Outcome of Nurse-Led Intervention On Practice of Early Post-Operative Ambulation Among Nurses in Surgical Units at Federal Medical Centre, Abeokuta

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Abstract

Early post-operative ambulation is an essential component of surgical care, which is rooted in nursing practice. However, literature had revealed that researches on determining the practice of early post-operative ambulation among nurses are low as the previous studies focused on the benefits rather than the practice and implementation of early post-operative ambulation which predisposes the nurses to not being able to decide on when to ambulate, how to ambulate and when surgical patients are to be referred to physical therapist. This project aimed at increasing the practice of early postoperative ambulation among nurses working in surgical units at federal medical centre, Abeokuta, Ogun State, Nigeria. This study adopted a quasi-experimental research design with one group method using pre-intervention, intervention and post-intervention training program. Total enumeration was used for the study. Data was obtained through pre-test and post-test questions. Data was collected in phases and training was used as an intervention. Data analysis was done with descriptive statistics for the research questions and Paired T-test for the hypotheses at 0.05 level of significance. The result revealed mean score for pre-test as 10.08 while post-test was 16.17 with mean difference of 6.09. There were significant differences between pre and post intervention mean scores of participants' practice of early postoperative

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ambulation. (knowledge gained= 6.09, $t_{(78)}$ = 3.957, p = .000) while testing on follow-up (Knowledge gained = 0.920, $t_{(78)}$ = 1.986, p = .067). It was recommended among others that for adherence to performance, the institution should develop the standard guidelines and protocols of ambulation for use by the nurses and other healthcare team.

Keywords: Early Postoperative Ambulation, Practice, Nurse-Led Intervention,

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Introduction

Surgical care is essential for managing different health conditions that need surgical intervention and also known as an indispensable part of a functioning healthcare system (Morris, et al., 2010), in addition, surgical care entails coordination of skilled human resources, specialized infrastructure and supplies. The ubiquity of surgery has important implications; the reported crude death rate after major surgery is 0.5 -5%. Complications after inpatient's operation happen in up to 25% of patients. In developed countries, nearly half of all adverse events in hospitalized patients are linked to surgical care (WHO 2016). There are many complications related with surgical procedures in which inadequate early postoperative ambulation had been recognised as one of the main causes. According to American Nurses association (2020), immobility was found to be related with compromised body system functions. And that adults who were mobile before hospitalization spend up to 83% of their time lying down while on admission, and more than a third of hospitalised adults are discharged with major new disability that wasn't noticed on admission. (ANA 2020). Similarly, Yan, et al., (2019) reported in their study that complications related with prolonged bed rest include thromboembolic disease, insulin resistance, muscle weakness, and respiratory dysfunction.

Early post-operative ambulation according to Merrian Webster Dictionary can be described as an approach to post-operative care in which a patient moves out of bed and engages in light activities such as sitting, standing, or walking as soon as possible after an operation. Ambulation was also described as capability to walk from place to place independently with or without assistance (Nursing Outcome Classification, 2016). Successful implementation of ambulation programs commences with the nursing staff. Nurses are expected to educate patients on ambulation, in conjunction with other health care professionals, and ensure ambulation protocols. Nursing intervention on ambulation is a single nursing action, treatment, procedure activity or service aimed to achieve an outcome in which the nurse is accounted accountable. It was classified as ambulation therapy with intervention code of 03.1(Clinical care classification system). The role of nurses in giving ambulation care requires thorough understanding and skills in the clinical practice to promote movement among medical/surgical patients so as to address the potential patient, cultural and structural barriers that may debar early ambulation.

Despite all the evidences above on the advantages of early mobility after operation, studies have shown that effecting early postoperative ambulation practices are seen to be problematic, firstly patients are weighed down by their conditions that limit their capacity to ambulate, in addition with the delivery attachment required to provide needed care; infusion, catheter drainage, tube and monitors. Nurses are at the forefront of assisting these patients to support ambulation practices however, lack of understanding had been identified as barrier to the implementation. In addition to this, mobilizing in-patients has often been ignored as an aspect of nursing care, frequently; nurses are relying on a physician to attribute direct responsibility of an alternate discipline even though it's solely within nursing domain of practice (Kneafsey, Clifford, & Greenfield, 2013). Previous scholars have reported that nursing staff are often busy concluding tasks such as oral care, dressing, treatment of pressure areas, medication, bed bathing etc and so see ambulation procedure as not being a priority (Sepulveda-Pacsi, Soderman & Kertesz, 2016; Teodoro et al., 2016).

Observation and experience from research area revealed that little evidence was seen to deeply dig the implementation in nursing, this was also identified by Kibler, et al. (2019)., creating a gap in the practice of this at federal medical centre, Abeokuta as it appears that it has not been identified or acted upon as a nursing priority. Most times, early postoperative

ambulation is implemented according to protocol (Cameron, et al., 2015). Many protocols were published (Davidson & Harvey 2016), nevertheless there was no clear protocols to direct nurses on principles of ambulation and that nurses implement this procedure based on their own level of experience and understanding being used for postoperative patients at federal medical centre, Abeokuta. Information gathered showed that in clinical area, patients are not routinely ambulated early, and managing postoperative patients in the facility is to make patients stay on complete bed rest on the zero-day post-operative, make use of prescribed drugs and anticoagulants, and use of pneumatic compression devices to avoid deep vein thrombosis related with delayed ambulation.

In the context of this study, there is need to establish an institutional protocols and guidelines for early postoperative ambulation. Thus, the main objective of this study is to ascertain the outcome of nurse led intervention on practice of early postoperative ambulation among nurses working in surgical units at federal medical centre, Abeokuta, Ogun State, Nigeria. This study specifically:

1. determined the pre-intervention mean score of participants on practice of early post-operative ambulation among nurses working in surgical units;
2. implement the nurse led intervention program;
3. assessed the difference between pre and post intervention mean score of participants on practice of early post-operative ambulation among nurses working in surgical units; and
4. determined the difference in the post intervention and follow-up mean scores of participants on the practice of early post-operative ambulation.

Research Question

This research questions was raised for this study:

1. What is the pre and post intervention mean score of participants on practice of early post-operative ambulation among nurses working in surgical units?

Research Hypotheses

The following research hypotheses were postulated for this study:

1. There is no significant difference in the pre and post intervention mean score of participants on practice of early post-operative ambulation.
2. There is no significant difference in the post intervention and follow-up mean scores of participants on the practice of early post-operative ambulation.

Methodology

This study adopted one group quasi experimental design to ascertain the effect of nurse led intervention program on early postoperative ambulation practices among nurses working in the surgical units. The baseline information from the pre-test enabled the researcher to know the difference from post-test values and thus make an inference on the result to show the effect of the intervention on the participants. This study was conducted in Federal Medical Centre Abeokuta. The target population were nurses working in all the surgical units. Total enumeration of the population was considered due to high level of accuracy which provides a complete statistical coverage over space and time. Federal Medical Centre has 5 surgical units where postoperative patients are managed by surgical nurses.

Data was obtained through pre-test and post-test questions, consisting of 3 sections. Face and content validity of the instrument was ensured by experts in the field of Nursing Science and Tests and Measurement. Internal consistency method of reliability was done. The sample test items were administered to 8 nurses working in surgical units in Olabisi

Onabanjo Teaching Hospital and were collected immediately after finishing. The results were analysed using Cronbach's Alpha. The results showed that the instrument tested 34 items has a coefficient of 0.936. the section A containing 5 items relating to demographic data has coefficient of 0.835; Section B containing 20 items relating to practice-based questions on technique of sitting, standing and moving the patient out of the bed has coefficient of 0.938; and the observation checklist with 9 items has 0.942. this shows that the instrument is reliable and appropriate for the study.

Pre-test items was distributed to the participants at the beginning of each shift where detailed explanation about the study was done. Collection of the filled test items was done immediately. At Federal Medical Centre, Abeokuta, the department of Nursing has an education unit that is responsible for organising training by ensuring roaster accommodation and adjustment to ensure that all the eligible nurses participated in the intervention program. The researcher liaised with this unit and the nurse manager of each surgical unit on the modality of the training for maximum cooperation. Three Research Assistants were used to help in the conduction of the program. At the end of each intervention program, post-test questionnaire was distributed after the training module and result was kept in the envelope at the education unit, until the training program ended. The researcher went to each surgical unit with the support of research assistants to observe the nurses on the surgical ward for 2 hours when there was any case of major surgery after 6 hours post-surgery, the observation was direct, non-participatory, based on the checklist adapted from the guidelines and protocols used in Sydney.

Data was analysed on Statistical Package for Social Sciences (SPSS) version 25. Descriptive statistics of mean, median, mode and standard deviation was applied on individual items. Inferential statistics of paired T- Test was applied on the pre and post-test sessions.

Results

Research question 1: What is the pre and post intervention mean score of participants on practice of early post-operative ambulation among nurses working in surgical units?

Table 1: Pre and post intervention mean score of participants on practice of early post-operative ambulation among nurses working in surgical units

Practice of early post-operative ambulation	Category of scores	Pre-intervention		Post-intervention	
		Freq.	%	Freq.	%
Low	1-7	39	48.8	-	-
Average	8-14	28	35.0	19	23.8
High	15-20	13	16.2	61	76.2
Total		80	100.0	80	100.0
Mean (%)		10.08 (50.4%)		16.17 (80.9%)	
Standard dev.		3.76		3.11	
Mean difference		6.09			

Table 1 presents the pre and intervention mean score of participants on practice of early post-operative ambulation among nurses working in surgical units. At the pre-intervention stage, 39 (48.8%) participants had low practice level of early post-operative ambulation, 28 (35.0%) and 13 (16.2%) had average and high practice level of early post-operative ambulation respectively. At the post intervention, 61 (76.2%) had high practice level and 19 (23.8%) had average practice level of early post-operative ambulation. The participants practice level of early post-operative ambulation at pre-test was 10.08 which is

equivalent to 50.4%. Thus, it could be said that the participants practice level of early post-operative ambulation before intervention was on the average. After the intervention, the study revealed that mean score of participants practice level of early post-operative ambulation was 16.17 (80.9%).

Test of Hypotheses

Hypothesis 1: There is no significant difference in the pre and post intervention mean score of participants on practice of early post-operative ambulation

Table 2: Independent t-test showing the difference in the pre and post intervention mean score of participants on practice of early post-operative ambulation

	N	Mean	Std. Deviation	Std. Error Mean	df	T	Mean diff	Sig
Pre	80	10.08	3.76	0.97				
Post	80	16.11	3.11	0.89	78	3.957	6.09	.000

Results in Table 2 indicate a significant difference in the pre and post intervention mean score of participants on practice of early post-operative ambulation (Knowledge gained = 6.09, $t_{(78)}$ = 3.957, *p* = .000). Going through the knowledge mean scores as shown above, one can say that the mean score (16.11) at post intervention is significantly higher than the pre-intervention of (10.08). Hence the set hypothesis was rejected. It could be deduced from this finding that the difference observed between pre and post intervention mean scores could not have occurred by chance but as a result of the educational intervention the participants were exposed to.

Hypothesis 2: There is no significant difference in the post intervention and follow-up mean scores of participants on the practice of early post-operative ambulation

Table 3: Independent t-test showing the difference in the post intervention and follow up mean scores of participants on the practice of early post-operative ambulation

	N	Mean	Std. Deviation	Std. Error Mean	df	T	Mean diff	Sig
Post inter.	80	16.11	3.11	0.89				
Follow up	80	17.03	2.93	0.57	78	1.986	0.92	.067

Results in Table 3 indicate a significant difference in the practice mean score of participants on the practice of early post-operative ambulation between post intervention and follow-up (Knowledge gained = 0.920, $t_{(78)}$ = 1.986, *p* = .067). Going through the practice mean scores as shown above, one can say that the mean score (17.03) of the 2 weeks follow-up program after intervention is not significantly higher than the post-intervention of (16.11). Hence, the set hypothesis was sustained. It could be deduced from this findings that the indifference observed between post intervention and follow-up mean scores of participants on the practice of early post-operative ambulation is a sign of continuous practice of the training earlier received.

Discussion

The outcome of this study showed that the participants' pre-intervention practice of early post-operative ambulation score to be 48.8%, which means their practice level was below average and not satisfactory enough. It should be noted that the role of nurses is to act in the best interest of patient and make the patient independent in carrying out the activities of daily living as soon as possible. This can indirectly help in reducing the complications and morbidity associated with post-operative prolonged bed rest and can improve wellness. This

study corroborates the findings of Chatterley (2017) that nurses often time shy away from adequate practice due to factors inherent in both the nurses and the institution (hospitals).

The results of the first hypothesis indicated a significant difference in the pre and post intervention mean score of participants on practice of early post-operative ambulation. It could be deduced from this finding that the difference observed between pre and post intervention mean scores could not have occurred by chance but as a result of the educational intervention the participants were exposed to. This implies that the key feature of the nurse-led education increased participants ability to deal with their patients need to make them better and to keep patients on the move. This study has made the nurses to make planned mobility a priority intervention. Progressive mobility (also known as early mobilization) starts slowly and moves the patient toward more range-of-motion exercises, longer sitting times in a chair, and more frequent and longer walks in the hallway. This corroborates the findings of the result showed by Messr, et al., (2015), in their study on mobility, the pre-test and post-test analysis of an educational intervention of 41 intensive care nurses to analyse changes in knowledge and performance reported (t=2.02; p<.001) overall, mobilization activities were raised after educational intervention. Kibler et al., (2012) in their study on quality improvement project to increase post-operative ambulation and decrease patients' complication using a variety of strategies to change nursing practice related to ambulation; the impact of intervention was examined using pre and post-test design. The result documented after 6months of post-intervention showed changes in the practice level of EPA on surgical patients with increase from 62% pre to 96% post-intervention. Nurses were able to document ambulation without being overwhelmed and the distance ambulated by patients increased from 176 feet to 264 feet per patient.

The findings of the second hypothesis indicated in the practice mean score of participants on the practice of early post-operative ambulation between post intervention and follow-up. (Knowledge gained = 0.920, t $_{(78)}$ = 1.986, p = .067). the mean score (17.03) of the 2 weeks follow-up program after intervention is not significantly higher than the post-intervention of (16.11). Hence, the set hypothesis was sustained. It could be deduced from these findings that the indifference observed between post intervention and follow-up mean scores of participants on the practice of early post-operative ambulation is a sign of continuous practice of the training earlier received. Yan hu et al., (2019), in their study stated that nurses improved in ambulation practice, the level of education and compliance using predetermined criteria from 0% to 100%. Follow up audit on compliance to the practice of ambulation showed significant improvement with p<0.001

Conclusion

It was concluded that the pre-intervention practice of early post-operative ambulation was fair while it was high at the post intervention stage. In addition, there was difference in the pre and post intervention mean score of participants on practice of early post-operative ambulation. It was further concluded that there was no difference in the practice mean score of participants on the practice of early post-operative ambulation between post intervention and follow-up.

Recommendations

In view of the findings stated earlier, there is an urgent need to discuss possible ways in which to improve services giving to patients on post-operative ambulation in Nigeria. The following recommendations are made:

1. For adherence to performance, the institution should develop the standard guidelines and protocols of ambulation for use by the nurses and other healthcare team
2. Annual competency review through constant reinforcement, motivation and annual checks by the hospital health boards can also ensure the sustainability and success of the post-operative ambulation in Nigeria.
3. The institution and the department of nursing should adopt the use of B-MART mobility assessment tool and JOHN-HOPKINS tool for assessing postoperative patients for their fitness for ambulation and also documentation of the procedure in the nurses' chart
4. For adherence to performance, the institution should develop the standard guidelines and protocols of ambulation for use by the nurses and other healthcare team.

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