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Effectiveness of hand & foot massage in reducing post-operative pain

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Abstract

Introduction: Pain is a multialimensional phenomenon it is very difficult to define & it is more subjective & personal there are no objective measurements so it is nurses duty to help patients to overcome pain & make them comfortable. Post-operative pain is very common and develops naturally as warning symptoms its development can be predicted and should be prevented and treated.

Material and Methods: Female patients between 20 – 50 years, of age who has undergone abdominal surgery in selected tertiary care hospitals. A sample of 100 patients who had general abdominal surgery was recruited over a period of one year. Patients were randomly allocated into a control group (n = 50), and a massage group (n = 50).

Results: This study deals with the analysis and result of data collected from 100 female patients between age group of 20-50 years, among them 50 were control and 50 were who had undergone general abdominal surgery.

Conclusion: This study's findings concluded that pain and anxiety are commonly experienced symptoms in the majority of postoperative patients. Hand and foot massage as a non-pharmacological nursing intervention showed a significant impact on decreasing these symptoms. An increase in nurses' awareness about the importance of applying massage after surgery can relieve the feelings of pain and anxiety in many of these patients.

Keywords: Postoperative pain, hand and foot massage, nursing, awareness, surgery.

Introduction

Pain is a multidimensional phenomenon it is very difficult to define & it is more subjective & personal there are no objective measurements so it is nurses duty to help patients to overcome pain & make them comfortable [1]. Pain is a signal from ailing tissues to indicate that there is something wrong. It is often difficult to describe pain, because everyone reacts so differently to it. Each person's reaction varies, pain must be measured indirectly, based up on information offered by the pain suffers. Today pain has become the universal disorder a serious & public health issue & a challenge for healthcare providers [2]. American pain society states that it is not the responsibility of clients to prove that they are in pain; it is the caregiver's responsibility to accept the clients report of pain (2005) [3].

Post-operative pain is very common and develops naturally as warning symptoms its development can be predicted and should be prevented and treated. Despite the medication and aesthetics technique available, the prevalence of the post-operative pain is still high. Pain after abdominal surgery has a significant effect on physiological, psychological, and socioeconomic aspects of patients. Analgesics are not always effective in post-operative pain. Utilization of non-pharmacological interventions like massage therapy, ice therapy, and Music therapy may assist in alternation post-operative pain [4]. The degree of post-operative pain depends on the site of the surgery, surgery on thorax and upper abdominal region are usually more painful. Chronic pain reduces physical activity and leads to venous stasis and an increased risk of deep vein thrombosis and urinary tract motility etc. This may prolong the hospital stay [5].

Post-operative pain is a routine poorly controlled by pharmacological means alone. Complementary strategies based on sound research findings are needed to aid in postoperative pain relief as patients routinely report mild to moderate pain even though pain medications have been administered. Pain medicines may be more effective when combined with other pain relief techniques [6]. Massage is the simple way of easing post-operative pain as well as aiding relaxation, promoting a feeling of wellbeing and a sense of receiving good care. Massage is also thought to increase the threshold of pain through the release of

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endorphin. Massage is recognized as a safe treatment modality without risk or side effect [7]. Massage is an extended form of touch, which results in mutual energy exchange. It soothes pain and produces relaxation further more pharmacological intervention alone may not address all the factors involved in the conscious experience of pain. Hand and foot massages have the potential to aid surgical pain relief, it is a complementary or adjunctive medical technique, yet there is a scant research related to use of massage therapy in post-operative management. Used in tandem with pharmacological treatments, hand and foot massage may have the potential to substantially improve acute pain relief [8].

Varieties of pharmacological and non-pharmacological interventions to enhance optimal pain relief are available; however, patients' responses are individualized [9]. Pain medication is still the current gold standard treatment for acute postoperative pain relief [10]. However, there is an increasing global interest in applying alternative modalities and non-pharmacological approaches for pain and anxiety relief to overcome the adverse effects of medication, such as massage.

Objectives

1. To assess the level of pain among women in the experimental group and the control group as measured by Numerical Pain Rating Scale.
2. To evaluate the effectiveness of hand and foot massage in reducing postoperative pain among female patients who undergone abdominal surgery.
3. To determine association between level of pain and selected demographic variables.

Material and Methods

Female patients between 20 – 50 years, of age who has undergone abdominal surgery in selected tertiary care hospitals. A sample of 100 patients who had general abdominal surgery was recruited over a period of one year. Patients were randomly allocated into a control group (n = 50), and a massage group (n = 50).

Inclusion Criteria

1. Females between 20-50 years of age who has undergone abdominal surgery.
2. Those who are willing to participate.
3. Who will be present at the time of data collection?

4. Female patients who are haemodynamically stable.
5. Common abdominal surgeries like L.S.C.S, abdominal hysterectomy, open cholecystectomy, laparotomy, hernia repair, open appendectomy.

Exclusion criteria

1. With foot ulcer and arthritis
2. Patients who are critically ill
3. Patients who are under mechanical ventilator support.

The sheet had two parts, patients' characteristics and medical data, and it was used to collect the patients' characteristics such as age, gender, education and employment status. The medical data sheet was used to record the diagnosis, type of surgery, etc. The history of analgesic consumption was collected from the patient's medical records.

Numeric Rating Scale (NRS) for pain

The Pain Visual Analogue Scale (VAS) is the commonly used standardized pain measurement scale, which measures pain intensity. However, its test-retest reliability has been shown higher among literate ($r = 0.94$) than illiterate patients ($r = r = 0.71$). [11] Numeric Rating Scale (NRS) is a segmented numeric version of the VAS, and it has a single 11-point numeric scale in which respondents select a number from 0 (no pain) to 10 (sever pain) to reflect the intensity of their pain. NRS has high test-retest reliability in both literate and illiterate patients ($r = 0.96$ & 0.95 , respectively) [11]. Therefore, NRS was used in this study to assess the pain intensity before and after each massage session. The patients were requested to select the number that represents their pain intensity. The overall score of the NRS ranges from 0–10, and it can also describe pain intensity as no pain (0), mild pain (1-3), moderate pain (4-6), and severe pain (7-10). A foot and hand massage was performed for twenty-minutes for three days.

Results

This study deals with the analysis and result of data collected from 100female patients between age group of 20-50 years, among them 50 were control and 50 were who had undergone general abdominal surgery. The aim of the study was to determine the effectiveness of hand and foot massage on pain reduction and satisfaction among women who have undergone general abdominal surgery.

Table 1: Frequency and percentage distribution of sample characteristics in Control and Experimental group

Variables	Control		Experimental	
	Numbers	Percentage	Numbers	Percentage
Age groups				
20-30 years	30	60	20	40
31-40 years	15	30	20	40
41-50 years	5	10	10	20
Religion				
Hindu	28	56	26	52
Muslim	22	44	24	48
Education				
No formal education	0	0	8	16
Primary	5	10	18	36
Secondary	5	10	15	30
Graduation	25	50	5	10
Post-graduation	15	30	4	8
Occupation				

Professional	35	70	12	24
Home maker	15	30	38	76
Area of living				
Rural	40	80	43	86
Urban	10	20	7	14
Marital status				
Single	5	10	6	12
Married	42	84	39	78
Widower	3	6	5	10
Analgesia or anaesthesia in the past				
Yes	50	100	50	100
No	0	0	0	0
Pain relief method other than medications in the past				
Yes	0	0	0	0
No	50	100	50	100
Surgery in the past				
Yes	10	20	27	54
No	40	80	23	46

Table 2: Frequency and percentage distribution of women who have undergone abdominal hysterectomy, according to their level of pain in the experimental and control group before and after the intervention

Grading	Day I								Day II								Day III											
	Experimental				Control				Experimental				Control				Experimental				Control							
	Pre	0	60	90	Pre	0	60	90	Pre	0	60	90	Pre	0	60	90	Pre	0	60	90	Pre	0	60	90				
No pain																												
(f)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mild pain																												
(f)	0	0	0	0	0	0	0	0	20	20	12	0	2	0	0	0	4	42	30	25	6	12	9	10				
(%)	0	0	0	0	0	0	0	0	40	40	24	0	4	0	0	0	8	84	60	50	12	24	18	20				
Moderate pain																												
(f)	3	35	26	24	12	12	2	4	36	35	32	30	30	13	12	10	45	14	18	26	39	31	23	20				
(%)	6	70	52	48	24	24	4	8	72	70	64	60	60	26	24	20	90	28	36	52	78	62	46	40				
Severe pain																												
(f)	45	18	26	30	42	42	46	44	20	0	3	6	16	33	41	44	0	0	0	0	2	5	16	20				
(%)	90	36	52	60	84	84	92	88	40	0	6	12	32	66	82	88	0	0	0	0	4	10	32	40				
Worst possible pain																												
(f)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
(%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Discussion

The present study intended to assess the effectiveness of hand and foot massage on pain reduction and satisfaction among women who have undergone abdominal hysterectomy. The findings of the study have been discussed based on the present study objectives and findings of other studies.

Among the women 50% were in the age group of 20-30 years and 54% were Hindus. Most of the women had primary education 23%. 53% were homemakers and 83% of them lived in rural area.

In the present study the pain intensity scores in the experimental group was high before the intervention and the scores showed a significant decrease in the measurements recorded at 0th minute (immediately after the massage), 60th minute and 90th minute after the intervention and also there is significant reduction of pain in the experimental group than the control group and can be concluded as the hand and foot massage was effective in reducing the pain of women who had undergone general abdominal surgery. The reason for these findings was theoretized that hand and foot massage could certainly reduce pain because cutaneous stimulation stimulates nerve fibers which encourage the release of endorphins that have analgesic properties and

produce relaxation. Relaxation may increase pain threshold and modify individual’s pain perception. Hand and foot massage reduces pain based on Gate Control Theory also. The findings were supported by a non-equivalent pretest post-test control group study conducted in Korea to investigate the effect of foot massage on pain in post abdominal operative patients which showed a significant reduction in pain following foot massage.

The findings of the study revealed that all the women were highly satisfied with hand and foot massage. In congruent with these findings, a quasi-experimental research approach was used to determine the effect of ten minute foot massage in reduction of post-operative pain and the psychological response of the patient. The result indicates a significant difference in the pre and post massage pain score and the findings of the opinionnaire showed that 80-90% of the patients expressed a positive opinion of foot massage which shows a high acceptability rate^[12].

In the present study there was no significant association found between the pre interventional pain score and selected demographic variables. A similar study which supported the findings was that, there was no significant difference between the socio demographic characteristics of the control group and the intervention group except the educational

status ($p > 0.05$). There was relatively large number of women with higher degrees of education in the control group in contrast to the intervention group.

It is essential to highlight the important findings in the current study are congruent with previous studies^[13]. As our results show, hand and foot massage could help to decrease pain intensity and gave some amount of comfort to the patients. A review study that aimed to identify the effect of foot massage on relieving acute postoperative pain recommended that pharmacologic and non-pharmacologic management be used together to relieve pain. Using a pharmacologic approach alone may not fully relieve all aspects of acute postoperative pain^[14].

The results showed that on the day of surgery, massage was more effective than the usual care (UC) for affective and sensory pain, and better than vibration therapy for affective pain. On postoperative day 2, massage was more effective than UC for distress, and better than vibration therapy for sensory pain. However, after controlling for multiple comparisons and multiple outcomes, no significant differences were found^[15]. Several studies showed the efficacy of foot massage to decrease acute postoperative pain^[16, 17]. Our study findings support the efficacy of massage on relieving pain, where skin contact by massage is effective in relieving pain and anxiety.

Conclusion

This study's findings concluded that pain and anxiety are commonly experienced symptoms in the majority of postoperative patients. Hand and foot massage as a non-pharmacological nursing intervention showed a significant impact on decreasing these symptoms. An increase in nurses' awareness about the importance of applying massage after surgery can relieve the feelings of pain and anxiety in many of these patients. Also, nurses have a vital role in enhancing the knowledge and skills of post-operative patients and their caregivers through teaching sessions of how to use massage to relieve pain and anxiety after surgery.

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