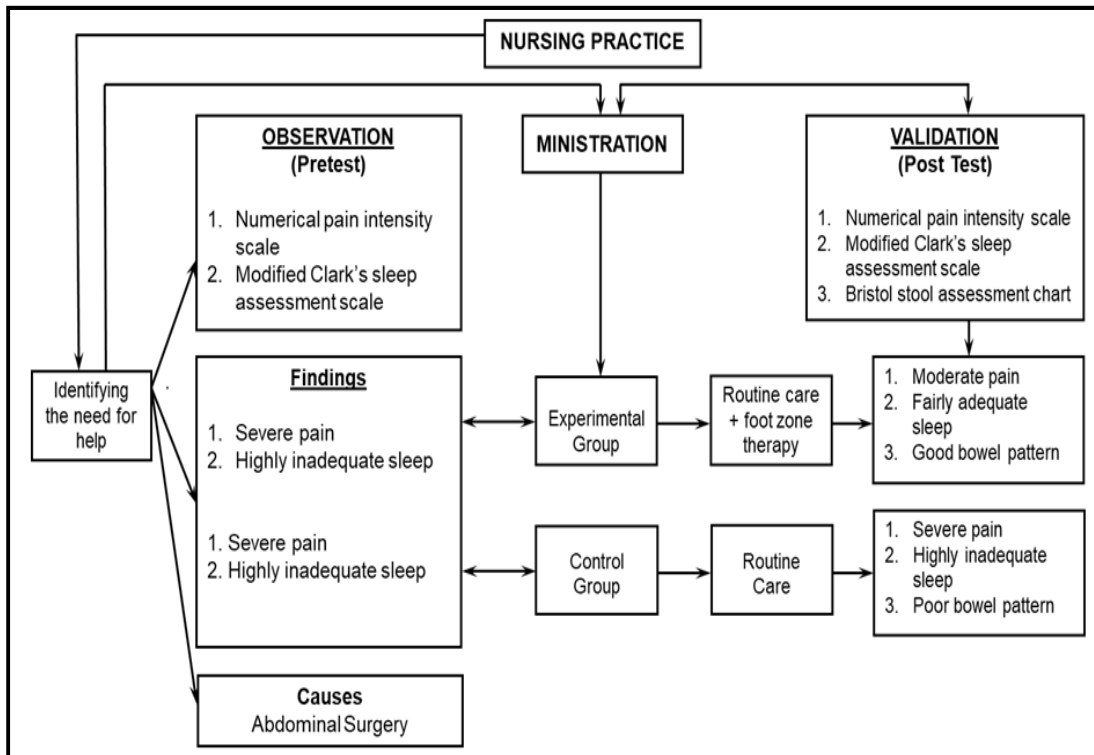


Figure No.1: Conceptual framework based on modified wiedenbach's helping art of Clinical Nursing Theory (1964)

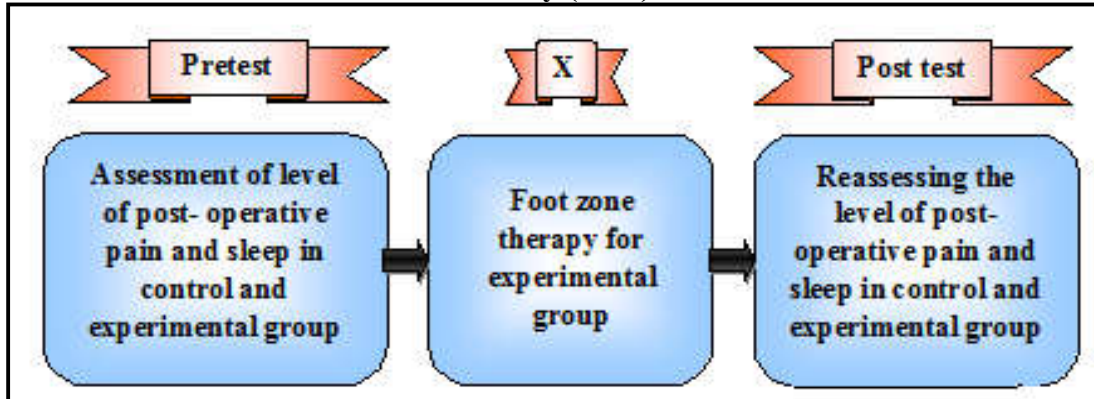


Figure No.2: The schematic representation of research design for pain and sleep assessment

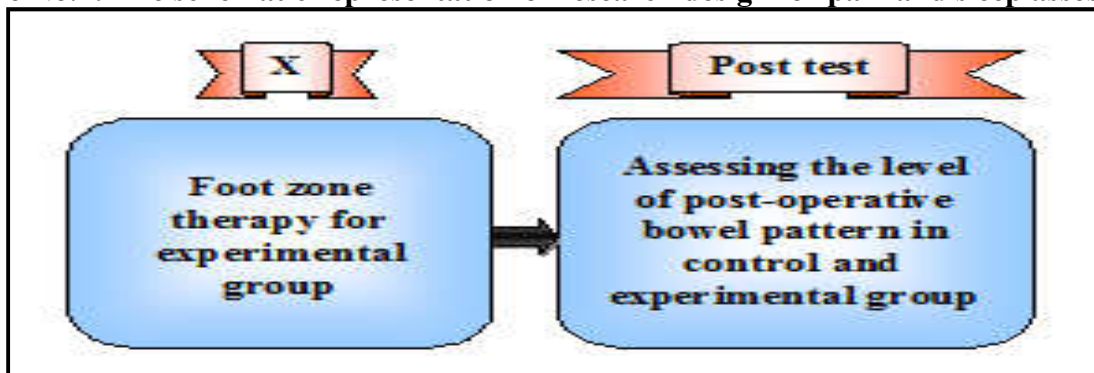


Figure No.3: The schematic representation of research design for bowel pattern assessment

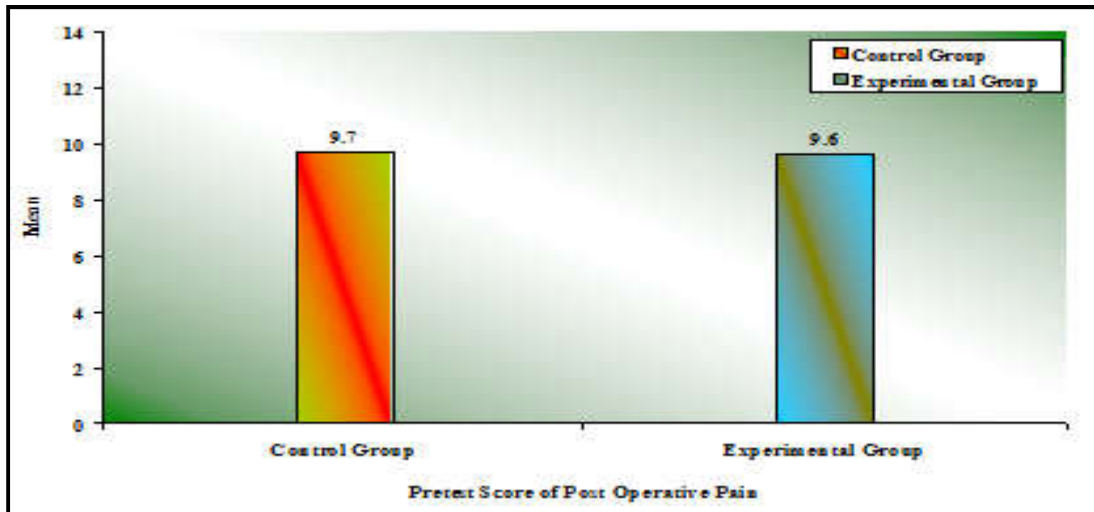


Figure No.4: Distribution of pretest mean of score of post operative pain in the control group and experimental group before performing foot zone therapy

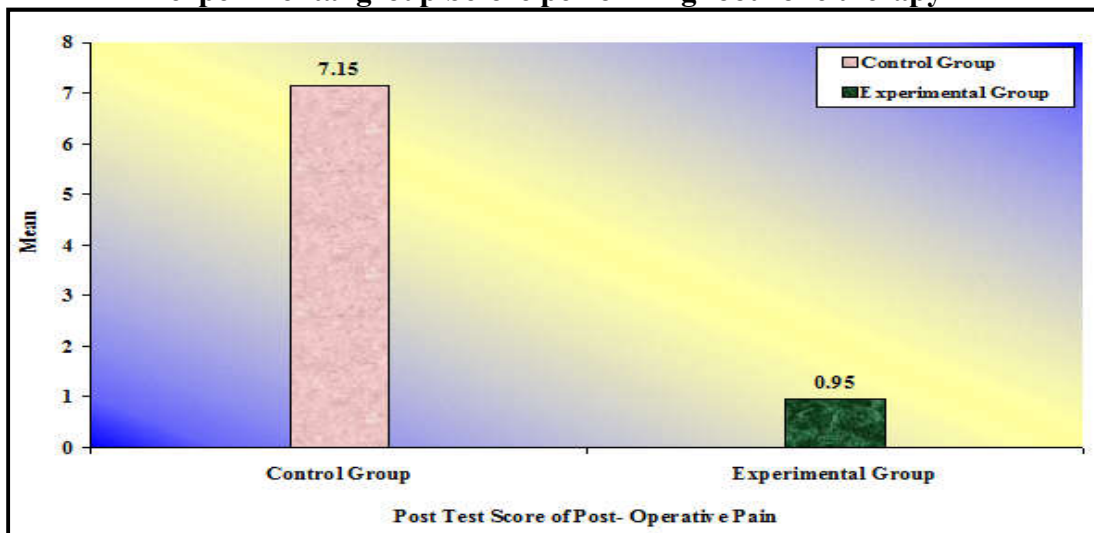


Figure No.5: Distribution of post test mean of score of post operative pain in the control group and experimental group after performing foot zone therapy

CONCLUSION

The obtained 't' value of post operative pain, sleep and bowel pattern between control group and experimental group was greater than the table value at 38 degrees of freedom at 0.05 level of significance, the table value was 2.021 and the calculated value for pain, sleep and bowel pattern were 18.76, 40.462 and 13.94. So the findings showed that the foot zone therapy has significant difference in the level of post operative pain, sleep and bowel pattern among selected abdominal surgery patients. Thus the formulated alternative hypothesis was accepted hence it is concluded that the foot zone

therapy has significant effect on post- operative pain, sleep and bowel pattern among selected abdominal surgery patients. The correlation 'r' test was done and there was a positive correlation exist between the pre and post test pain, sleep and bowel pattern score in experimental group. Chi-square test was used to find out the association of demographic variables with the post operative pain, sleep and bowel pattern score among selected abdominal surgery patients in experimental group. So the formulated hypothesis was accepted.

The demographic variables like sex and occupation showed significant association with the pre test score

of post- operative pain in the experimental group. The demographic variable sex showed significant association with the pre test score of post- operative sleep in the experimental group. The demographic variables like age, sex, education, occupation, religion, type of surgery, duration of surgery, drugs used to relieve pain, use of drugs to induce sleep and use of complementary therapies showed no significant association with the post test score of level of post- operative bowel pattern in the experimental group.

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CONFLICT OF INTEREST

We declare that we have no conflict of interest.

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