

Evaluation of Nursing Intervention on Post-operative Pain Among Surgical Patients in Obafemi Awolowo University Teaching Hospital Complex, Ile-Ife Osun State

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DOI: 10.29322/IJSRP.8.11.2018.p8302

<http://dx.doi.org/10.29322/IJSRP.8.11.2018.p8302>

Abstract- Pain management is an important aspect of nursing care. Despite the existence of several nursing interventions to manage surgical pain, post-operative pain management has been inadequate. The study aimed to evaluate nursing intervention on post-operative pain among surgical patients.

Two groups pre-test, post-test quasi-experimental study was adopted and thirty surgical patients were included. Sample size was determined using Leslie Kish formula and purposive sampling technique was adopted to select 15 surgical patients into the experimental and control groups respectively. A standardized numeric pain rating scale was adopted to collect data on pre-intervention pain intensity from both groups 12 hours post-surgery and post-intervention pain intensity data from both groups 24hours post-surgery. Data was processed using statistical package for social science version 21. Two research questions were answered using descriptive statistics of percentages and one hypothesis was tested using inferential statistics of student t-test at 0.05 level of significance.

Majority (80%) surgical patients in the experimental group and (66.8%) in the control group had high pre-intervention pain intensity. Majority (59%) surgical patients in the experimental group had low post-intervention pain intensity and (59%) in the control group had high post-intervention pain intensity. There is significant difference in post-intervention pain intensity among surgical patients in the experimental and control group ($p = .000$).

Post-operative pain intensity can be managed through exposure of surgical patients to appropriate nursing intervention on pain management. The study recommended that surgical patients should be exposed to appropriate nursing intervention in post-operative pain management.

Index Terms- Purposive sampling, Post-operative pain, Quasi-experimental study, Surgical patients.

I. INTRODUCTION

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage. Surgery is

one of the major life events that trigger pain and post-operative pain is a major nursing challenge for many hospitals [1],[2]. According to [3] postoperative pain is often experienced by most surgical patients and the pre-operative care of surgical patients becomes very challenging with the existence of high post-operative pain. Despite increasing knowledge on post-operative pain management and the existence of various approaches to the management of post-operative pain, surgical patients have persistently experienced severe post-operative pain [1],[2].

There has been delayed ambulation, delayed recovery and prolonged hospitalization among surgical patients as a result of persistently post-operative pain [4],[5]. These may be attributed to inadequacy in the nursing intervention adopted to manage post-operative pain. According to [4] despite the discovery of nursing interventions to manage post-operative pain, surgical patients have persistently experienced high post-operative pain.

According to [6] about 60% to 80% of surgical patients experience high post-operative pain. This may be attributed to inadequacy in the nursing intervention adopted to manage post-operative pain. According to [7] pre-operative post-operative pain has been poorly managed by nurses which has negatively influenced the outcome of surgery and recovery of surgical patients. This may be due to inadequacy in the nursing intervention adopted to manage post-operative pain among surgical patients. According to [8] the negative effect of post-operative pain has significantly increased resulting in delayed ambulation post-operatively, delayed post-operative recovery and prolonged period of hospitalization. This may be due to inadequacy in the nursing intervention utilized to manage post-operative pain.

A study by [9] on post-operative pain among surgical patients showed that 95% of surgical patients experienced high level of pain post-operatively. This may be due to inadequacy in the nursing intervention utilized to manage post-operative pain. A study conducted by [10] on post-operative pain management among surgical patients and result showed majority of surgical patients experience high pain intensity post-operatively. This may be due to inadequacy in the nursing intervention utilized to manage post-operative pain.

Inadequate clinical practice concerning post-operative assessment and management of pain has been reported in several studies [11],[12]. According to [13] despite advancement in post-operative pain management; surgical patients have persistently experienced high post-operative pain. Likewise, researchers through clinical experience have observed that majority of surgical patients persistently experience high pain intensity post-operatively. These suggest a fundamental problem which may be due to inadequacy in the approaches adopted by nurses in the management of post-operative pain by nurses. It may also be attributed to inadequacy in the type of nursing intervention adopted in the management of post-operative pain as no previous quasi-experimental study combined both music therapy and guided imagery in the management of post-operative pain among surgical patients. Hence the need for a study to evaluate nursing intervention on post-operative pain among surgical patients in Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, Osun State, Nigeria.

II. MATERIALS AND METHODS

2.1 Study Design

The study adopted two groups pre-test post-test quasi-experimental design to evaluate nursing intervention on post-operative pain among surgical patients in Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, Osun State, Nigeria between February 10th to March 15th, 2017.

2.2 Population

The population was 60 adult surgical patients admitted and booked for abdominal surgery in Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, Osun State which was obtained from the previous one month record. Adult surgical patients admitted and booked for abdominal surgery were included in the study. Adult surgical patient who were unconscious and unwilling to participate in the study were excluded.

2.3 Sample size and sampling Technique

Sample size was determined using Leslie Kish formula and purposive sampling technique was adopted to select 30 adult surgical patients (15 surgical patients who formed the experimental group and 15 patients who formed the control group).

2.4 Instrumentation

The instrument utilized for data collection were a developed demographic data form consisting of four items and used to collect data about the surgical patients demographic data. A standardized numeric pain rating scale described by Downie, Leathan, Rhind, Wright, Branco and Anderson (1978) in which a patient was asked to provide a rating to pain intensity experienced on a scale from 0 to 10. Pain intensity rating between 7 to 10 was categorized as high pain intensity, pain intensity rating between 4 to 6 was categorized as moderate pain intensity and pain intensity rating between 0 to 3 was categorized

as low pain intensity. Construct validity of the numeric pain rating scale has been established by using factor analysis. The numeric pain rating scale has excellent internal consistency rating with alpha coefficient value of 0.84. The test-retest reliability value was $r = 0.79$ (Jensen, Karoly, & Bravers, 2001).

2.5 Procedure for data collection

The procedure for data collection involved three phases:

Phase 1: It involved meeting with the recruited surgical patients individually where information about the purpose, course and potential benefits of the study was discussed. Consent was obtained from each surgical patient in both the experimental and control group after which the demographic data of each surgical patients was obtained using the developed demographic data form. Data on pre-intervention pain intensity was obtained using the demographic data form and numeric pain intensity rating scale in which patient was asked to rate the pain intensity experienced on the scale 12hours after surgery.

Phase 2: Surgical patients in the experimental group were exposed to music therapy and guided imagery 12hour after surgery over the period of 12hours while surgical patients in the control group were not exposed to the nursing interventions.

Phase 3: Data on post-intervention pain intensity was obtained 24hours after surgery from individual surgical patients in both the experimental and the control group using the numeric pain rating scale.

2.6 Method of data analysis

Data gathered from surgical patients were processed using statistical package for social science (SPSS) version 21. Frequency table was constructed and data were expressed on it. Two research questions were answered using descriptive statistics of percentage and one hypothesis was tested using inferential statistics of student t-test at 0.05 level of significance.

2.7 Ethical Consideration

Ethical clearance was obtained from the Babcock University Health Research Ethics Committee (BUHREC) with clearance number BUHREC604/16. Permission was also obtained from the management of Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, Osun State, Nigeria before the study was conducted. The surgical patients were adequately informed about the study and consent was obtained before data was collected. Information obtained from the surgical patients was kept confidential and the right to withdraw from the study at any point by the surgical patients was respected with no consequences suffered. No harm was suffered by the surgical patients during the research study. Post research benefit includes improvement in the management of post-operative pain among surgical patients by nurses.

III. RESULTS AND DISCUSSION

3.1 Result Presentation

Table 1: Frequency and percentage showing demographic data of surgical patients

Demographic Variables	Nurses n = 30	Experimental group frequency (%)	Control group frequency (%)	Mean age (Standard deviation)
Age:	25 – 34 years	4(26.8)	6(40)	44.53±14.1
	35 – 44 years	7(46.8)	2(13.3)	
	45 – 54 years	2(13.3)	2(13.3)	
	55 – 64 years	-	4(26.8)	
	65 – 74 years	1(6.7)	-	
	75 – 84 years	1(6.7)	1(6.7)	
Gender	Male	3(20)	5(33.2)	
	Female	12(80)	10(66.8)	
Marital Status	Single	2(13.3)	2(33.3)	
	Married	13(86.6)	13(86.6)	
	Divorced	-	-	
Educational Background	Primary school cert	4(26.8)	1(6.7)	
	Secondary school cert	7(46.8)	5(33.2)	
	Tertiary school cert	4(26.4)	9(59.0)	

Table 1 reveals that majority (46.8%) of experimental group surgical patients were between age 35-44years and majority (40%) of control group surgical patients were between age 25-34years. Majority (80%) of experimental group surgical patients were females and majority (66.8%) of control group surgical patients were females. Majority (86.6%) of experimental

group surgical patients were married and majority (86.6%) of control group surgical patients were between married. Majority (46.8%) of experimental group surgical patients were secondary school certificate holders and majority (59%) of control group surgical patients were tertiary school certificate holders.

Table 2: Surgical patients pre-intervention pain intensity category

Pre-intervention pain intensity rating category (%)			
Group	High	Moderate	Low
Experimental group	12(80)	2(13.3)	1(6.7)
Control group	10(66.8)	4(26.8)	1(6.7)

Table 2 shows that majority (80%) of experimental group surgical patients had high pre-intervention pain intensity and majority (66.8) of control group surgical patients had high pre-intervention pain intensity.

Control group	9(59.0)	5(33.2)	1(6.7)
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Table 3 shows that majority (59%) of experimental group surgical patients had low post-intervention pain intensity and majority (59%) of control group surgical patients had high post-intervention pain intensity.

Table 3: Surgical patients post-intervention pain intensity category

Pre-intervention pain intensity rating category (%)			
Group	High	Moderate	Low
Experimental group	2(13.3)	4(26.8)	9(59.0)

Table 4: Mean and standard deviation of surgical patients pre and post-intervention pain intensity

Group	Maximum point on scale	Pre-intervention mean	Pre-intervention Standard deviation	Post-intervention mean	Post-intervention Standard deviation	Mean gain	t-value	p-value
Experim	10	3.47	1.96	6.32	2.95	2.85		

ental group							12.45	.000*
Control group	10	2.93	1.75	3.05	1.98	0.12		

Table 4 shows that the pre-intervention mean pain intensity among surgical patients in the experimental group was 3.47 while the pre-intervention mean pain intensity among surgical patients in the control group was 2.93. Post-intervention mean pain intensity among surgical patients in the experimental group was 6.32 while the post-intervention mean pain intensity among surgical patients in the control group was 3.05. Mean gain in pain intensity among surgical patients in the experimental group was 2.85 while Mean gain in pain intensity among surgical patients in the control group was 0.12. Result reveals that there is significant difference in pain intensity rating among participants in the experimental and control group ($p = .000$).

3.2 Discussion of findings

There were more surgical patients between 25-34years in the hospital during data collection. This implies that more surgical patients between 25-34years develops abdominal disease conditions requiring surgery and reports to the hospital. This finding disagrees with previous quasi-experimental study in which there were more surgical patients between 35-44years during data collection [14]. There were more female surgical patients during data collection. This implies that more female surgical patients reports to the hospital for treatment with abdominal disease conditions requiring surgery. This finding supports previous quasi-experimental study in which there were more female surgical patients during data collection [15]. There were more married surgical patients during data collection. This implies that more married surgical patients' reports to the hospital for treatment with abdominal disease conditions requiring surgery. This finding supports previous quasi-experimental study in which there were more married surgical patients during data collection [6]. There were more tertiary school certificate holders among surgical patients in the hospital during data collection. This implies that more surgical patients with tertiary school certificate develops abdominal disease conditions requiring surgery and reports to the hospital. This finding agrees with previous quasi-experimental study in which there were more tertiary school certificate holders among surgical patients in the hospital during data collection [14].

Result shows that majority of experimental group surgical patients and control group surgical patients had high pre-intervention pain intensity as judged from the categorization of pre-intervention pain intensity of the experimental and control group surgical patients. This implies inadequacy in the nursing intervention to manage post-operative pain among surgical patients in the experimental and control group. This finding supports previous quasi-experimental study in which majority of surgical patients in the experimental and control group had high pre-intervention pain intensity rating [6].

Result reveals that majority of experimental group surgical patients had low post-intervention pain intensity while majority of control group surgical patients had high post-intervention pain intensity as judged from the categorization of post-intervention pain intensity of the experimental and control

group surgical patients. This implies that exposure of the experimental group surgical patients to nursing intervention to manage post-operative pain is effective in positively improving post-operative pain when compared with the control group surgical patients that were not exposed to the nursing intervention to manage post-operative pain. This finding supports previous quasi-experimental study in which majority of surgical patients in the experimental group had low post-intervention pain intensity while majority of control group surgical patients had high post-intervention pain intensity [6].

Result shows that post-intervention pain intensity among surgical patients in the experimental group was improved by the nursing intervention judging from the post-intervention pain intensity categorization in which majority of the surgical patients in the experimental group had low post-intervention pain intensity and the significant mean difference in pain intensity among the experimental and control group surgical patients. Result revealed that there is significant difference in pain intensity among surgical patients in the experimental and control group ($p = .000^*$). This implies that prior to the nursing intervention, nursing management of pain among surgical patient in both the experimental and control group was inadequate judging from the pain intensity categorization in which majority of surgical patients in both experimental and control group had high pain intensity. The nursing intervention immediately after implementation was found to be effective in making majority of surgical patients in the experimental group experience low intensity. The finding supports previous quasi-experimental study in which pain intensity among experimental group was improved using nursing intervention [14].

IV. CONCLUSION

The evaluation of nursing intervention on post-operative pain among surgical patients in Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, Osun State, Nigeria was the focus of this study. Based on findings of this study, majority of participants in the experimental and control group had high pre-intervention pain intensity. Nursing intervention on post-operative pain improves pain intensity among surgical patients as this study achieved a significant mean difference in pain intensity among surgical patients in the experimental and control group. The study also achieved a significant difference in post-intervention pain intensity between surgical patients in the experimental and control group. Hence, the nursing intervention was effective in improving pain intensity among surgical patients.

The nursing intervention was effective in improving post-intervention pain intensity among surgical patients in the experimental group as surgical patients in the experimental group showed significant improvement in post-operative pain when compared with the control group surgical patients.

ACKNOWLEDGEMENT

Researchers appreciate all the surgical patients that participated in this study for their cooperation throughout the study and their consent.

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