

International Journal of Advanced Research in Science, Communication and Technology

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 5, Issue 12, April 2025



A Quasi Experimental Study to Assess the Effectiveness of Back Massage in Reducing Post-Operative Pain among Patients Undergone Orthopedic Surgery at Apollo Loga Hospital Karur

M. Magudeeswaran¹, Selvi P², Dr.Sridhar³, Dr.Vignesh⁴, Rubyiana Dsouza⁵

Emergency Staff Apollo Loga Hospital, Karur¹ Nursing Superintendent Apollo Loga Hospital, Karur^{2,5} Unit Head of Apollo Loga Hospital, Karur³ Quality Executive Apollo Loga Hospital, Karur⁴

Abstract: A Quasi experimental study was conducted to assess the effectiveness of back massage in reducing post-operative pain among patients undergone orthopedic surgery in Apollo Loga Hospital, Karur. METHODOLOGY: In this study a quasi-experimental, non-randomized control group pretest – posttest design was adopted. Convenience sampling technique was used to select each 30 samples in experimental and control group. Structured interview schedule was used to collect the demographic variables. Visual analog scale was used to assess the level of postoperative pain. Experimental group received intervention of Back massage with routine care for 15-20 minutes twice a day for 1-3 postoperative days. The result shows that, with regard to age, 11 (36.6%) in experimental group and 12(40%) in control group belonged to the age group of 41 to 60 years and 2 (6.6%) in experimental group and 3(10%) in control group belonged to the age group of above 80 years. Considering the sex, 17 (56.6%) subjects in the experimental group and 14 (46.6%) in the control group were females and the remaining were males. In relation to education, 9(30%) of them had high school education and 5(16.6%) of them had primary education in experimental group and 9(30%) of them had high school education and 11(36.6%) of them had primary education in control group. With regard to the occupation, 10(33.3%) were agriculture workers and 2(6.6%) were private employees in experimental group and 8(26.6%) were agriculture workers and 4(13.3%) were private employees in the control group. Regarding the history of previous orthopedic surgery, 17(56.6%) in experimental group and 18(60%) in control group had no history of previous orthopedic surgery. Considering the types of analgesics used, 17(56.6%) subjects in experimental group and 19(63.3%) in control group had parenteral type of analgesics used. In relation to frequency of analgesics administration, 24(80%) of them in the experimental group and 21(70%) of them in the control group got analysis twice a day. With respect to types of orthopedic surgery, 20(66.6%) subjects in experimental group and 17(56.6%) in the control group had lower extremity orthopedic surgery. With regard to the types of anesthesia, 23(76.6%) subjects in the experimental group and 25(83.3%) subjects in the control group undergone spinal anesthesia and 3(10%) subjects in the experimental group and 2(6.6%) subjects in the control group undergone regional anesthesia FINDINGS: Findings of pre test level of pain in control group on day I and Day-II shows that 27 subjects (90%) had severe level of pain and 3 subjects (10%) had moderate level of pain. And the post test level of pain in control group on day I and day II, 26 subjects (86.6%) had severe level of pain and 4 subjects (13.3%) had moderate level of pain. The pre test level of pain on day III, 1 subject (3.3%) had mild level of pain, and 2 subjects (6.6%) had moderate level of pain and 27 subjects (90%) had severe level of pain. The post test level of pain on day III, 5 subjects (16.6%) had moderate level of pain, 25 subjects (83.3%) had severe level of pain. Whereas in experimental group, the pre test level of pain on Day I post operative day 22 subjects (73.3%) had severe

Copyright to IJARSCT www.ijarsct.co.in







International Journal of Advanced Research in Science, Communication and Technology

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 5, Issue 12, April 2025



level of pain and on Day III post operative day, 23 subjects (76.6%) had moderate level of pain and the post test level of pain on I post operative day 17 subjects (56.6%) had moderate level of pain, on III post operative day 19(63.3%) had mild level of pain. Findings revealed that in control group, the pre test mean score was 84.7 with SD 8.4 and the post test mean score 83.7 with SD 9.5on the day-I and day -II the pre test mean score was 84.7 with SD 8.4 and in the post test mean score 83.7 with SD 9.5 On day-III, the pre test mean score was 83.5 with SD 12.9 and in the post test mean score 82.8 with SD 10.4. The calculated 't' values on day-I,II,III in the control group were 0.98,0.98,1.82 which are not significant. It is concluded that there was no significant differences between the pre and post test level of pain among patients undergone Orthopaedic surgery. Findings of experimental group shown that the pre test mean score was 80 with SD 12.3 and the post test mean score 71.6 with SD 13.8on the day-I. On Day -II the pre test mean score was 62.3 with SD 8.3 and in the post test mean score 42 with SD 17.4. On Day-III the pre test mean score was 51.3 with SD 14.8 and the post test mean score37.3 with SD 14.The calculated't' value on day-I, II, III in the experimental group were 3.5, 4.4, 4.5 was statistically highly significant at p < 0.001 level which clearly shows that there was a significant reduction in the level of pain among patients undergone Orthopaedic surgery after giving back massage. The obtained't' values on day-I, day-II, day-III for level of pain between the control and experimental group is 4.1, 6.6, 13.4 which were highly significant at p < 0.001 level. These findings revealed that the subjects in experimental group had decreased level of pain after giving back massage compared to control group. Findings revealed that in control group, the pre test mean score was 34.8 with SD 2.4 and the post test mean score was 31.5 with SD 6.6.

There was no association between pretest level of pain and their demographic variable of occupation, history of previous orthopedic surgery, types of analgesics and frequency of analgesic administration. There was a significant association between the level of pain and the other demographic variables among patients undergone Orthopedics surgery in the control group. There was a significant association between the demographic variables such as age, gender, history of previous surgery, their level of pain. No other demographic variables were shown any association with their level of pain among patients undergone orthopedics surgery in the experimental group.

Keywords: Quasi

I. INTRODUCTION

"Pain and death are part of life; to reject them is to reject life itself"

The skeletal system serves as a framework for tissues and organs to attach themselves to. This system acts as a protective structure for vital organs.Bones and other skeletal materials must be resistant to such stresses, or they may break or distort. The types of forces experienced on different parts of the body will influence the structural material. Musculoskeletal disorders (MSDs) are injuries or pain in the body's joints, ligaments, muscles, nerves, tendons, and structures that support limbs, neck and back. MSDs are degenerative diseases and inflammatory conditions that cause pain and impair normal activities. They can affect many different parts of the body including upper and lower back, neck, shoulders and extremities (arms, legs, feet, and hands) In general population, musculoskeletal disorders are an increasing health care issue globally, being the second leading cause of disability. In the U.S. there were more than 16 million strains and sprains treated in 2004, and the total cost for treating

II. METHODOLGY

RESEARCH APPROACH Quantitative evaluative approach RESEARCH DESIGN The research design is quasi experimental non randomized control group pretest posttest design is adopted.

Copyright to IJARSCT www.ijarsct.co.in



DOI: 10.48175/IJARSCT-25906



47



International Journal of Advanced Research in Science, Communication and Technology

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 5, Issue 12, April 2025



VARIABLES UNDER THE STUDY

INDEPENDENT VARIABLES

Back massage includes effleurage, petrissage, tapotement, friction.

DEPENDENT VARIABLES

Reducing post-operative pain among patients have under gone orthopedic Surgery.

EXTRANEOUS VARIABLES

Demographic variables include Age, Gender, Educational status, Occupation, History of previous surgery, Types of analgesics used, and Frequency of analgesics administration, Types of orthosurgery, and Types of anesthesia.

SETTINGS OF THE STUDY

Apollo hospital,karur is selected for experimental group and Apollo hospital is selected for control group of this study. The settings of both hospitals are similar in facilities such as surgical procedures, postoperative care, rooms, environment, daily routine care and activities.

POPULATION OF THE STUDY

The accessible population of this study is selected patients undergone orthopedic surgeries who were in 1-3rdpostoperative days at Apollo hospital,Karur.

SAMPLE

Patients' undergone orthopedic surgery of who were in 1-3rdpost operative days in Apollo hospital, Karur.

SAMPLE SIZE

The selected sample size is 60. 30 samples in Experimental group. 30 samples in Control group.

SAMPLING TECHNIQUE

Convenience sampling technique.

INCLUSION CRITERIA

The study included patients who are

- 1. Above 20 years of age group
- 2. Undergone orthopedic surgery of both upper and lower extremities and who are
- in 1-3rdpost operative days.
- 3. Receivingpost operative analgesics twice a day
- 4.Not having back abnormalities and can be able to turn for back massage.

EXCLUSION CRITERIA

- The study excluded patients who are
- 1.Unconscious
- 2. Using any other complimentary therapies like acupuncture, TENS
- 3.Unable to read and write Tamil
- 4.Not willing to participate in the study.

DESCRIPTION OF THE TOOL

Data collection instrument consists of three Sections

- Section- I Demographic variables
- Section-II Visual analog scale

Copyright to IJARSCT www.ijarsct.co.in







International Journal of Advanced Research in Science, Communication and Technology

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 5, Issue 12, April 2025



SECTION I

Demographic variables

Consists of questions to elicit demographic data such as, Age, Gender,

Education, Occupation, History of previous surgery, Types of analgesics used, Frequency of analgesics administration, Types of orthosurgery and Types of anesthesia

SECTION II

Visual analog scale

The visual analog scale (VAS) is one of the most commonly used measures of pain intensity and is usually a horizontal line, 100 mm in length, anchored by word descriptors at each end like no pain to severe pain. SCORING PROCEDURE 0-4mm - No pain

5-44mm - Mild pain

45-74mm - Moderate pain 75-100mm - Severe pain

VALITY OF THE TOOL

The validity of tool obtained from the 5 experts in the field of nursing and medicine. The suggestions and advices given by the experts were considered and duly corrected.

RELIABLITY OF THE TOOL

visual analog scale was assessed by using test retest method.

PILOT STUDY

6 patients undergone orthopedic surgery, 3 were in experimental and 3 were in control group.

PROCEDURE FOR DATA COLLECTION

The investigator got formal permission from the Hospital authority, Apollo hospitals inclusion criteria were selected by convenience sampling techniques. 30 subjects were assigned in experimental group and 30 in control group

Demographic Variable	Experimtal group	*	Control Group	
	Frequency	Percentage%	Frequency	Percentage%
Age (in years)				
a) 20-40	6	20	4	13.3
b) 41-60	11	36.6	12	40
c) 61-80	11	36.6	11	36.6
d) Above 81	2	6.6	3	10
2.Gender:				
a) Male	13	43.3	16	53.3
b) Female	17	56.6	14	46.6
3.Educational status:				
a) Illiterate	9	30	5	16.6
b) Primary	5	16.6	11	36.6
c) High school d)Higher	9	30	9	30
secondary & above	7	23.3	5	16.6

Copyright to IJARSCT www.ijarsct.co.in







International Journal of Advanced Research in Science, Communication and Technology

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal



Volume 5, Issue 12, April 2025

Im	pact	Fact	or:	7.6

4.Occupation						
a) Home maker b)Private	7	23.3	5	16.6		
employee	2	6.6	4	13.3		
c)Government employee	5	16.6	7	23.3		
d) Self employed e)	6	20	6	20		
Agriculture	10	33.3	8	26.6		
5.History of previous						
orthopedic surgery						
a) Yes	13	43	12	40		
b) No	17	57	18	60		
6.Types of analgesics used						
a) Oral	13	43.3	11	36.6		
b) Parenteral	17	56.6	19	63.3		
7.Frequency of						
analgesics administration						
a) Once a day	6	20	9	30		
b) Twice a day	24	80	21	70		
8.Types of orthopedic						
surgery						
a)Upperextremity	10	33.3	13	43.3		
b)Lowerextremity	20	66.6	17	56.6		
9. Types of anesthesia						
a) Spinal	23	76.6	25	83.3		
b) General	4	13.3	3	10		
c) Regional	3	10	2	6.6		

Table 1 describes the distribution of subjects in experimental and control group according to age, gender, educational status, occupation, history of previous surgery, types of analgesics used, frequency of analgesics administration, types of ortho surgery, types of anesthesia of patients undergone orthopedic surgery. With regard to age, 11 (36.6%) in experimental group and 12(40%) in control group belonged to the age group of 40 to 60 years and 2 (6.6%) in experimental group and 3(10%) in control group belonged to the age group of above 80 years. Considering the sex, 17 (56.6%) subjects in the experimental group and 14 (46.6%) in the control group were females and the remaining were males. In relation to education, 9(30%) of them had high school education and 5(16.6%) of them had primary education in control group. With regard to the occupation, 10(33.3%) were agriculture workers and 2(6.6%) were private employees in experimental group and 8(26.6%) were agriculture workers and 4(13.3%) were private employees in the control group. Surgery, 17(56.6%) in experimental group and 18(60%) in control group had no history of previous orthopedic surgery. Considering the types of analgesics used. In relation to frequency of analgesics administration, 24(80%) of them in the control group got analgesics twice a day.

With respect to types of orthopedic surgery, 20(66.6%) subjects in experimental group and 17(56.6%) in the control group had lower extremity orthopedic surgery. With regard to the types of anesthesia, 23(76.6%) subjects in the experimental group and 25(83.3%) of subjects in the control group undergone spinal anesthesia and 3(10%) subjects in the experimental group and 2(6.6%) subjects in the control group

Copyright to IJARSCT www.ijarsct.co.in







International Journal of Advanced Research in Science, Communication and Technology

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal



CONTROL GROUP EXPERIMENTAL GROUP

Figure - 5: Distribution of subjects based on the level of pain on day-1 in the control and experimental group



CONTROL GROUP EXPERIMENTAL GROUP Figure – 6 : Distribution of subject based on level of pain on day 2 in the control and experimental group

Copyright to IJARSCT www.ijarsct.co.in



DOI: 10.48175/IJARSCT-25906



Jy 150 9001:2015 Impact Factor: 7.67





Figure -7: Distribution of subject based on level of pain on day 3 in the control and experimental group Data on the effectiveness of back massage on reducing post-operative pain among patient undergone for orthopedic surgery in control group Table -2: Frequency and percentage distribution of subjects based on pre and posttest level of pain in the control group

LEVEL OF												
PAIN	DAY1			DAY 2		DAY3						
	PRE POST		PRE		P	POST		PRE		POST		
	TEST TE		EST	TEST		TEST		TEST		TEST		
	F	%	F	%	F	%	F	%	F	%	F	%
NO PAIN	-	-	-	-	-	-	-	-	-	-	-	-
MILD	-	-	-	-	-	-	-	-	1	3.3	-	-
MODERATE	3	10	4	13.3	3	10	4	13.3	2	6.6	5	16.6
SEVERE	27	90	26	86.6	27	90	26	86.6	27	90	25	83.3

The table 2 shows that the pretest level of pain in control group on day I and Day-II, 27 subjects (90%) had severe level of pain and3 subjects(10%) had moderate level of pain. And the post test level of pain in control group on day 1 and day 11, 26 subjects (86.6%) had severe level of pain and4subjects (13.3%) had moderate level of pain. The pre test level of pain in control group on Day-III, 1 subject (3.3%) had mild level of pain, and 2 subjects (6.6%) had moderate level of pain. The post test level of pain in control group on day-III, 5 subjects (16.6%) had moderate level of pain, 25 subjects (83.3%), had severe level of pain.

Copyright to IJARSCT www.ijarsct.co.in







International Journal of Advanced Research in Science, Communication and Technology

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 5, Issue 12, April 2025



LEVEL OF PAIN	DAY1			DAY 2				DAY3				
	PRE TEST		POST TEST		PRE		POST		PRE TEST		POST	
					TEST		TEST				TEST	
	F	%	F	%	F	%	F	%	F	%	F	%
NO PAIN	-	-	-	-	-	-	-	-	-	-	-	-
MILD	-	-	-	-	-	-	-	-	7	23.3	19	63.3
MODERATE	8	26.6	17	56.6	27	90	15	50	23	76.6	11	36.6
SEVERE	22	73.3	13	43.3	3	10	15	50	-	-	-	-

II. CONCLUSION

Back massage therapy was found to be effective in promoting sleep quality among post-operative patient. The result of this study shows that the back massage is an effective non-pharmacological measure which is an effective, simple, on invasive, and cost-effective method that can be used easily without any side effects or extra effort from the part of practitioners. A similar study can be conducted as a true experimental study

REFERENCES

- [1]. Basvanthappa BT. Nursing Research. New Delhi: Jaypee Publication; 2016.
- [2]. Potter PA, Perry AG. Basic Nursing Essential for Practice. 5th ed. Noida: Mosby Publication; 2002.
- [3]. Lewis SM, Dirksen SR, Heitkemper MM, Bucher L. Medical and Surgical Nursing. Philadelphia, PA: Mosby Publication; 2020.
- [4]. Hinkle H. Brunner and Siddharth Text Book of Medical and Surgical Nursing. 7th ed., Vol. 1. Alphen aan den Rijn, South Holland: Wolters Kulwar; 2019.
- [5]. Cassmever P. Text Book of Medical and Surgical Nursing. 3rd ed. Maryland Heights, Missouri: Mosby Publication; 20. 6. Taylor C. Fundamental of Nursing. 5th ed. Philadelphia, PA: Lippincott Williams and Wilkins Company; 2015.
- [6]. Sharma M, Haider T. Yoga as an alternative and complementary treatment for hypertensive patients: A systematic review. J Evid Based Complement Altern Med 2012;17:199-205.
- [7]. Vishwajith M. Effectiveness of back massage on congestive cardiac failure patient. Int J Sci Res 2012;3:728-35.
- [8]. Parastoo K, Abbas E, Tayeb MS, Sedigh-Rahimabadi M. The effect of massage therapy on psychological outcomes in patients after cardiac surgery: A mini review. Int J Med Rev 2014;1:175-9.
- [9]. Joys RJ, Kumari SS. Effectiveness of back massage therapy in promoting sleep quality among post operative patients after cardiac surgery. Int J Sci Res 2016;5:416-9



