



## **OUTCOME OF NURSING INTERVENTION ON KNOWLEDGE AND USE OF NURSING PROCESS AMONG NURSES IN ZONAL HOSPITALS, RIVERS STATE, NIGERIA**

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**ABSTRACT:** Nursing process is a standard global tool that affords nurses the opportunity to relate and care for their patients in a way that is unique, friendly, scientific, flexible, holistic and self-evaluating. If properly utilized help nurses to provide independent patient care that is organized in such a way that quality is inscribed and allows the nurse to be accountable and responsible for the care. With all of its benefits it has suffered poor implementation and utilization in developing countries, Nigeria inclusive. Hence this study determined the outcome of nursing intervention on knowledge and use of nursing process among nurses in Zonal Hospitals in Rivers State. This study adopted a two-group pretest-posttest quasi-experimental design. This was to train the participants on the knowledge and use of nursing process. Purposive sampling technique was used to select 41 nurse participants who were working in in-patient management units from the 2 Zonal Hospitals. The control group consisted of 20 registered nurses, while the experimental group consisted of 21 registered nurses. The instrument for data collection included a checklist and nursing process questionnaire. The face and content validity were ascertained and reliability was determined with a Cronbach's alpha index range of 0.77 – 0.91. The nursing intervention tool was a training module. The data was analyzed using the Statistical Package for Social Sciences (SPSS) 23. Descriptive statistics of percentages, mean and standard deviation was used to answer six research questions while inferential statistics: independent t-test was used to provide answers to hypotheses at critical value of 0.05 level of significance. Findings revealed that majority of the participants are within the average age bracket of 30–39 years. This also suggests that most of the respondents were females (80%) with registered nurse/midwife professional qualification (56.1%) and nursing officer II cadre (68.3%). The pre-intervention knowledge mean score of nursing process for the two groups was low (mean= 19.65 and 19.83) but became high in the experimental group (mean=33.54 ± 3.88) and low in control group (mean=19.81 ± 5.89) post-intervention: pre-intervention use mean score of nursing process was low in both groups (mean=20.87 and 21.00) but high between using the nursing process before and after intervention for the experimental group (mean=39.97± 5.13) but remained low in the control group (mean = 20.91± 9.19). The study concluded that nursing intervention was effective in improving the knowledge and use of nursing process among the nurses thus the outcome was positive as changes were noted. Therefore, it is recommended that in-service educational program should be established to provide continuous education for nurses to refresh their knowledge and enhance their usage of nursing process.

**KEYWORDS:** Nursing Process, Knowledge, Use, Intervention, Healthcare, Nigeria



## INTRODUCTION

The place of nursing in healthcare is crucial to the success of the overall goal of the healthcare sector. Therefore, to attain the overall objective of nursing, nursing process, a global concept and foundational basis of the nursing profession must be utilized by all nurses. Nursing process is a dynamic, organized and systematic guide to quality nursing care delivery which nurses use for decision making and allows for demonstration of accountability and responsibility (Mangre, Omondi, Ayieko, Wakasiaka & Wagoro, 2016). Nursing process is a problem-solving method that allows a nurse to address her patient's nursing diagnoses as well as the dependent problems operating through five interrelated steps: Assessment, Diagnosis, Planning, Implementation and Evaluation. In the assessment phase, information about the patient's health status is collected after which the health problems are identified and the nursing diagnosis formulated. Planning is the next phase and entails developing a plan of care that prescribes nursing actions to achieve expected outcomes, thereafter the stated interventions are implemented and finally, the care is evaluated.

This framework for nursing care initiated since the 1960s has gained wide use and has currently become a global tool. Literature shows that practitioners have never been in doubt of the benefit of the nursing process (Ojewole&Samole, 2018). This tool has completely changed nursing practice and patient outcome globally. In addition, the nursing process promotes individualized patient care, fosters and promotes patient- nurse relationship and improved patient's compliance to treatment (Mbithi, Mwenda&Karonja, 2018). The nursing process increases critical thinking skills and enhances the nurses' confidence thereby making her more independent. Other benefits of the nursing process are; enhanced quality of care, efficient use of time and resources, improved general outcome of the patient and improved patients' participation in the planning of their health care. In spite of these benefits, nursing process is yet to be fully implemented and utilized by nurses at all levels of health care especially in developing countries.

Although there have been some researches and studies (Leoni-Scheiber, Mayer & Muller-Staub, 2019; Shewangizaw&Mersha, 2015; Wagoro and Rakuom, 2015) undertaken worldwide on nursing process with a view to enhance the quality of care given to patients by nurses, there are still lacunae in nursing practice because of knowledge and lower utilization of nursing process. In another study, Shewangizew and Mersha (2015) identified poor utilization of nursing process and suggested that lack of nursing process application can lower the quality of care, increase patient's length of hospital stay which results in more treatment cost whereas, Feleke, Garede and Demise (2019) suggested that failure of nurses to comply with nursing process may lead to services that are unsystematic, poor nursing care quality, poor outcome of disease, patient being re-admitted, not satisfied with the care rendered and increased mortality.

In Africa, the use of nursing process is low as evidenced in literature. The estimated prevalence of Baraki, Girmay, Kidanu, Gerensea, Gezehgne and Teklay (2017) reported that the estimated prevalence of utilization of nursing process is 37.1% in Ethiopia but Aynalem (2019) reported that the estimated prevalence of nursing process use is unknown. Semachew (2018) noted rightly that the gap between knowledge of nursing process and its use in clinical practice is the most persistent problem in quality health care provision. Also, another study involving 249 nurses showed that more than two-thirds of the nurses had poor knowledge of the nursing process, and only one-third were able to correctly utilize it while caring for their



patients (Mbithiet *al.*, 2018). These authors concluded that utilization of nursing process was poor among the participants. A study by Mwangi, Mengi'anyi and Mbugua (2019) also identified gap in knowledge of nursing process among the participants. Still in Ethiopia, a study reported that highly knowledgeable nurses were more likely to use the nursing process than low knowledgeable nurses (Barakiet *al.*, 2017). The above studies suggest that lack of utilization of nursing process may be associated with lack of knowledge.

Similar findings were also reported earlier in a study in Kenya by Mangreet *al.* (2016) who identified gap in knowledge and use of nursing process. Likewise, a study carried out in Ghana involving 10 nurses also showed that the respondents were not utilizing the nursing process while caring for their patients as a result of poor knowledge making it difficult to implement all phases of the process (Agyeman-Yeboah and Korsah, 2018). These authors also reported scarcity of the nursing process materials for documentation inappropriate training or learning of the nursing process. The narrative is not different in Nigeria. Ojewole and Samole, (2018) stated that there is available literature reporting on the poor implementation and utilization of the nursing process in hospitals in Nigeria and Rivers state inclusive. Some of the factors reported in their studies which reviewed of 959 medical records in a Nigerian hospital were poor knowledge of nursing process by nurses, difficulty in implementing all the phases of nursing process, scarcity of the resources, and demands of other activities and (Ojewole&Samole, 2018). This suggests that knowledge factor is vital in the implementation of the nursing process in clinical practice.

Knowledge is critical to the implementation and utilization of any process in healthcare practice. Similarly, knowledge is essential in the utilization of the nursing process. It is common knowledge that a person cannot use what they do not have. Therefore, nurses cannot use the nursing process if they have no knowledge of it. As a result, it is expedient that something has to be done to savage the situation to attain quality health care delivery. According to Ojewole and Samole (2018), researchers have focused on evaluation of the implementation and integration of the nursing process into clinical practice rather than helping nurses to acquire the knowledge and skills required to utilize the nursing process. These knowledge and skill enable nurses to identify patient problem and develop the needed care plans which has led to haphazard implementation when it is used. On the other hand, Inuwa, Habu, Emmanuel, Maigari, Dathini, Haruna and Lola (2019) identified that there is adequate knowledge but poor application of nursing process in clinical setting in Nigeria. This was similarly reported by Ojewole and Samole (2018) where only a few (<25%) of the patients' record evaluated had the nursing process sheets in them and with the steps completely documented. Based on this report, Ojewole and Samole (2018) further stated that failure to use it will lead to rendering nursing care that lacked evidence but based on assumption and has the tendency to draw the nursing profession backwards.

Researchers have also carried out studies to investigate how training can improve the utilization of nursing process by nurses. A two-group quasi experimental study in Iran showed that the average score for students' attitude and skills in developing nursing process in the intervention group was greater than those of the control group (Khatiban, Tohidi & Shahdoust, 2019). Another study in Ghana revealed that the nurses who were given in-service training and guided to utilize the nursing process in their practice improved tremendously in the overall utilization of the nursing process (Opare, Asamani, Johnson & Pupilampu, 2017). Likewise, a study on impact of a training programme on utilization of nursing process among community health nurses at primary health care center, Ijebu-Ode postulated that there was



an overall improvement in the knowledge, attitude and practice of the nursing process among the intervention group than the control group (Jokotagba, 2017).

It therefore means that, there is a serious gap in knowledge for the nursing process use. There is no better way to solving this knowledge problem other than a planned practical base intervention (education) to deepen understanding of the process and how to use it in clinical practice for proper bedside nursing. Intervention have proven to be very useful research tool in solving knowledge problems in various health issues and in bringing about positive changes in health behaviors of both health care providers and consumers. Training in nursing process improves nurses' knowledge, attitude and skills. This study will implement an intervention for nurses, in Zonal hospitals, Rivers state on knowledge and utilization of nursing process which is the first intervention to be done and may directly impart the nurses with the needed practical knowledge which will motivate them to use it in patients' care. The intervention will be in the form of training package.

### **Research Hypotheses**

The following hypothesis was tested:

H<sub>01</sub>: There is no significant difference in the pre and post intervention knowledge mean score of nursing process between the intervention and control group.

H<sub>02</sub>: There is no significant difference in the pre and post intervention use mean score of nursing process between intervention and control group.

### **METHODOLOGY**

**Research Design:** A quasi-experimental design comprising of two groups: experimental and control group was used to determine the outcome of nursing intervention on knowledge and use of nursing process among nurses in Zonal Hospitals in Rivers State, Nigeria. The two group will be given pre and post-test.

**Study Population:** The study population consist of all the certified nurse's working in the 2 Zonal hospitals in the two senatorial districts in Rivers State. The total number being six-three nurses of different cadres in the different wards which was gotten from the Rivers Hospitals Management Board. Population of nurses from Zonal Hospital Bori was 29 and Zonal Hospital Ahoada was 34.

**Inclusion Criteria:** The following inclusion criteria was used;

All the nurses below the rank of Chief nursing officer in the selected hospitals working in in-patient's management units and nurses who give their informed consent.

**Exclusion Criteria:** Nurse administrators (Chief nursing officer to Director of nursing services), nurses on study/maternity leave, nurses in general outpatient units and nurses who do not give their informed consent.



## Sample Size and Sampling Technique

57 nurses were selected for the study using Leslie Kish formula. A multi-stage sampling technique was adopted to assess the outcome of nursing intervention on knowledge and use of nursing process among nurses in zonal hospitals, Rivers state. In the first stage, two of the three Senatorial districts, Rivers West and Rivers South-east senatorial districts were purposively selected to avoid contamination of the study because they are farther apart. The remaining senatorial district, Rivers East was excluded due to it being centrally located between the two districts. In the next stage, simple random sampling through balloting (without replacement) was used to draw one hospital out of the three zonal hospitals in Rivers West senatorial district (Ahoada, Degema and Bonny Zonal hospitals name were each written on a piece of paper. The papers were then put into a bag, mixed up and randomly, the researcher selected a paper from the bag bearing Ahoada Zonal and this became the selected hospital from Rivers West) while Zonal hospital, Bori in Rivers South-east senatorial district was automatically selected. Selection of the experimental and control group was determined by tossing a coin after assigning each side of the coin control and experimental group (Zonal hospital Bori; control group and Zonal hospital Ahoada; experimental group). Thereafter, purposive sampling technique was used to select 41 participants (exclusion criteria) after proportional allocation of sample size to each of the hospital: Bori – 20 nurses and Ahoada – 21 nurses because the sample size was relatively small.

**Instrumentation:** Two instruments will be used for the study:

- **Instrument I:** An adapted questionnaire developed by Thet (2017) which was slightly modified was used to collect data from the participants. The questionnaire consists of 2 sections with section A on socio-demographic data consisting of 5 items. Section B is on knowledge of the 5 steps of nursing process consisting of 40 items on a two-point response scale of true and false. Knowledge scores of respondents between 27 to 40 as high, 14 to 26 as moderate, 1 to 13 as low
- **Instrument II:** To collect information regarding the use of nursing process, a structured Nursing Process Use Checklist was used to assess the participant's performance in formulating or applying the nursing process based on a case study in the nursing process record. The checklist was developed using the standard content of the Nursing Process Record adopted from Rivers State University Teaching Hospital and from literature review which included assessment data, formulation of nursing diagnosis and expected outcome/goals, nursing orders or interventions and evaluation. The participants are provided with patient initial assessment data which they used to provide care for the patient. Beginning with proper documentation of the data, identifying the problem and formulating the nursing diagnoses in order of priority and developing a plan of care. The nursing process record is retrieved and the documented information is then recorded against each checklist content as either high, moderate and low. The checklist has 15 items in which each is scored 1 to 3. This was used for pre and post-test assessment. High – 31 to 45, moderate – 16 to 30 and low – 1 to 15.



## Validity and Reliability of Instruments

The research instruments validity was ensured as the instrument was presented to experts in the field of nursing and then the research supervisor who made the necessary corrections and adjustments hence the face and content validity of the instrument were ensured.

The reliability of the instruments was determined using the Cronbach alpha method of reliability. Copies of the instruments was pre-tested using a group of 10 nurses at Zonal hospital, Isiokpo. These nurses were not part of the real sample. After their response, the data was subjected to Cronbach alpha analysis using SPSS Version 23. The reliability coefficient is seen in Table 3.2.

**Table 1: Reliability table**

Sections	Reliability Coefficients
Nursing Process Use Checklist	0.91
Knowledge of Nursing Process Questionnaire	0.79

**Procedure for Data Collection:** The data collection involved three phases:

**Pre- Intervention phase:** The researcher met with the Director of Nursing Services, Rivers State Hospitals Management Board and briefed her as to the study. A letter of permission was collected from the Rivers State Health Research Ethics Committee to the Medical Doctors in charge of Ahoada and Bori Zonal Hospitals after which the researcher consulted with the Directors of Nursing Services of the Ahoada (experimental) and Bori (control) Zonal hospitals and explained the objective of the study, discussed the study modalities and obtained permission for the participants. The venue, dates and time was decided. The participants were visited; the researcher got acquainted with them; discussed the objectives and modalities of the study and also got their informed consent. They were also informed that the study will consist of three sessions for the experimental group and two sessions for the control group of two hours each. They were assured of confidentiality of whatever information that will be collected from them and are free to withdraw at any stage of the study.

**Intervention Phase:** The intervention was held at Zonal Hospital, Ahoada for the experimental group. Activities included arrival of the participants and introduction to the program. The objective was to assess the experimental group prerequisite knowledge on the nursing process and exposing them to the training module while the control group was given pre-test without training. The following are activities of each session:

**Session One:** The participants were welcomed and made comfortable. The purpose of the study was explained to them and how to fill the questionnaire. The pre-test was done for both groups to ascertain their pre-intervention knowledge. A code for each participant was provided to differentiate the participants before the questionnaires were administered. The questionnaire on knowledge was administered directly to the participants to complete and retrieved by the researcher and research assistant after completion. They were then given the case study to develop the nursing process for the patient based on the nursing process record



and this was to assess the pre-intervention use of nursing process and was retrieved too after completion.

**Session Two:** The participants were made comfortable and the training of the intervention group commenced and the objectives of the session was: At the end of the session, the participant will be able to:

- i. Define and list the steps of nursing process
- ii. Explain the phases of the nursing process
- iii. State the benefits of nursing process
- iv. Apply comprehended key details to a new situation.

The teaching focused on the concept, steps and benefits of the nursing process. Participants were allowed to ask and answer questions.

**Session Three:** This was day three and the activity was a practical session on the use of nursing process and documentation for the intervention group. The objectives were:

At the end of the practical session, participants will be able to:

- i. Document information on the nursing process record
- ii. Interpret the documented information
- iii. Develop a plan of care using the assessment data

The researcher welcomed the participants and recapped what was taught on the previous day thereafter the researcher demonstrated how to use the nursing process using the same case study that was used during the pre-test with special focus on the plan of care. The participants were then given time to practice, following the process as demonstrated by the researcher (correct documentation and interpretation of data collected on the nursing process record and plan of care) after which they were assessed and corrections made on their work. They were appreciated and the date for the post-test communicated to the participants.

**Post-Intervention Session:** The post-intervention session took place two weeks after the intervention phase in the respective hospitals. 21 participants from the intervention group and 20 participants from the control group participated in the post-test. The purpose of the session was to assess the outcome of the intervention. The same questionnaire for knowledge was administered to the participants and retrieved after completion. They were then given the case study to develop the nursing process for the patient based on the nursing process record and this was to assess the use of nursing process after which they were retrieved. The participants were appreciated and the need to use the nursing process in the care of their patients was emphasized. The educational materials were then given to the control group.

**Method of Data Analysis:** Data was analyzed using Statistical Package for Social Sciences (SPSS) version 23.0. Descriptive and inferential statistics will be used for the analysis however, the descriptive includes frequencies, percentages, mean and standard deviation to answer the research questions while the inferential statistics was t-test to test the hypotheses at 0.05 level of significance.



**Ethical Consideration:** Ethical clearance was collected from Babcock University Health Research Ethics Committee. Letter of introduction was collected from the Department of Nursing Science, Babcock University, Ilishan Remo, Ogun state. Ethical approval obtained from Rivers State Health Research Ethics Committee. The participants were informed about the research and permission obtained both oral and written consent. The participants were given refreshment during the intervention process because of the duration of the training programme. No financial incentive was given for participating. The researcher did not cause any harm to the participants during the study. They were informed that they are free to withdraw at any stage of the research without penalty. The participants were informed not to write their names and the information obtained from them was kept confidential.

## RESULTS AND DISCUSSION

**Table 2: Participants' Demographic Data**

SN	Variable	Control (N = 20)		Intervention (N= 21)		
		Frequency	%	Frequency	%	
1	Age	20-24years	-	-	5	23.8
		25-29 years	3	15.0	5	23.8
		30-34 years	6	30.0	6	28.5
		35-39 years	6	30.0	2	9.5
		40-44years	2	10.0	3	14.2
		45 years above	3	15.0	-	-
		<b>Total</b>	<b>20</b>	<b>100.0</b>	<b>21</b>	<b>100.0</b>
2	Gender	Male	4	20.0	4	19.0
		Female	16	80.0	17	81.0
		<b>Total</b>	<b>20</b>	<b>100.0</b>	<b>21</b>	<b>100.0</b>
3	Professional Qual.	RN	4	20.0	4	19.0
		RNM	15	75.0	8	38.1
		BNSc	1	5.0	9	42.9
		<b>Total</b>	<b>20</b>	<b>100.0</b>	<b>21</b>	<b>100.0</b>
4	Cadre	NOII	12	60.0	17	81
		SNS	7	35.0	2	9.5
		PNS	-	-	1	4.8
		ACNS	1	5.0	1	4.8
		<b>Total</b>	<b>20</b>	<b>100.0</b>	<b>21</b>	<b>100.0</b>
	Years in service	1-5	3	15.0	3	14.3
		6-15	10	50.0	13	61.9
		16-20	7	35	1	4.8
		21-26	-	-	2	9.5
		27-31	-	-	2	9.5
			<b>20</b>	<b>100.0</b>	<b>21</b>	<b>100.0</b>





The demographic distribution of the respondents as presented in Table 2 above showed that 30% of the participants are between the ages of 30-34 years and 35-39 years respectively for the control group and 28.5% between the ages 30-34 years in the experimental group. This means that the majority of the participants were between the ages of 30 years and above but there were more of them between 30-34 years. However, the mean age of the respondents is 36.1 with a standard deviation of 7.87. The gender of the participants revealed that 80% were females and 20% were males in the control group and 81% females and 19% males in the experimental group. The professional qualifications of the participants as presented in the table showed that in the control group (RN=20% (4), RNM= 75% (15), and BNSc = 5% (1)) and in the experimental group (RN= 19% (0), RNM= 38.1% (8) and BNSc = 42.9% (9)). Regarding professional ranking, the control group had 60% (12) NO II, 35% (7) SNS, 0% PNS and 5% (1) ACNS. The experimental group had 81% (17) NO II, 9.5% (2) SNS, both PNS and ACNS had 4.8% (1) each. The years of service of the respondents revealed that the respondents in both groups have had at least 5 years of service experience with majority haven put in 6 – 15 (56 %) years.

**Table 3: Independent t-test to show the difference in the pre and post intervention knowledge mean score of nursing process between the intervention and control group.**

		N	Mean	Std. Deviation	df	T	Mean diff	Sig
<b>Control</b>	<b>Pre</b>	20	19.65	6.23	18	1.001	0.16	.723
	<b>post</b>	20	19.81	5.89				
<b>Intervention</b>	<b>Pre</b>	21	19.83	6.39	19	5.876	13.71	.000
	<b>post</b>	21	33.54	3.88				

In the control group, results in Table 3 indicated no significant difference in the pre and post intervention knowledge mean score of nursing process (Mean Difference = 0.16, SD = 5.89,  $t(18) = 1.001$ ,  $p = .723$ ). Going through the pre and post intervention knowledge mean scores, one can say that there is no improvement between pre-intervention (19.65) and the post-intervention (19.81). However, in the intervention group a significant difference was observed in the pre and post intervention knowledge mean score of nursing process between the intervention and control groups (Mean Difference = 13.71, SD = 3.88,  $t(19) = 5.876$ ,  $p = .000$ ). Going through the knowledge mean scores as shown above, one can say that there is a great improvement between pre-intervention (19.83) and the post-intervention (33.54).

Based on this, the null hypothesis is rejected, it is therefore inferred that there is a significant difference in the pre and post intervention knowledge mean score of nursing process between the intervention group but not in the control group. It could be deduced from this finding that the difference observed could not have happened by chance but due to educational intervention the participants were exposed to.

The outcome of this study showed the difference between pre and post intervention knowledge mean score of nursing process in the control group to be insignificant while a difference was observed in the pre and post intervention knowledge mean score of nursing process in the intervention and control groups. It could be deduced from this finding that the difference observed can only be as a result of educational intervention the participants were exposed to. This corroborate the study of Githemoet al., (2017) who carried out an



intervention study on knowledge, perspectives and practice of nursing process among nurses in two public hospitals in Kenya. They reported a significant difference on knowledge of nursing process steps and utilization between pre and post test scores. In another study, Linch et al. 2017 asserted that there was a significant impact of intervention on participants' knowledge of pre-test score of 52% to post-test score of 84.9%.

The significant outcome implies that the participants have acquired more knowledge than they had before the intervention. There is deeper understanding of nursing process, but this can only get better with regular practice. This new knowledge can then be put to use by the participants and become more productive in terms of quality nursing care. Since the intervention seem to have given them clearer and better understanding on NP.

**Table 4: Independent t-test to show the difference in the pre and post intervention use mean score of nursing process between the intervention and control group.**

		N	Mean	Std. Deviation	df	T	Mean diff	Sig
<b>Control</b>	<b>Pre</b>	20	20.87	9.22	18	.786	0.04	.398
	<b>post</b>	20	20.91	9.19				
<b>Intervention</b>	<b>Pre</b>	21	21.00	9.17	19	11.407	18.97	.000
	<b>post</b>	21	39.97	5.13				

In the control group, results in Table 4 indicated no significant difference in the pre and post intervention use mean score of nursing process (Mean Difference = .04, SD = 9.19,  $t(18) = 0.78$ ,  $p = .398$ ). Going through the pre and post intervention use mean scores, one can say that there is no improvement between pre-intervention (20.87) and the post-intervention (20.91). However, in the intervention group a significant difference was observed in the pre and post intervention use score of nursing process (Mean Difference = 18.97, SD= 5.13,  $t = (19) 11.407$ ;  $p = .000$ ). Going through the use mean scores as shown above, one can say that there is a great improvement between pre-intervention (21.00) and the post-intervention (39.97).

Based on this, the null hypothesis rejected, it is therefore inferred that there is a significant difference in the pre and post intervention use mean score of nursing process between the intervention group but not in the control group. It could be deduced from this finding that the difference observed could not have happened by chance but due to educational intervention the participants were exposed to.

The outcome of this study showed the difference between pre and post intervention use mean score of nursing process in the control group with no significant difference. However, there was a significant difference between pre and post intervention use mean score of nursing process in the intervention group. It is clearly shown that there is a difference in the pre and post intervention use mean score of nursing process in the intervention and control group. It could be deduced from this finding that the difference observed was due to educational intervention the participants were exposed to. This result is in tandem with the findings of Farahani et al. (2016) who conducted a quasi-experimental study involving a single group of participants on impact of training on nursing process implementation skills among nurses in surgical ward of Shahid Beheshti Hospital, Iran. The findings indicated a significant difference between nursing process use before and after the intervention.



Also, the findings of Keshk, et al. (2018) investigated the effect of intervention on acquiring advanced nursing process skills among nursing students. The finding of the study shows that there was significant difference in knowledge of steps of nursing process by students between pre-test and post-test assessment with improved nursing process implementation after the educational program which was also significant.

## CONCLUSION

In conclusion, the result from this research has validated the effectiveness of the training package on knowledge and use of nursing process by nurses as being effective. Based on the findings of the study, there was a significant difference in the post intervention knowledge and use mean scores of nursing process. Majority of participants in the experimental group had high knowledge and use mean scores of nursing process after the intervention.

This study outlines how improved documentation of the nursing process, caused reflective behavior among the nurses and helped them to plan more suitable nursing care. This study concluded that knowledge and use of nursing process could help its utilization in patient care which will allow for involvement of patients in their own care. Therefore, the use of nursing process should be encouraged in zonal hospitals and beyond by training and retraining of nurses for up to date knowledge and its use in patients' care as this will enhance quality nursing care thus improve patients' health outcome.

## RECOMMENDATIONS

The following recommendations were made based on the findings of this study.

1. Personal development: Nurses should do more individually to update their knowledge to understand the intricacies of using nursing process. They should change their attitude of not being concerned and having aversion to using nursing process. This they can do by having a positive attitude and be committed to changes and current practices in the profession.
2. Review of Nursing school curriculum: Nursing Council of Nigeria should do a quick review of the Nursing school curriculum for content especially for nursing process to see how it is taught and lay emphasis on practical aspects of the process and other concepts that are closely associated with the use of nursing process. The aim is to go beyond theoretical to practical knowledge.
3. Institutional support: Hospitals and Hospitals Management Board should put in place special in-service educational training or other relevant program to provide continuous education for nurses to refresh their knowledge and enhance their usage of nursing process. They should also provide a supportive environment, motivate nurses by rewarding the hardworking ones, and monitor how the nursing process is being use which will promote consistency in nursing process use. There should be guidelines for its use in each unit to help nurses. The nursing process record should be provided and sustained by the hospital management. Where the materials are



made available for the nurses to use, it will be one challenge or excuse less for the nurses.

Proper and regular supervision: There should be supportive and regular supervision by Nursing Council on the implementation and use of nursing process in the hospitals. This will encourage and ensure the use of the process by nurses in various regional hospitals.

4. The Ministry of Health should lift embargo on employment of nurses so as to increase the staff strength and promote appropriate nurse-patient ratio which will lessen the nurses' workload thus allowing her/him have more time for quality patient care.

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