

The Implementation of Nursing Process and Associated Factors among Nurses Working in DebreMarkos and Finoteselam Hospitals, Northwest Ethiopia, 2013

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Abstract

Background: The aim of this study was to describe the level of implementation of nursing process and associated factors among nurses working in DebreMarkos Referral Hospital and Finote Selam District Hospital, northwest Ethiopia, 2013.

Materials and methods: A total of 124 nurses with one year and above working experience in the respective hospitals gave complete response out of 139 total nurses. Self-administered questionnaire from standardized and pre-tested tool were adopted to collect data. The data was entered using Epidata version3.1 and analyzed using SPSS software. In addition to descriptive statistics both bivariate and multivariate logistic regression model fitted to identify possible factors associated with nursing process implementation. Then those variables with P-value of <0.05 at 95% confidence interval (CI) was declared as statistically significant.

Results: Among 124 total respondents 72 (58.2%) were female nurses, the ages of the respondents were between 20 and 62 years with median age of 29 years. They implemented nursing process at various degree of consistency 46 (37.1%) practice it very much, 62 (50%) practiced somewhat and the rest 16 (12.9%) not at all and not really practiced. Low knowledge negatively associate with nursing process implementation, Adjusted odds Ratio (AOR) 0.16, at 95% CI=0.07-0.39) and Presence of patients with uncomplicated case facilitate nursing process implementation (AOR=5.67, at 95% CI=2.52-12.73).

Conclusion: The level of nursing process implementation is low among nurses. Factors associated with implementation of nursing process among nurses working in hospitals were; presence of patients with complicated case and low level of knowledge about nursing process. Nurses' patient care knowledge in general and nursing process in particular should be evaluated and monitored periodically in order to provide on service training.

Keywords: Nurse; Debre Markos; Finote Selam; Hospital; Nursing process; Knowledge; Implementation; Ethiopia

Abbreviations:

SNCPs: Standardized Nursing Care Plans; USA: United State of America; WHO: World Health Organization

Introduction

In the eighties, the nursing process was introduced as a systematic method of planning nursing care internationally [1]. The nursing process has been used for over 25 years as a systematic approach to nursing practice [2]. Yet hospitals confront challenges with regards to nursing involvement, including scarcity of nursing resources; difficulty engaging nurses at all levels from bed side to management; growing demands to participate in more, often duplicative, and quality improvement activities[3].

Nursing process is a systematic method of planning, delivering, and evaluating individualized care for clients in any state of health or illness. Based on the scientific problem-solving method, it constitutes the foundation for nursing practice [4].

Because nurses are the key caregivers in hospitals, they can significantly influence the quality of care provided and, ultimately, treatment and patient outcomes. Consequently, hospitals' pursuit of high-quality of patient care is dependent, at least in part, on their ability to engage and use nursing resources effectively. This will likely become more challenging as these resources become increasingly limited [5]. The scarcity of nurses is a major challenge for hospitals because it impact to not only their ability to provide nursing coverage for patient care, but also to provide adequate nursing resources for other key activities, such as quality improvement [3].

Despite their knowledge of the nursing process, certain factors limited the ability of nurses to implement it in their daily practice, including lack of time, high patient volume, and high patient turnover [6]. Despite these hurdles, the daily application of the nursing process is characterized by the scientific background of the professionals involved since it requires Knowledge and provides individualized human assistance [6]. An investigation of the steps of the nursing process actually implemented in the routine of a university hospital showed that all phases were performed however; problems were identified in the nursing process, involving recording the history and

implementing nursing perception. The evaluation of expected results, in particular, was not adequately recorded [7].

Though the government of Ethiopia give due emphasis on quality of health service in general and quality of nursing care in particular [8], there is still huge gap on the implementation of nursing process among nurses working in hospitals [9]. Therefore this study tried to assess the level and factors associated with nursing process implementation among nurses working in the two hospitals.

Factors affecting the implementation of nursing process

Studies have shown that the implementation of the nursing diagnosis is a challenge for nurses [10]. A study conducted in Nigeria on factors influencing the implementation of nursing process indicated that knowledge factor has the highest predictive value of 0.350 in the use of nursing process, followed by institutional factor (B=0.222) and professional factor (B=0.063) the least is the attitude factor (B=0.019). The result concluded that the knowledge factor has the most important influence on the use of nursing process [11].

It is believed that “most nurses are resistant to change, professional development and advancement. Some nurses tend to hold onto previous knowledge and skills without making efforts to improve and maintain new skills. Many nurses are not willing to accept the challenges of staying abreast with education and development of new skills in nursing practice [12].

Study done in Ethiopia shows that the characteristics work place, nurses who were working in a stressful environment were 0.357 times significantly and less likely to implement nursing process than those worked in a disorganized environment (COR: 0357, 95%CI (0.157-0.814), P: 0.014). Neglecting working environment had no significant association with implementation of nursing process. Hence nursing process implementation needs a safe and encouraging working environment [13].

Material and Methods

Study Design

Institutional based cross-sectional study design was conducted.

Study area

The study was conducted in DebreMarkos referral hospital, Amhara Regional State of Ethiopia Debre Markos is the administrative town of East GojjamZone and it is found in the North West part of the country bounded by Gozamenworeda in the North, South, and East, and Anededworeda in the West. Debre Markos is located on the main road of Addis Ababa to Bahir-Dar. It is 300 km away from Addis Ababa and 265 km from Bahir-Dar. It has 01 referral hospital, 03 governmental health center, 07 health post, 16 private pharmacies, 22 private clinics, 02 diagnostic laboratories and 12 traditional healer service provider and Finote Selam is the administrative town of West Gojjam Zone and it is found in the North West part of the country. It is Located on the main road of Addis Ababa-Bahir-Dar and 387 km away from Addis Ababa and 178 km from Bahir-Dar. It has 01 District hospital, 01 governmental health center, 02 health post, 06 private pharmacy, 08 private clinics, and 05 traditional healer service provider.

Study period: The study was conducted from March 2013 to May 2013.

Source population: All nurses who have been working in DebreMarkos Referral Hospital & Finote Selam District Hospital, North West Ethiopia.

Study population: Nurse who fulfill the inclusion criteria.

Inclusive criteria: Nurses who are working at Debre Markos Referral Hospital & Finote Selam District Hospital for at least six months. Both diploma and degree nurse were included

Exclusive criteria: Nurses who will not be available due to sick leave, temporary reassignment, annual leave; Nurse working for free service.

Sampling technique: All nurses in the two hospitals, there are 108 and 31 nurses in DebreMarkos referral Hospital and FinoteSelam District Hospital respectively was included. These Hospitals were purposively selected based on the general service they have been provided and their number of nurses for study area.

Dependent variable: Implementation of nursing process (Yes/No).

Independent variable: Year of experience; Knowledge of nurses; Nurses demographics; Nurses skill; Hospitals organizational structures.

Operational Definition

Skill: Daily nurses practice performed for participant. Those respondents who have scored >26 are highly skill full; 18-25 are moderately skill full, and <17 are low skill full group out of 30 [13].

Knowledgeable nurses: Nurses awareness about nursing process. Highly knowledgeable nurses are those 80% of the questions, moderately knowledgeable nurses are those answered in between 55-79.9%, and low knowledgeable nurses those scored < 55% [13].

Data Collection Tools and Method of Data Collection

Data was collected by using structured self-administered questionnaire. Structured English version questionnaire which is adapted from previous study. It was collected by trained graduating nursing students after one day training is given on the general purpose, data collection methods and data handling techniques.

Data quality assurance

Pretests were done among health center nurse who were not later include in the main study. The principal investigators supervise during data collection time and each night there were a discussion to correct any misunderstanding accordingly.

Data processing and analysis

Data were entered using Epidata software version 3.1 and exported to SPSS version 16 for further analysis. Descriptive statistics was performed on mean, median; range and percentage of dependent and independent variables. Binary logistic regression was run to identify statistically significant independent variables. Both bivariate and multivariate logistic regression model was fitted to select associated factors and to control cofounding respectively. Those variables significantly associated with nursing process implementation at P-value of 25% were included for further analysis in multivariate analysis and final decision was made on p-value 0.05 at 95% CI for the significant association of nursing process implementation.

Ethical consideration

Ethical clearance was obtained from Debre Markos University Medicine and Health Sciences College, Department of nursing. Before the beginning of data collection permission letter was provided to the two hospitals administrative body for data collection. After that participants oriented about the purpose and procedure of data collection, and that confidentiality and privacy is ensured. It was also cleared that participation was fully based on the willingness of participants using written consent.

Result

Socio demographic characteristics of the respondents

In this study 139 nurses were included out of which 124 nurses give complete response from Debre Markos Referral hospital and Finote Selam District hospital with response rate of 89%. Among the respondents 72 (58.2%) were female nurses, the age of the respondents were between 20 and 62 years with median age of 29 years. Age distribution of study participants was not normally distributed so that we use median to group it. So that 64 (56.6%) of nurse were at age of 29 and below. Majority of them were Amhara in ethnic origin 115 (92.7%) fifty nine (46.6%) were married Table 1.

Characteristics	Frequency	Percentage (%)
Sex		
M	52	41.90
F	72	58.10
Age (median)		
<29 years	64	51.60
>29 years	60	48.40
Ethnicity		
Amhara	115	92.70
Others*	9	7.30
Marital status		
Single	38	30.60
Married	59	47.60
Others (divorce, widowed and separate)	27	21.80
*others=Tigray, Oromo		

Table 1: Socio-demographic characteristics of Nurses in Debre Markos and Finote Selam Hospitals, Northwest Ethiopia, 2013 (n=124)

Organizational and nurses related factors

Work experience of nurse varies from one to twenty seven years while majority lies on less than five years (mean 6.64 and median 4 years). Nurses whose clinical service was less than and equal to four years were 72 (58.1%) and the rest 52 (41.9%) nurses had greater than four years. Since it is not normal distribution we took the median. Nurse who respond as they have no enough equipment necessary for

patient care was 71 (57.3%) and with the necessary equipments 43 (42.3%). Working hours, number of patient get care by nurses and other organizational factors are given below in Table 2.

Characteristics	Frequency	Percentage (%)
Working experience (median)		
<4 years	72	58.10
>4 years	52	41.90
Daily working hours (Ethiopian civil servant working hrs)		
< 8 hrs	113	91.10
>8 hrs	13	8.90
Number of patients get care per day by a nurse (mean)		
<14 patients	78	62.9
>14 patients	46	37.1
got orientation		
Yes	34	27.4
No	90	72.6
Knowledge		
Knowledgeable	72	58.1
Low knowledge	52	41.9

Table 2: Organizational and nurses related factors for Nursing process implementation in Debre Markos and Finote Selam Hospitals, Northwest Ethiopia, 2013 (n=124)

Study participants respond on the influencing factors for the implementation of nursing process rated according to reason listed here; patients discharge before completing the planned intervention 116 (93.5%), non-cooperative patients 101 (81.5%), inability to collect require data 88 (71%) and present of patients with complicated case 64 (51.6%).

Knowledge and practice of nurses on nursing process

Among the ten questions about knowledge that measure in percentage rated as highly knowledgeable those who answer 80% correctly, moderately knowledgeable those who give correct response for 65% and less than those who give correct answer for less than 65% were grouped as low knowledge. Based on this 72(58.1%) were highly knowledgeable, 38 (30.6%) were moderately knowledgeable and 14 (11.3%) were under the group of low knowledgeable category. But for the purpose of analysis and we believe that there is no as such difference between the moderate and low knowledge we combine them together and have two category only high and low knowledge. Study participants responded for the frequency of implementing nursing process that 46 (37.1%) practice it very much, 62 (50%) practiced somewhat and the rest 16 (12.9%) not at all and not really practiced.

In the bivariate analysis of logistic regression, seven variables were statistically significantly associated with the level of nursing process implementation. Namely working experience of more than 4 years was almost double more likely to implement nursing process than working experience of less than or equal to 4 years, (COR=2.60, 95% CI=1.23-5.50). Availability of necessary equipment's for patient care in the hospital were three times more likely to implement nursing process than inadequate one (COR=3.30, 95% CI=1.54-7.09). Those nurses got orientation during the entrance of the respective hospitals were more likely to implement nursing process (COR=2.96, 95% CI=1.31-6.67). Patients who were cooperative during patient care were three times more likely to get nursing process than those not cooperative (COR=3.35, 95% CI=1.32-8.56). Patients who presented with no complication were about six times more likely to get nursing process (COR=5.67, 95% CI=2.52-12.73) and nurses who were knowledgeable were more likely to implement nursing process Table 3 and 4.

Characteristics	Frequency	COR at 95% CI	p-value
Sex			
M	52	1.95 (0.93-4.09)	0.08
F	72	1	
Age (median)			
<29 years	64	1	
>29 years	60	1.69 (0.81-3.51)	0.17
Marital status			
Single	115	92.70	
Married	9	7.30	
Marital status			
Single	38	1	
Married	39	1.32 (0.57-3.08)	0.52
Others (divorce, widowed and separate)	27	0.96 (0.37-2.37)	0.94

Table 3: Bivariate logistic regression analysis of factors associated for the implementation of nursing process among nurses in Debre Markos and Finote Selam Hospitals, Northwest Ethiopia, 2013 (n=124)

Characteristics	Frequency	COR at 95% CI	p-value
Working experience (median)			
<4 years	72	1	0.000*
>4 years	52	2.6 (1.23-5.50)	
Daily working hours (Ethiopian civil servant working hrs)			
< 8 hrs	113	1	
>8 hrs	13	1.64 (0.41-6.51)	0.48

Number of patients get care per day by a nurse (mean)			
<14 patients	78	1	0.25
>14 patients	46	1.54 (0.74-3.21)	
necessary equipment's for care			
Yes	42	3.30 (1.54-7.05)	0.002*
No	82	1	
got orientation			
Yes	34	2.96 (1.31-6.67)	0.009*
No	90	1	

Table 4: Bivariate logistic regression analysis of factors associated for the implementation of nursing process among nurses in Debre Markos and Finote Selam Hospitals, Northwest Ethiopia, 2013 (n=124)

In multivariate logistic analysis including variables significant at bivariate analysis with other variable considered as significant from other literatures were analyzed and two variables were statistically significant to associate the implementation of nursing process by nurses working in hospitals. These were nurses with low knowledge was 0.16 times less likely to implement nursing process (AOR=0.62, 95% CI=0.07-0.39) and nursing process was not implemented almost six time more likely than patients who present without complication (AOR=4.33, 95% CI, 1.40-13.41) Table 5.

Characteristics	Frequency	COR at 95% CI	P-value
Knowledge			
Knowledgeable	72	1	0.000*
Low knowledge	52	0.16 (0.07-0.39)	
patient discharge before completing the planned			
Yes	116	1	
No	8	1.02 (0.23-4.48)	0.98
Patient are cooperative			
Yes	23	3.35 (1.32-8.56)	
No	101	1	0.011*
Ability to collect the required material for care			
Yes	36	2.98 (1.34-6.64)	0.008*
No	88	1	

Complicated case presentation			
Yes	64	1	0.000*
No	60	5.67 (2.52-12.73)	

Table 5: Bivariate logistic regression analysis of factors associated for the implementation of nursing process among nurses in DebreMarkos and FinoteSelam Hospitals, Northwest Ethiopia, 2013 (n=124)

COR: Crude Odds Ratio; CI: Confidence Interval, *statistically significant at 95% CI with P-value<0.05.

Discussion

This study describes the level of nursing process implementation and associated factors among 124 nurses in Debre Markos Referral Hospital and Finote Selam District Hospital northwest Ethiopia.

About 37.1% of nurses were implementing nursing process very much and the rest 62.9% fall from not all practicing to somewhat practicing. This was measured from skill assessment scores based on 1 not at all, 2 not really, 3 undecided, 4 somewhat and 5 very much. Inline to this there were six skill questions from that respondent who score 26 and above were considered as very much implementing nursing process. Similar study among nurses working in selected government hospitals in Addis Ababa, Ethiopia revealed that 52.1% of nurse implemented nursing process [13]. Regarding their level of skill towards nursing process 37.1% were highly skillful, 50% were moderately skillful and 12.9% were low in skill. Level of skill was similar with findings in Addis Ababa. Another study conducted on factors influencing the implementation of standardized nursing care plan in Sweden show that 98% of the respondents used standardized nursing care plan in their everyday work [14]. This huge discrepancy (37.1Vs 98%) may be because of the difference between the two countries socio demographic factors for nurses, patients and organizational facilities that facilitate nursing process. Additionally, the later study was done in university hospitals in which many of nurses are believed to have better knowledge to practice nursing process.

In the bivariate analysis of logistic regression, seven variables were statistically significantly associated with the level of nursing process implementation. Namely working experience of more than 4 years was almost double more likely to implement nursing process than working

experience of less than or equal to 4 years, Availability of necessary equipment's for patient care in the hospital were three times more likely to implement nursing process than inadequate one. Those nurses got orientation during the entrance of the respective hospitals were more likely to implement nursing process Patients who were cooperative during patient care were three times more likely to get nursing process than those not cooperative. Patients who presented with no complication were about six times more likely to get nursing process and nurses who were knowledgeable were more likely to implement nursing process.

This finding is consistent with study done in Nigeria on factors affecting the use of nursing process on health institutions [11]. This study identifies the four basic predictors of nursing process implementation. Our result in work experience, knowledge of nurses and caring for patients with complicated case can be grouped under professional and attitudinal factors that predict nursing process implementation. Availability of necessary nursing care equipment's and orientation while joining the organization can be under institutional factors that inhibit implementation of nursing process.

Therefore the above factors the influence implementation of nursing process can be grouped under knowledge related, institutional issues, professional factors and attitudinal factors as it also indicated in [11].

In multivariate logistic analysis including variables significant at bivariate analysis with other variable considered as significant from other literatures were analyzed and two variables were statistically significant to associate the implementation of nursing process by nurses working in hospitals. The first factor is nurse who were knowledgeable were more likely to implement nursing process. This result is in line with study in Ethiopia [11,13]. However, despite their knowledge of the nursing process, certain factors limited the ability of nurses to implement it in their daily practice, including lack of time, high patient volume, and high patient turnover. Despite these hurdles, the daily application of the nursing process is characterized by the scientific background of the professionals involved since it requires Knowledge and provides individualized human assistance.6 this is true because knowledge is a prerequisite to practice. Therefore, nurses should have adequate training in nursing process implementation. The second statistically significant factor was the present of patients with complicated case. This might be due to the increase of work load on nurse that hinder the full practice of nursing process which is vital for such type of patients. Under a heavy work load, nurses may not have sufficient time to perform tasks that can have a direct effect on patient safety [13] Table 6 and 7.

Characteristics	Frequency	COR at 95% CI	AOR at 95% CI	P-value
Sex				
M	52	1.95 (0.93-4.09)	1.42 (0.52-3.86)	0.49
F	72	1	1	
Age (median)				
<29 years	64	1	1	0.90
>29 years	60	1.69 (0.81-3.51)	1.09 (0.30-4.02)	
Working experience (median)				

<4 years	72	1	1	0.28
>4 years	52	2.6 (1.23-5.50)	2.07 (0.55-7.84)	
Daily working hours				
< 8 hrs	113	1	1	0.08
>8 hrs	11	1.64 (0.41-6.51)	0.16 (0.02-1.22)	
Number of patients get care				
<14	78	1	1	0.70
>14	46	1.54 (0.74-3.21)	1.24 (0.42-3.72)	

Table 6: Bivariate and Multivariate logistic regression analysis of factors associated for the implementation of nursing process among nurses in DebreMarkos and FinoteSelam Hospitals, Northwest Ethiopia, 2013 (n=124)

Characteristics	Frequency	COR at 95% CI	AOR at 95% CI	P-value
Knowledge				
Knowledgeable	72	1	1	0.0
Low knowledge	52	0.16 (0.07-0.39)	0.12(0.04-0.39)	01*
Patient are cooperativeness				
Yes	23	3.35 (1.32-8.56)	1.63(0.41-6.52)	0.4
No	101	1	1	9
present of the patient with complication				
Yes	64	1	1	
No	60	5.67(2.52-2.73)	4.33(1.40-13.41)	0.011*

Table 7: Bivariate and Multivariate logistic regression analysis of factors associated for the implementation of nursing process among nurses in DebreMarkos and FinoteSelam Hospitals, Northwest Ethiopia, 2013 (n=124)

AOR: Adjusted Odds Ratio; COR: Crude Odds Ratio; CI: confidence interval; *statistically significant at 95% CI with P-value<0.05.

Conclusion

The study indicated that the level of nursing process implementation was low among nurses working in DebreMarkos Referral Hospital and FinoteSelam District Hospital, northwest Ethiopia during the study period.

Factors associated with implementation of nursing process among nurses working in hospitals were; lack of clinical experience, lack of orientation in the hospital, lack of necessary equipment's for patient care, uncooperative patients with complicated case and low level of knowledge about nursing process identified in this study.

Recommendation

It is identified that the level of nursing process implementation was low so that the following measures should be taken to minimize the burdensome of factors affecting implementation of nursing process.

To Nurses and nurse educators

Nurse and nurse educator should update their knowledge on nursing process theoretical aspect as well as practical aspect especially fresh graduates should be monitored

Additional qualitative research should be conducted in large scale from the nationwide to recommended feasible actions for the concerned stalk holders

Nurse should approach systematically in way to provide full access for nursing care for patients with complicated case.

To health institutions

Health institutions should avail all necessary equipments for patient care since it highly affects the implementation of nursing process for patients

Newly graduated nurses should be also oriented on how to provide nursing care, available resources for nursing care and other work related issues.

Nurses' patient care knowledge in general and nursing process in particular should be evaluated and monitored periodically in order to provide on service training.

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Author contributions

NA writes the proposal, design the study, and participate in supervision of data collection. HA and MA participate in the data analysis, written up of results, discussion. All of the authors contributed in manuscript preparation, critical evaluation of the study result.

Disclosure

The authors would like to declare that there is no conflict of interest in financial and or other intellectual aspect.

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