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RESEARCH ARTICLE

BARRIERS AND FACILITATORS FOR EXECUTION OF NURSING PROCESS FROM NURSES' PERSPECTIVE

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Abstract

Background: Nursing process used in clinical practice worldwide to deliver quality-individualized care to patients and lack of its application can reduce the quality of care. Applying nursing process requires understanding of factors affecting its implementation from the perspective of nurses. **Methods:** Aim: the present study aimed to explore barriers and facilitators for execution of nursing process from nurses' perspective. Research Design: a descriptive-exploratory design utilized in this study. A convenient sample of 148 nurses recruited for the current study. Study Tool: The utilized questionnaire consisted of four parts: included the socio-demographic data; previous experiences and practices of the nursing process (NP); the advantages of the NP and finally, the difficulties to the execution phase of the NP; opinions on perceived barriers and facilitators of NP execution. **Results:** Majority of nurses (94.6%) indicated that they had good knowledge of the NP and confidence in ability to apply it (79.8%). Top one advantage reported for NP is that it is a mean of unifying nursing practice (96%). Data collection identified by majority as the difficult phase (63.5%). Nurses identified barriers related work as the most commonly encountered barriers (81%). Having theoretical knowledge and practical experience (96%) was the most facilitator for easy execution of the NP. **Conclusion and Recommendations.** There is a need to put in practice training strategies for faculty and clinical nurses, considering the meaning they attribute to the nursing process and to other contextual elements that can influence its operation

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Introduction

Nursing process is a global concept, which forms the foundation of nursing as profession. The use of nursing process in most hospitals is lagging behind despite all the effort of nursing professionals to implement its use (Momoh & Chukwu, 2010). The introduction of nursing process as a systematic and scientific approach to patient's care started in the early 60s in the developed countries. It is a widely accepted scientific method to guide procedures and quality nursing care (Pokorski, et al., 2009). The process has defined as a systematic and dynamic way to deliver nursing care, operating through five interrelated steps: assessment, diagnosis, planning, implementation and evaluation (Alfaro-Lefevre, 2006). Yildirim and Ozkahraman, (2011) emphasized that the nursing process is synonymous within the discipline of nursing which considered as an organized, systematic approach used by nurses to meet the individualized health care needs of their patients.

Nursing is a profession that demands a consistent, high level of critical thought coupled with critical actions. Critical thinking in nursing has equated with the nursing process, which confines critical thinking to a linear, narrow, single right solution, problem-solving process (Yildirim & Ozkahraman, 2011). Application of critical thought within the nursing process is an essential construct in the professional practice of nursing and is an outcome within nursing education curriculum (Alfaro-LeFevre, 2004). The growth of nursing as a profession has necessitated the application of a logical and rational method of problem solving in making decisions about patient care, instead of relying on unsystematic and intuitive processes (Savett & Good, 2005). The Nursing Process is a technology of care that guides the sequence of clinical reasoning and improves the quality of care (Dal Sasso, et al., 2013). It integrates, organizes, and ensures the continuity of information, enabling nursing staff to evaluate their efficiency and effectiveness and to modify their performance according to patient recovery results (Dal Sasso, et al., 2013). Consequently, this underpins the need for the effective implementation of the nursing process in patients care (Afoi, et al., 2012). Yildirim and Ozkahraman, (2011) further emphasized that the nursing process has been used as a problem-solving activity to think about a plan of care as the foundation for professional practice in everyday nursing practice. According to the American Nurses Association (American Nurses Association, 2009), the nursing process is a deliberate framework that all professional nurses use to solve problems and provide high quality standards of care across populations and settings.

The nursing process, as a scientific-problem solving model, uses the steps of assessment, nursing diagnosis or problem identification, planning, implementation, and evaluation in a step-by-step process to plan care for patients (American Nurses Association, 2009). During the planning phase, nurses consider possibilities and interventions relevant to the problems identified (Alfaro-LeFerve, 2004). According to the North American Nursing Diagnosis Association (NANDA, 2007), nursing diagnosis constitutes a clinical judgment of responses from the individual, family, or community to the vital processes or to current or potential health problems, which provide a basis for the selection of nursing interventions, in order to achieve results for which the nurse is in charge. Therefore, the nursing portion of the record is a mean to not only document and compare, but also to ensure and improve the quality of nursing care (Müller-Staub et al., 2007).

The nursing process as routine care actions represents the nurses' experience in care delivery based on the evaluation of patients' needs and conditions, planning of nursing actions/interactions, performing care actions/interactions with more and less autonomy, partially recording those (Ledesma-Delgado & Mendes, 2009). There is a demand to establish the nursing process in practical care in every health institution, within hospitals as well as in the community as a whole (Pokorski, et al., 2009). The application of the nursing process is essential to the core of professional nursing practice (American Nurses Association, 2009). Effective implementation of the nursing process leads to improved quality of care and stimulates the construction of theoretical and scientific knowledge based on the best clinical practice (Pokorski, et al., 2009). In a study conducted by Granero-Molina et al. (2012), they report that nursing process means providing nurse practitioners with a scientific method for the application of care. Authors further added that nurses mostly positively perceived the relation between the nursing process and their practical work, whose implementation would grant meaning and relevance to their professional knowledge and raise their nursing to the same level as the profession in the international sphere.

The nursing process has been the target of discussion and research as a nursing care instrument to be taught, used (in clinical practice besides nursing management) and assessed (Garcia et al., 2009; Pereira et al., 2009 & Ramos et al., 2009). Some scholars have recently shown the investments made to use the nursing process in care practice, providing information on what nurses know, believe and adopt in various situations and difficulties encountered in hospitals (Carvalho & Souza, 2008). These studies indicate the potential of investments in its practice, by approaching nursing practice and health care, education and research (Ledesma-Delgado & Mendes, 2009). In practice, however, not all steps systematically implemented. Studies have revealed difficulties in establishing and using the nursing process (NP) within institutions during the last years, at many countries (Lima & Kurcgant, 2006; Pokorski, et al., 2009). Nevertheless, little known about the variables that are potentially associated with the use of the NP in health services. Advancing in knowledge on this process involves the exploration and analysis of variables related not only to the usage characteristics of the NP at institutions, but also to the characteristics of the institutional and nursing professionals' environment (Guedes et al., 2012).

Based on the importance of nursing process, we confirm the researchers' opinion that the nursing process is an achievement filled with interpretations that should utilized by nurses in practice as a method for care provision, represents challenges in education and practice. The nursing process use needs to expand in

the hospital settings, based on the view of nurses working there, emphasizing their estimation about barriers and facilitators for the nursing process application.

Aim of the study:

The present study aimed to explore barriers and facilitators for execution of nursing process from nurses' perspective.

Study design:

A descriptive-exploratory design was utilized in this study. This design would help increase understanding of a subject as it can help a researcher begin to determine why and how things happen. The purpose of descriptive studies is to observe, describe, and document aspects of a situation as it naturally occurs and it also can serve as a starting point for hypothesis generation or theory development (& Beck, 2004).

Study setting:

This study carried out in Najran General Hospital and King Khalid Hospital; the two Hospitals located at Najran region; Saudi Arabia.

Sample:

A convenient sample of 148 nurses working in both Najran General Hospital and King Khalid Hospital recruited for the current study. Inclusion criteria included: willingness to participate in the study and working in any of the following inpatient units; medical, surgical, intensive care, and coronary care units. While nurses who are working in outpatient clinics, hemodialysis units, ambulatory surgery units and endoscopy units were excluded from study; as patients spend only few hours in these units and nurses cannot perform the nursing process that needs days for implementation of its phases.

Tools:

The tool utilized for data collection in the current study consisted of four parts: Part (1): included the socio-demographic data of the study participants such as age, qualification, years in service, rank, work unit, and main activity in the unit. Part (2): contained items related to previous experiences and practices of the nursing process. It is a likert like scale with four options; strongly agree, agree, disagree and strongly disagree. Part (3): involved information related to advantages of the nursing process as perceive by nurses. It is also a likert like scale with four options; strongly agree, agree, disagree and strongly disagree. Part (4): assessed difficulties attributed by the nurses to the execution phase of the nursing process; opinions on perceived barriers and facilitators of nursing process execution. That is a likert like scale with four options; strongly agree, agree, disagree and strongly disagree.

This questionnaire developed by researchers after extensive literature review of relevant qualitative and quantitative studies (Afoi, et al., 2012; Alda, et al., 2008; Granero-Molina et al., 2012; Takahashi, et al., 2008).

Tool validity:

The developed instrument tested for its content validity through five experts from medical surgical nursing department.

Statistical analysis

The collected data were organized, tabulated and statistically analyzed using SPSS software statistical computer package version 15. Frequency, percentage calculated.

The pilot study:

A pilot study conducted in 10% of the study sample to test the clarity and validity of the study tool contents; and members involved in the pilot study excluded from the study sample.

Administrative and ethical consideration:

An official permission obtained from hospital medical directors of both hospitals as well as nursing directors to conduct the present study. Thereafter, the study potential participants approached and an explanation of the study nature, purpose and procedure provided to them. They informed that participation is

voluntary, that their responses will be confidential and that any information gained from their responses will be presented in aggregate format, and nothing will be revealed about their personal identity.

Those who accepted participation in the study requested to sign the research study consent. They further handed with the study instrument and a full explanation provided on how to fill the instrument. The rights and concerns of the subjects given priority and confidentiality maintained in the course of the research.

Results

One hundred-forty eight nurses completed the survey. Majority of them were in the age category of 21 – 30 years (57.4%). Hundred and five had years of experience ranged between 1- 10 years. Baccalaureate degree prepared nurses and being directly involved in patient care were the prevailing characteristics among the study sample. Almost sixty percent were nurses working in general medical wards and general surgical wards while forty percent were working in either intensive care or coronary care units. Table 1

Table 1: Socio-demographic Characteristics of Nurses Participating in the Study

Age	20 and below	21-30	31-40	41-50	51-60
	<i>f (%)</i>	<i>f (%)</i>	<i>f (%)</i>	<i>f (%)</i>	<i>f (%)</i>
	8 (5.4)	85 (57.4)	34 (23.0)	8 (5.4)	13 (8.8)
Years in Service	1-10	11-20	21-30	31-40	
	<i>f (%)</i>	<i>f (%)</i>	<i>f (%)</i>	<i>f (%)</i>	
	105 (70.9)	26 (17.6)	12 (8.1)	5 (3.4)	
Ward/ unit	Surgical	Medical	ICU	CCU	
	<i>f (%)</i>	<i>f (%)</i>	<i>f (%)</i>	<i>f (%)</i>	
	53 (35.8)	36 (24.3)	36 (24.3)	23 (15.5)	
Main activity	Patient care	Care planning	Administration	Others	
	<i>f (%)</i>	<i>f (%)</i>	<i>f (%)</i>	<i>f (%)</i>	
	118 (79.9)	18 (12.2)	7 (4.7)	5 (3.4)	
Rank	SN	NO	Others		
	<i>f (%)</i>	<i>f (%)</i>	<i>f (%)</i>		
	127 (85.8)	13 (8.8)	8 (5.4)		
Qualification	Vocational	Bachelor			
	<i>f (%)</i>	<i>f (%)</i>			
	55 (37.2)	93 (62.8)			

Majority of nurses indicated that they had good knowledge of the nursing process from attended college as well as from seminars and workshops, which were carried by in their workplaces. Majority also reported confidence in ability to apply nursing process and good understanding as well as willingness to apply the nursing process in patients care. Table 2

Table 2: Previous Experiences and Practices of the Nurses Regarding Nursing Process

Items	Strongly Agree <i>f (%)</i>	Agree <i>f (%)</i>	Disagree <i>f (%)</i>	Strongly Disagree <i>f (%)</i>
Nurses views about their Nursing Process knowledge:				
I have good knowledge in NP	55(37.2)	85(57.4)	4(2.7)	4(2.7)
I got knowledge from training College	61(41.2)	79(53.4)	5(3.4)	3(2.0)
I got knowledge from seminars/workshops	31(20.9)	96(64.9)	16(10.8)	5(3.4)
I need more information and tutorials to practice NP	46(31.1)	86(58.1)	9(6.1)	7(4.7)
Perceived confidence in application of nursing process:				
I am able to apply NP correctly	53(35.8)	80(54.1)	14(9.5)	1(0.7)
I understand NP but found it difficult to implement	24(16.2)	62(41.9)	57(38.5)	5(3.4)
I found it confusing	18(12.2)	39(26.4)	70(47.3)	21(14.2)
I felt very unsure	16(10.8)	34(23.0)	59(39.9)	39(26.4)

Acceptability and willingness to practice the nursing process by nurses:

I am willing to apply NP in patients' care	66(44.6)	65(43.9)	12(8.1)	5(3.4)
I will prefer to be left out of this NP practice	24(16.2)	33(22.3)	72(48.6)	19(12.8)
Application of it should be left for higher nursing degrees	34(23.0)	31(20.9)	57(38.5)	26(17.6)

Majority of nurses had commonly high agreements on the different advantages of using the nursing process. Among advantages which had the highest agreement were: nursing process is a mean of unifying nursing practice; it provides an opportunity for ongoing learning; it allows review and evaluation of nursing interventions; continuity of care given to the patient/client is improved and that it helps nurses to appreciate the reasons for nursing actions (96%, 95%, 95%, 95% and 93%; respectively). Table 3.

Table 3: Top Ten Perceived Advantages of Using Nursing Process

Perceived Advantages	Response			
	Strongly Agree <i>f</i> (%)	Agree <i>f</i> (%)	Disagree <i>f</i> (%)	Strongly Disagree <i>f</i> (%)
Nursing process is a mean of unifying nursing practice	62(41.9)	82(55.4)	4(2.7)	0(0.0)
Facilitates own role	50(33.8)	88(59.5)	8(5.4)	2(1.4)
Care plan permits the prioritized individualization of care	47(31.8)	92(62.2)	6(4.1)	3(2.0)
The continuity of care given to the patient/client is improved	48(32.4)	95(65.2)	3(2.0)	2(1.4)
It provides an opportunity for ongoing learning	53(35.8)	90(60.8)	5(3.4)	0(0.0)
It allows mutual sharing through team discussions about care	58(39.2)	80(54.1)	7(4.7)	3(2.0)
It allows review and evaluation of nursing interventions	58(39.2)	85(57.4)	4(2.7)	1(0.7)
It helps nurses to appreciate the reasons for nursing actions	59(39.9)	82(55.4)	6(4.1)	1(0.7)
Deciding with the patient/client, on the desired outcomes for care	52(35.1)	87(58.8)	7(4.7)	2(1.4)
It enables the nurse to realize her potentials as a decision maker	50(33.8)	88(59.5)	9(6.1)	1(0.7)

Study participants further identified phases of the nursing process related components where they find difficulties in implementing. Data collection was identified by majority as the difficult phase followed by prescription, diagnosis, evaluation and lastly planning phase. Interview was described by majority as most difficult component in data collection, diagnostic category was the most difficult in diagnosis phase and intervention proposal was perceived as the difficult component in the planning phase. Table 4.

Table 4: Difficulties Found by Nurses Regarding Phases of the Nursing Process

Phases of Nursing Process	Difficulties	
	Yes <i>f</i> (%)	No <i>f</i> (%)
Data collection	94(63.5)	54(36.5)
Interview	100(67.6)	48(32.4)
Physical exam	75(50.7)	73(49.3)
Diagnosis	84(56.8)	64(43.2)
Defining characteristics	86(58.1)	62(41.9)
Diagnostic Categories	89(60.1)	59(39.9)
Related factors	83(56.1)	65(43.9)

Planning	64(43.2)	84(56.8)
Definition of expected results	76(51.4)	72(48.6)
Intervention proposals	79(53.4)	69(46.6)
Prescription	89(60.1)	59(39.9)
Evaluation	72(48.6)	76(51.4)

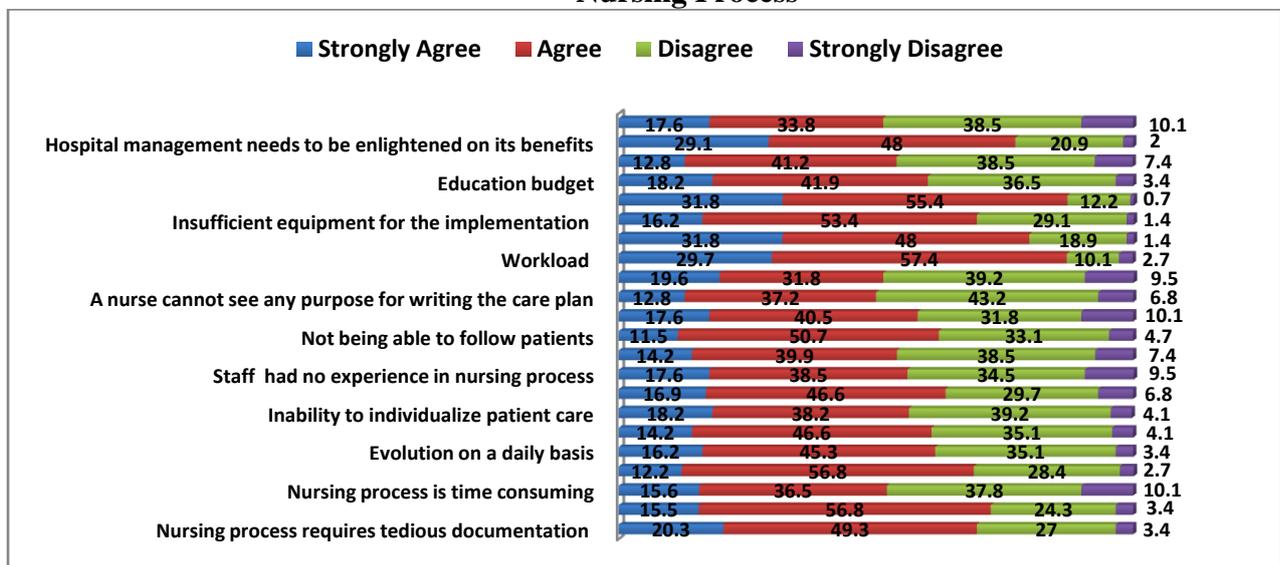
Table 5 showed most frequently identified barriers encountered by nurses when executing the nursing process. Nurses identified barriers related work as the most commonly encountered barriers followed by barriers related to nursing process and resources factors (81.1%, 68.2%, 67.6%; respectively).

Table 5: Barriers Encountered By Nurses for Execution of the Nursing Process

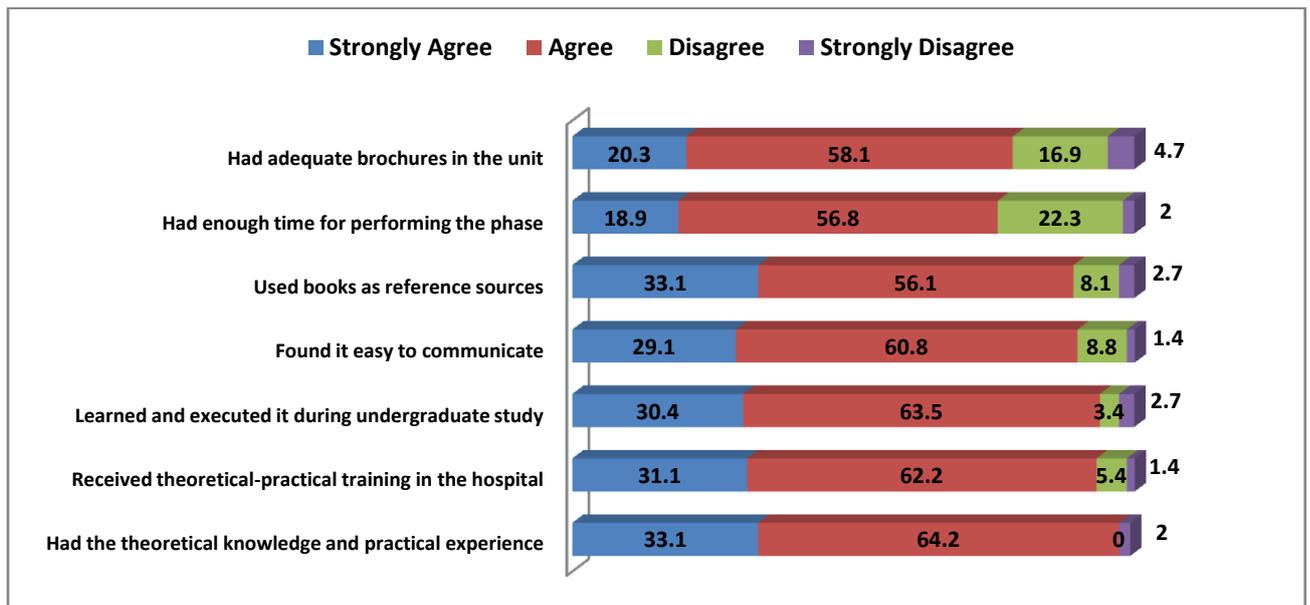
Barriers	Response			
	Strongly Agree <i>f</i> (%)	Agree <i>f</i> (%)	Disagree <i>f</i> (%)	Strongly Disagree <i>f</i> (%)
Barriers related to nursing process	16(10.8)	85(57.4)	46(31.1)	1(0.7)
Barriers related to nurses' perception and experience	17(11.5)	72(48.6)	55(37.2)	4(2.7)
Barriers related to work	20(13.5)	100(67.6)	28(18.9)	0(0.0)
Barriers related to resources	14(9.5)	86(58.1)	48(32.4)	0(0.0)
Barriers related to administration	23(15.5)	70(47.3)	53(35.8)	2(1.4)

Figure 1 showed most frequently identified obstacles encountered by nurses when executing the nursing process. Nurses identified inadequate staff in the unit and workload as the most commonly encountered barriers (81% each).

Figure 1: Nurses Perspectives on Barriers Encountered in Execution of the Nursing Process



Nurses further reported on aspects, which facilitated utilization and execution of the different phases of the nursing process. Having theoretical knowledge and practical experience; learned and executed it during undergraduate study; and receiving theoretical-practical training in the hospital were identified the most facilitator for easy execution of the nursing process (96%, 91% and 90%; respectively). Figure 2.

Figure 2: Nurses Perspectives on Facilitators for Nursing Process Execution

Correlation between age, years in service and barriers encountered by nurses for execution of nursing process revealed a highly significant correlation between age and years of experience but neither age nor experience related to any of the perceived barriers for execution of nursing process. Further, highly significant correlations shown among the perceived barriers. Barriers related to nurses' perception and experience was highly correlated with barriers related to nursing process ($r=.743$, $p<0.01$); barriers of resources ($r=.782$, $p<0.01$); and barriers from administration ($r=.793$, $p<0.01$). Barriers of resources has also shown very significant relation with barriers related to administration ($r=.766$, $p<0.01$). Table 6.

Table 6: Pearson Correlation between Age, Years in Service and Barriers Encountered By Nurses for Execution of Nursing Process

	1	2	3	4	5	6	7
1. Age	-						
2. Years in Service	.455**	-					
3. Barriers related to nursing process	.102	-.001	-				
4. Barriers related to nurses' perception and experience	-.021	-.113	.743**	-			
5. Barriers related to work	.031	-.038	.420**	.431**	-		
6. Barriers related to resource	.049	-.013	.665**	.782**	.515**	-	
7. Barriers related to adminis	.023	-.084	.636**	.793**	.484**	.766**	-

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Correlational analyses between ages, years in service and nurses reported facilitators for execution of nursing process also carried out. As shown in table 7, age was not shown any significant relation to any of the perceived facilitators for nursing process, while years in service had a significant relation to both using books as reference source ($r=.196$, $p<0.05$) and has enough time for performing the phase ($r=.188$, $p<0.05$). All other reported facilitators of nursing process have shown very significant correlations among each other at $p<0.01$. Table 7.

Table 7: Pearson Correlation between Age, Years in Service and Nurses Reported Facilitators for Execution of the Nursing Process

	1	2	3	4	5	6	7	8	9	10	11
1. Age	-										
2. Years in Service	.455*	-									
3. Finds it easy to communicate	.045	.060	-								
4. Used books as reference source	.048	.196*	.490**	-							
5. Had enough time for performing the phase	.087	.188*	.533**	.629**	-						
6. Had brochures directed and adequate to the service the unit	.092	.116	.337**	.492**	.730**	-					
7. Received theoretical-practical training in the hospital	.074	.142	.723**	.504**	.488**	.450**	-				
8. Had theoretical knowledge and practical experience	.128	.140	.598**	.615**	.601**	.538**	.659*	-			
9. Learned and executed the phase during graduation	.091	.110	.732**	.550**	.496**	.429**	.771*	.660*	-		
10. Performed the previous phases of the Nursing Process	.076	.156	.741**	.600**	.527**	.410**	.796*	.557*	.735*	-	
11. It is the quickest and most objective phase of the process	.010	.147	.665**	.632**	.680**	.432**	.678*	.648*	.620*	.732**	-

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Discussion

Previous experiences and practices of the nurses regarding nursing process:

The majority of nurses in this study agreed that they had good knowledge of the nursing process (NP) from attended colleges as well as from seminars and workshops. In addition, they agreed on their confidence in ability to apply nursing process as well as willingness to apply it. These results are in line with Dousouri (2010) who notes that though there were various categories of nurses with regard to age, experience, rank and educational backgrounds, they had a generally very good knowledge of the nursing process. He add that all respondents view the nursing process as an essential tool for rendering comprehensive and quality nursing care to patients. Moreover, Queiroz et al. (2012) notice that nurses have theoretical knowledge on the meaning of the steps nursing diagnosis and nursing process and they are competent to carry them out successfully. Florance and Adenike (2013) report that the more nurses are knowledgeable, the more their use of nursing process. However, these results are inconsistent with other studies; Mamseri (2012) reports that, despite the majority of respondents (n=95; 81%) received training in nursing process, (43%) of them were able to implement the nursing process. The same findings reported in previous study (Ojo, & Irinoye, 2004). Momoh and Chukwu (2010); Silva et al (2011) find that majority of nurses have lack of knowledge about nursing process and possess no skill to write care plan.

Perceived advantages of using nursing process:

Among participants, 96% perceived nursing process as a mean of unifying nursing practice. This result was in agreement with previous studies; and Wadenste (2008) document that the majority of nurses believe that standardized care plans increase their ability to provide the same high-quality basic care for all patients. They also think that a common standardized care plan across several professions will improve conditions for provision of high-quality care. The authors further report that majority of nurses feel that quality standards are a prerequisite of maintaining standardized care plans of high quality. Momoh and Chukwu (2010) note that respondents agreed that there is a strong relationship between nursing process and patient' care. Granero-Molina et al. (2012) contend that nursing process perceived as a prerequisite to combine criteria and language and to facilitate the autonomous role of nursing.

Ninety-five percent of nurses in this study agreed that a main advantage of nursing process is that it provides an opportunity for ongoing learning. This result was going in line with studies of Axelsson et al. (2006) and Mamseri (2012) who find that nursing diagnoses perceived to increase nurses' reflective thinking leading to a continuous development of professional knowledge. Gomes and Oliveira (2008) conclude that nurses experience autonomy when they comply with patients' care goals, using knowledge and abilities in the context of understanding and contributing to the care plan, evaluating their needs and conditions, expressing concerns and priorities, coordinating the multidisciplinary team's resources. Queiroz et al. (2012) add that nursing process uses to assist the patient in a specific and qualified way, meeting the different needs therefore it promotes a better quality of care and provides the nurse with a greater autonomy.

Majority of nurses in this study (95%) agreed also that nursing process allows review and evaluation of nursing interventions. This result supported by the study of Mamseri (2012) that finds the majority of respondents (82%) agree that following the steps of the nursing process will facilitate evaluation of the patient's progress. The result of the positive acceptance tally with the view of other previous research which opined that nursing process helps to individualized care, ensuring that patients receives adequate and sound care (Nwagwu, 2003). Queiroz et al. (2012), consistently, report that nursing process directs the nursing activities in a better way, besides optimizing the time spent on activities, promotes a better quality of care; and provides the nurse with a greater autonomy. In line with present finding, high agreement (95%) was also found concerning effect of nursing process on improving continuity of care given to the patient/client. That was in concordance with the findings of Axelsson et al. (2006); Nyatichi (2012), show that registered nurses perceive that nursing diagnoses clarify the patient's individual needs and thereby enable them to decide on more specific nursing interventions. In addition, Mamseri (2012) points out that more than half of the respondents indicated that ensuring communication between all role players, ensuring continuity of care, and keeping track of patients' progress form part of the purpose of the nursing process.

Moreover, based on the results of this study, 93% of the study group agreed that nursing process helps nurses to appreciate the reasons for nursing actions. Study by a researcher (Popoola, 2002), give support to results of the current study. In his work he point out to the view that nursing process helps in proper documentation of the patients' history through data collection and this a long way to help drug rational, contraindication in therapy as well as the uses of non-pharmacological management.

Difficulties found by nurses regarding phases of the nursing process:

Lima et al. (2006) note that in practice; however, not all steps of the NP are implemented systematically. Several studies reveal difficulties in establishing and using the nursing process within institutions during the last years. Nurses in current study identified data collection as the most difficult phase followed by prescription phase, diagnosis, evaluation and lastly planning phase. Similar results also shown in a study carried out by Lima et al. (2006), in which the research subjects indicated difficulties in developing the nursing process at all stages, and the need for changes to speed up the work process and optimize the quality of actions in care and education. Consistently, Takahashi et al. (2008) report about difficulties faced by nurses in order to perform the components of each phase of the nursing process. They find that interview was described by majority as most difficult component in data collection, diagnostic category was the most difficult in diagnosis phase and determining the expected results and intervention proposal perceived as the difficult component in the planning phase. Mamseri (2012) notices that 30 (48%) of the 62 respondents feel that nursing diagnoses is the most difficult activity to implement, assessment is indicated by 19 (31%), and planning by 13 (21%), no respondents identified evaluation as the most difficult activity of the nursing process.

Moraes Lopes et al. (2010) report that the low rate of history data collection may have been a barrier to the identification of the nursing diagnoses. These facts could also explain why only 48.5% of the medical records contained nursing diagnoses. There have been systematic failures in the linkage and documentation of nursing diagnoses and interventions. Problems identified in the nursing diagnosis process, involving recording the history and implementing nursing prescriptions. The evolution of expected results, in particular, is not adequately recorded (Repetto and Souza, 2005). The difficulties faced when performing the physical exam also shown in another study (Rasmor & Brown 2003). Kluwer (2008) notes that some nurses have difficulty in writing nursing diagnoses because of the complexity of terminology from the North American Nursing Association (NANDA). The same results reported by several studies (Pokorski, et al. 2009; Repetto & Souza, 2005). A survey on the attitudes of nurses toward the nursing record revealed that they do not document nursing outcomes as much as they think they do. The main reasons for this discrepancy were insufficient time for recording and lack of knowledge about why, how, and what to evaluate (Kim and Park, 2005). Another study, done by Gonçalves et al. (2001), considers performance of care planning as the most difficult component in nursing process.

Barriers encountered by nurses in execution of the nursing process:

Nursing process implementation affected by various barriers. The current study identified barriers related to nursing process, of which some were related to nurses' perception and experience, work, resources, and others related to administration. In this study, 68.2% of nurses agreed that barriers related to nursing process were related to lack of time to implement nursing process, evolution on a daily basis, difficulty with defining diagnosis characteristics, and nursing process being time consuming. These results were in line with previous studies (Brown et al., 2009; Dominguez-Bellido et al., 2012; Jooste et al., 2010; McKenna et al. 2004). Toogi et al. (2010) emphasizes that executive barriers perceived as the most challenging from viewpoint of majority of their study group. Welsh (2002), further shows that nursing process faced much criticism among many nurses whom perceived it as too time consuming. Welsh also identifies nurses opinions of process as it involves a series of stages which include writing down copious notes by hand to a great deal of documentation which nurses feel they have no time for. Dominguez-Bellido et al. (2012); Mamseri (2012) further report that most of nurses mentioned lack of sufficient time for implementation of the nursing process as most important barrier, which is again in accordance with the results of the present study.

Study results regarding barriers associated with nurses' perceptions and experiences revealed that, (60.1%) of the study group reported: dissatisfaction with NP content, inability to individualize patient care, staff knowledge of the nursing process is inadequate, staff had no experience in nursing process, lack of interest in its use in patients care, not being able to follow patients, weakness in care management, a nurse cannot see any purpose for writing the care plan and lack of cooperation among nurses. Several factors therefore could interfere with the efficient implementation of the nursing process. These findings supported by previous studies (Franco & Carvalho, 2005; Repetto & Souza, 2005). Current results concerning impact of lack of knowledge is supported by many other researches (Cruz & Almeida, 2010; Fard et al., 2012; Mamseri, 2012); Takahashi et al. (2008) contend that lack of knowledge to perform the process is the main reason leading these nursing professionals to avoid executing it in their day-to-day routines. The study of Hasson and Arnetz (2009) further shows that correct education of application of the nursing process helps in developing nursing science and increasing nurses' participation on promoting the quality of the care for the

patient. In the study of Queiroz et al. (2012), most nurses indicate lack of awareness about the importance of nursing process steps, lack of training of the nurses concerned, and lack of time to perform the process. The study of Mamseri (2012) shows that sixty-three (63%) of the respondents agree that in actual practice, implementation of the nursing process is hindered by the lack of knowledge and practical skills of nursing staff. On the other hand, Brown et al. (2009) in their study discovered that lack of nursing autonomy is a top barrier to the use of evidenced base practice while knowledge factor is a facilitator. Moreover, Florance and Adenike (2013) point out that professional factor ranking the third highest predictive value in the use of nursing process, which means the professional factors, are negligible. It is expected that ordinarily the professional influence should outweigh other variables since the factors that make up a profession include education, with extensive knowledge and skills, which will distinguish nursing from other profession code of ethics, research, and autonomy amongst other requirements.

Depending on the findings of Brandalize et al. (2005), the lack of previous experience with regard to the processes can cause resistance to its implementation. One may think that the process is complex, demands a lot of time, and, therefore, it is not feasible in daily practice that in line with the results of the current study. Patricia et al. (2011) report that the majority of nurses are unable to complete the nursing process for all patients. A cognitive pathway reveals the extent interruptions, fragmented work processes, and communication barriers disrupt the nursing process. According to Jooste et al. (2010), nurses do not see the need for the nursing process and some participants doubt the usefulness of the nursing process; claiming that they knew what to do concerning nursing care. The findings of Akbari and Shamsi (2011) indicate that most important individual barriers from the perspective of nurses were lack of sufficient information about concept of the nursing process (79.4%) and lack of belief in doing the patient care according to the nursing process (74.6%) and inadequate learning about the nursing process in intensive care units (71.4%). In addition, Olaogun et al. (2011) state that nurses prefer the use of medical model of care than embracing the care model exclusive to professional nursing that other health professionals, patients and their families misunderstand. Momoh and Chukwu (2010) show the response on whether negative attitude of nurses affects the use of nursing process; 84 % of the respondents are found to indicate that negative attitude of nurses affects the use of nursing process/care plan.

Based on results of present study, 81.1% of nurses reported barriers related to work as the highest perceived barriers for their execution of the nursing process. This result was compatible with other studies. Among the difficulties reported by professionals in the implementation of nursing process, Queiroz et al. (2012) show that there was an overload with bureaucratic activities, which hinder their professional practice. Nurses, however, were engaged in its implementation, willing to overcome the difficulties by trying to manage time and accomplish their tasks with a high-quality standard. Reppetto and Souza (2005) emphasize that operational difficulties involved in the systematization of nursing care in practice, excessive number of tasks assigned to the nursing team, nursing practice is also frequently link to the performance of bureaucratic and technical activities, to the detriment of the nursing process. Paganin et al. (2008) explain that it could be associated with work overload, and nurses' involvement in administrative tasks.

Regarding resources related barriers, this study revealed that 67.6% of nurses agreed upon several resources barriers, which included inadequate staff in the unit, lack of specified nursing care document and education budget, insufficient equipment and absence of supplies and materials. These results were in line with the previous studies. According to findings of Jooste et al. (2010), nurses reportedly experiencing a shortage of staff as being an important reason explaining why nursing process is not utilized. In the study of Mamseri, (2012), respondents further indicate that lack of staff hinders the implementation of the nursing process in the units. These findings supported by Queiroz et al. (2012) ; Habermann and Uys (2005) who find that some of the difficulties experienced in implementing individualized patient care related to unrealistic staff to patient ratios. Momoh and Chukwu (2010) find that shortage of staff jeopardizes the use of nursing process. According to Nancy (2006) in his report, shortage of staff is the most factor that affect the use of nursing care plan, this is so because there are many works to contend with, many nurses regardless of his or her knowledge do not have enough time to do nursing care plan. Mamseri, (2012) explain that high patient numbers prevent nurses from formulating nursing diagnoses. Fernández et al. (2011) note that nurses express a lack of time and resources to dedicate to their own education, which use in theoretical and administrative activities distanced from patient care, mainly in medical documentation management. That is further in line with other studies (Rezende & Gaidzinski, 2008; Granero-Molina et al., 2012). In addition, Afoi, et al. (2012) conclude that nursing process partially implemented by nurse clinicians in Kaduna State General Hospitals because of staff shortage, lack of exposure to the use of nursing process, inadequate equipment and lack of interest by nurses. While Dominguez-Bellido et al. (2012) find the most significant identified barriers for nursing process

implementation are not having a computer tool to work the plans of care, the poor training, the lack of time, the excessive care burdens and the demotivation of the professionals.

On the other hand, 62.8% of nurses in present study reported administrative barriers as obstacles for executing the nursing process. These results are in agreement with previous researches. Akbari and Shamsi (2011) show that the most important management barriers were lack of enough time for doing the nursing process due to excessive number of the patients (84.1%), lack of authorities' support for implementation of the nursing process (76.2%) and submitting non-nursing duties to the nurses (76.2%). A review of the nursing process systematization that carried out by Hermida and Araújo (2006) indicate that knowledge of the institutional structure; its demands and facilities are basic requirements to begin this challenge. Moreover, Jooste et al. (2010) in their study explained that management do not demonstrate support for the utilization of the nursing process. Pokorski et al. (2009) claim that institutional variables can exert more control over the use of the nursing process than the personal characteristics of individual nurses. Lee (2005) further states that many health institutions faces the challenges of helping professional nursing staff refine their understanding of nursing diagnoses and charting skills, to identify patient problems and propose appropriate care plans. On the contrary, Florance and Adenike (2013); Olaogun, et al. (2011) notice that institutional factor does not pose a barrier to the use of nursing process, and that hospital management make nursing process booklets available for the use of nurses in caring for their patients.

Facilitators for the nursing process execution from nurses view:

Nurses in this study appraised three facilitators for the execution of nursing process with high agreement, these are; having theoretical knowledge and practical experience (97.3%); learning and executing it during undergraduate study (93.9%) ; and receiving theoretical-practical training in the hospital (93.3%). These results are in line with the study of Takahashi, et al. (2008) who show easy aspects as reported by the nurses and its contribution to the execution of each phase of the nursing process, among them are: "Having theoretical knowledge and practical experience" to execute diagnosis (60%), evolution (47.1%), prescription (41.2%) and assistance planning (33.4%). "Having received theoretical-practical training at the hospital", for the execution of the phases: evolution (17.6%), data collection (14.4%), prescription (8.8%) and planning (8.3%). "Having learned and executed the phase during graduation", related to the phases: data collection (17.1%), evolution (11.8%), planning (8.3%) and prescription (5.9%). Furthermore, Dominguez-Bellido et al. (2012) recognize the following facilitators for nursing process implementation; standardization of care plans, incorporation of taxonomies into electronic medical records, specific training in working hours, recognition of the work of nurses by the organization, including nursing objectives in the annual planning and having a responsible for nursing care. On the other hand, Jansson et al. (2010) summarized the main factors that motivate the nurses to implement standardized nursing care plans (SNCPs), those were being easy to understand and follow as well as correspondence to organizational norms. Internal facilitators acted as important educators, who provided reminders to use the SNCP and feedback to the SNCP users. Fernández et al. (2011) further view enablers of the execution as the nurses' involvement, the university-hospital coordination and the support given by institutions.

Correlation between age, years in service and reported barriers & facilitators:

Results of the current study discovered that neither age nor experience related to any of the perceived barriers for execution of nursing process. Further, highly significant correlations shown among all the perceived barriers. On the other hand, concerning perceived facilitators, years in service showed a significant relation to both using books as reference source ($r=0.196$, $p<0.05$) and having enough time for performing the phase ($r=0.188$, $p<0.05$). Age, however, did show significant relation to any of the perceived facilitators for nursing process. All other reported facilitators of nursing process have shown very significant correlations among each other at $p<0.01$. These results are inconsistent with the study of Nyatichi (2012). The author reveals a statistical significant correlation between demographic characteristics and nursing factors that could promote use of the NP as follows: qualification of participants & training on NP ($F=0.228$, $p=0.038$), gender & drive to appear professional ($r=0.234$, $p=0.034$), age & drive to appear professional ($r=0.24$, $p=0.029$) and years of clinical experience & drive to appear professional. In addition, there was also a statistically significant correlation between demographic characteristics and nursing factors hindering use of the NP as follows: gender & lack of experience on using the NP ($r=-0.218$, $p=0.047$) and age & inadequate knowledge on the NP ($r=0.245$, $p=0.026$).

Finally, Florance and Adenike (2013) conclude that the partial correlation coefficients of all the predictor variables (knowledge factor, institutional factor, professional factor and attitude factor) have

positive values with criterion variable (the use of nursing process), knowledge factor has the highest predictive value of 0.350 of the use of nursing process. This means that the more nurses are knowledgeable, the more their use of nursing process. In current study, nurses viewed having theoretical-practical training highly correlated to perceived knowledge and experience which in turn highly related to perception of having enough time for NP performance, and viewing NP as the quickest and most objective phase of the nursing.

Conclusion and Recommendations

This study showed that knowledge factor influenced the use of nursing process more than other variables. One of the biggest problems currently facing the nursing profession is that of implementing the nursing process that can be influenced by the variables such as knowledge, profession, attitude and institution. Institutional factor, including work, resources and management, ranked the highest predictive factor in the use of nursing process. The professional factor needs to be addressed because innovations in health care systems often elicit obstructions or are faced with challenges resulting in lack of motivation in implementation which may be responsible for the negative attitude of nurses which is the least ranked in the use of nursing process.

The center of the easy aspects reported by the nurses for executing the phases of the nursing process is generally associated with the theoretical and practical knowledge needed. Once again, this convergence highlights the importance and value that the nurses assign to adequate and necessary scientific knowledge, as a basis for decision-making when choosing interventions to provide patient care, subsidizing clinical and critical reasoning in nursing. Another aspect to be observed is that, lack of sufficient knowledge about the nursing process becomes a barrier for the nurses' compliance to its execution in healthcare institutions. When performed without the necessary knowledge, it is simply done as the completion of an institutional task, without the collective awareness of how important this process is for the nurses' development as health professionals with social responsibilities.

Current research findings have elucidated the importance of nursing process and the likely obstacles that need to be overcome, we further advocate a wider scope of study in health settings so as to give backing on the need for higher management and health policy maker to redesign their approach toward health personnel especially on staff strength and periodic training program.

This study gives management of health institutions an overview of determinants for possible quality improvements in nursing process execution that needs to be undertaken in clinical practice, since the trend in health care is to provide quality of care. It also orientates the nurses to see the need for applying for in-service training programs through their institutions. Granero-Molina et al. (2012) emphasize that there is a need to put in practice training strategies for faculty and clinical nurses, considering the meaning they attribute to the nursing care process and to other contextual elements that can influence its operation. Introduction of educational programs will enhance nurses' ability to use nursing the process to improve the quality of patient's care.

Factors such as staff shortages and the establishment of an environment conducive to effective and efficient nursing practice, viewed by previous researches as important aspects that affected registered nurses' ability to conduct "good" practice. The researchers therefore recommended that these factors should be investigated and addressed by the Ministry of Health to assist registered nurses in their task of delivering effective nursing care. Finally, motivation of nurses is very important in improving care-planning systems that would further promote consistency in the process.

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