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Research article

The effectiveness of progressive muscle relaxation therapy on postoperative pain

Jenish Varghese

M.O.S.C Medical College Kolenchery, Kerala, India.

Abstract

Pain is the most common problem after surgery in all clients. **Aim:** The main objective of the study was to assess the effectiveness of progressive muscle relaxation therapy on postoperative pain. **Materials and methods:** A total of 30 subjects between the age group of 15-75 years selected from the hospital by random sampling technique (15–orthopedic surgery, and 15 General abdominal surgeries). Inadequate postoperative pain relief may result in clinical and psychological changes that may increase the morbidity and mortality as well as the cost of treatment. As a whole, in addition to decreasing the quality of life postoperatively. It may be associated with deep vein thrombosis (DVT), and pulmonary embolism, pneumonia, delayed wound healing and demoralization. The need for alternative methods of pain relief is evident. **Results:** An exploration of new methods of pain control is necessary to reduce suffering. It has been postulated that relaxation training can be used to decrease muscle tension, a source of postoperative pain as well as another psychological variable of anxiety. Evaluative research approach with one group pretest post design was adopted. Progressive muscle relaxation technique was taught on the previous day of surgery. Tools consist of a demographic questionnaire and numerical pain scale used to identify samples. Results among 30 subjects showed 7 (23.3%) had moderate pain and23 (76.7%) had experienced severe pain before progressive muscle relaxation. A significant difference was found before and after practicing progressive muscle relaxation (t=; 26.150 P=0.000) from the results it was interpreted that practice of progressive muscle relaxation technique helps to reduce pain among postoperative patients. **Conclusion:** Study concluded that progressive muscle relaxation was effective postoperative pain management.

Key words: Postoperative muscle relaxation, pain scale.

***Corresponding author: Mr. Jenish Varghese**, M.O.S.C Medical College Kolenchery, Kerala, India. Email Id: jenishvarghese02@gmail.com

1. Introduction

Pain is a complex multidimensional experience. [01] For some it is a minor inconvenience for other it is a major problem that causes suffering and reduces quality of life [02]. An understanding of patient attitudes and concerns about postoperative pain is important for identifying the ways by which health care professionals can improve postoperative care [03] According to the International Association for the Study of Pain "the relationship between pain and tissue damage is neither uniform nor constant"[04].

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The fact that patients often undergo a great deal of suffering from pain and lack of adequate pain relief may be considered as an indicator of this shortage of knowledge [05].Postoperative pain is both distressing and detrimental to the patient The pain causes the patient to remain immobile, thus becoming vulnerable to DVT, pulmonary atelectasis, muscle wasting and urinary retention [06]. The effective relief of pain is of paramount importance to anyone treating patients undergoing surgery. This should be achieved for humanitarian reasons, but there is now evidence that pain relief has significant physiological benefit [07]. Pain is a subjective phenomenon is perceived only by the sufferer. The intensity of pain may not be constant even in a given individual but will wax and wane in a cyclical pattern [08]. Postoperative pain management remains a significant challenge for all healthcare

providers [09]. Good pain control after surgery is important to prevent negative outcomes such as tachycardia, hypertension, myocardial ischemia, a decrease in alveolar ventilation, and poor wound healing [11]. Inadequate postoperative pain relief may result in clinical and psychological changes that may increase the morbidity and mortality as well as the cost of treatment. The need for alternative methods of pain relief is evident. An exploration of new methods of pain control is necessary to reduce the suffering associated with surgery and other pathological conditions and improve recovery time of surgical patients [12].

Aim of the research

The present study was aimed at assessing the effectiveness of progressive muscle relaxation technique on postoperative pain among postoperative patients at a selected hospital in Ernakulam district.

2. Materials and methods

The investigator used quantitative, one group pre-test post-test design for conducting the study. In the study design, the researcher had chosen a group of postoperative patients between the age group of 15-75 from the selected hospital. Progressive muscle relaxation was taught on the previous day of surgery and their effectiveness was measured after surgery.

In the present study, the sample consists of 30 patients, who are not taking any analgesics and relieved from the effects of anesthesia, undergone general and orthopedic surgery. After initial assessment investigator taught progressive muscle relaxation for selected candidates, and the test was conducted for the same sample after one hour of surgery.

The data gathering process began from a formal permission was obtained from the concerned authorities. Subjects were taken from the selected areas by using systematic random sampling. The researcher familiarized self and educated the samples about the nature of the study so as to ensure better co-operation during data collection. Objectives of the study were discussed and consent was obtained for participating in the study. Data analyzed by using descriptive statistics

3. Result

Results among 30 subjects showed 7 (23.3%) had moderate pain and 23(76.7%) had experienced severe pain before progressive muscle relaxation. On the age wise assessment, out of 30 subjects 10(33.3%) was in 15-25 years, 7(23.3%) in 26-40 years, 3(10%) in 41-58 years and the remaining 10(33.3%) in 56-75 years. According to the gender wise assessment out of 30, 19 (63.3%) were males and11 (36.7%) were females.

In case of surgery 15(50%) subjects undergone orthopedic surgery and the remaining 15(50%) of them had general abdominal surgery. On the basis of anesthesia 8(26.7%) subjects received general anesthesia, 19(63.3%) of them received spinal anesthesia. Only 2(6.7%) received epidural anesthesia and 1(3.3%) received intravenous regional anesthesia.

The average score regarding post– the operative pain was 7.17and 4.27 respectively before and after the intervention of progressive muscle relaxation technique. A decreased mean score of 2.9 can be observed in postoperative pain as a result of progressive muscle relaxation technique. The paired t-value (p=26.150, p<0.05) showed that the decrease in postoperative pain was statistically significant at 0.05 level

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Table-1

Stage	Mean	SD	Mean Difference	Paired t-test	p-value
Pretest	7.17	1.392			
Post-test (after 1 hr of PMR)	4.27	1.388	2.9	26.150	P<0.001

Significant at 0.05 levels

4. Discussion

The findings of the study demonstrated that among the subjects 10(33.3%) were in the age group of 15-25 years and other 10(33.3%) were in the age group of 56-75 years.

On gender wise assessment most of them were males 19(63.3%) and from Christian community there were 13 of them (43.3%). Among the 30 subjects, 15 had undergone general (abdominal surgery) and 15 underwent orthopedic surgery. More than half of the subjects ie, 19(63.3%) had received spinal anesthesia and majority 26(86.7%) had no previous experiences with surgery. None of the subjects had any exposure to progressive muscle relaxation therapy.

The first objective of the study was to assess the level of pain among post operative patients before and after progressive muscle relaxation therapy.

Among the 30 screened subjects 23(76.7%) experienced severe pain post operatively before the administration of progressive muscle relaxation therapy. Only 7(23.3%) had moderate pain after surgery. No one experienced mild pain after surgery.

The results were similar to the findings of the study done by Elsa M. Tayer regarding the pain prevalence, intensity; assessment in Canadian teaching hospital among postoperative patients.

This cross-sectional (n-233) study showed that overall 74.89% experienced severe pain out of 233 and remaining (23.103%) experienced moderate pain and no one experienced mild pain after surgery.

Hence the researcher concluded that pain is common after surgery and with a negative impact on the physical, behavioral, social and psychosocial well being of the subjects, which reveal the need of remedial measures to get relief from the discomforts of postoperative pain. Practicing progressive muscle relaxation therapy is one among them.

The study results revealed that after practicing 30 minutes of progressive muscle relaxation therapy the number of patients who experienced severe pain reduced to 9(30%) and the number of patients who experienced moderate pain reduced to 3(10%). After one hour of progressive muscle relaxation. Only 1(3.3%) experienced severe pain, 21(70%) experienced moderate pain and 8(26.7%) had mild pain. The researcher concluded that the practicing of progressive muscle relaxation therapy was very much effective to reduce the postoperative pain. The second objective was to assess the effectiveness of progressive muscle relaxation therapy on pain among postoperative patients.

In the pretest assessment it was clear that more than half 23(76.7%) of the subjects experienced severe pain, few subjects 7(23.3%) had moderate pain and none of them experienced mild pain. After practicing the progressive muscle relaxation therapy the number of subjects experienced severe pain reduced to 9(30%) and moderate pain 21(70%)

In a study conducted by Heamans in the year 2009, the findings were consistent with results of this study regarding the effectiveness of progressive muscle relaxation therapy to reduce pain among postoperative patients. This study also noted that after the implementation of intervention the intensity of pain and discomforts was reduced.

The study depicted that the mean score of pain before progressive muscle relaxation therapy (Mean =7.17) was higher than after one hour of progressive muscle relaxation therapy (Mean =4.27). A decreased score of 2.9 was observed after the intervention. The paired t-test value (t=26.150, P< 0.01) showed that the decrease in score of pain was statistically significant at 0.01 level.

Ethical clearance- Ethical clearance taken from the ethical committee

Source of funding- Self

Conflict of interest- Nil

Conclusion

Progressive muscle relaxation technique is safe and effective intervention to get relief from postoperative pain. The same type of study conducted by De Paula on the use of PMR technique for pain relief in gynecology revealed that the use of the progressive muscle relaxation technique decreased the level of pain in the subjects.

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