

UNIVERSITY OF CAPE COAST

APPLICATION OF NURSING PROCESS IN PEDIATRIC CARE AND
THE FACTORS ASSOCIATED WITH ITS IMPLEMENTATION AT
KORLE-BU TEACHING HOSPITAL AND PRINCESS MARIE LOUIS
HOSPITAL IN ACCRA

BY

EDITH KORKOR CLARKE

Thesis submitted to the School of Nursing and Midwifery of the College of
Health and Allied Sciences, University of Cape Coast in Partial Fulfillment of
the Requirement for the Award of Master of Nursing Degree

JULY 2017

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented in whole or part for another degree in this University or anywhere.

Candidate's Signature:..... Date:.....

Name:

Supervisor's Declaration

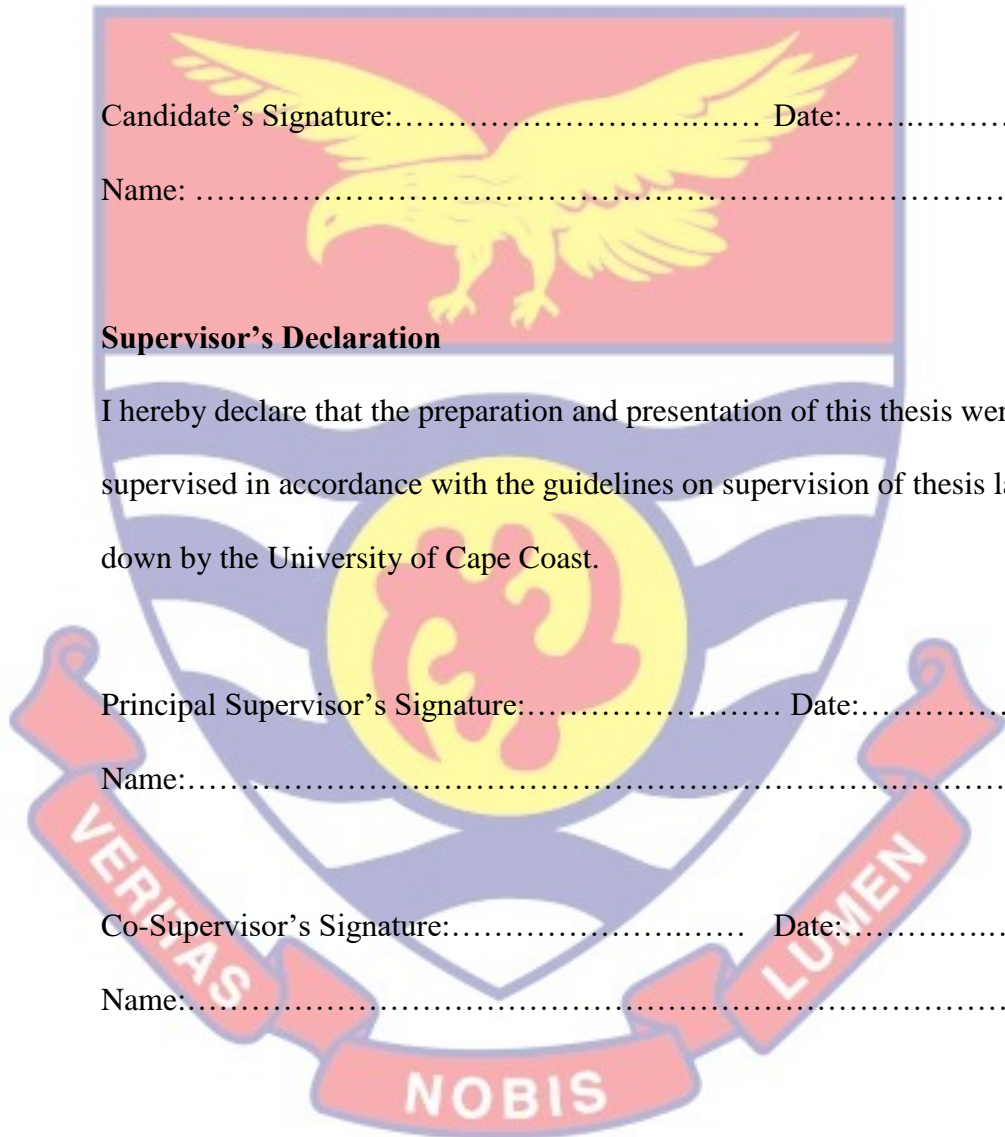
I hereby declare that the preparation and presentation of this thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature:..... Date:.....

Name:.....

Co-Supervisor's Signature:..... Date:.....

Name:.....



ABSTRACT

The nursing process is a scientific method to guide procedures and also ensure quality of nursing care. However, little is known about issues regarding the nursing process. This formed the basis for this exploratory research on the application of the nursing process in pediatric care and the factors associated with its implementation at Korle-Bu Teaching Hospital (KBTH) and Princess Marie Louis (PML) Hospital in Accra. The study, a cross-sectional one, employed both quantitative and qualitative approaches in collecting data through the use of self-administered questionnaires. A sample of 220 professional nurses was selected through a simple random sampling process. The data were analysed with Statistical Package for Social Sciences, (SPSS) version 20 and reported using, tables, pie-charts and box plots. The major findings of the research were that nurses at KBTH and PML Hospitals were well educated about the nursing process, but they attributed their inability to use the nursing process to inadequate practical knowledge, work-overload, management's inability to provide the needed materials and time constraints. In conclusion, the study revealed that though the nurses at KNUTH and PML had great knowledge on nursing procedures, they did not often practicalise their knowledge. It is therefore recommended that health educators and high-ranking members in the health sector should assist nurses in improving on the positive perception of the nursing process.

ACKNOWLEDGEMENTS

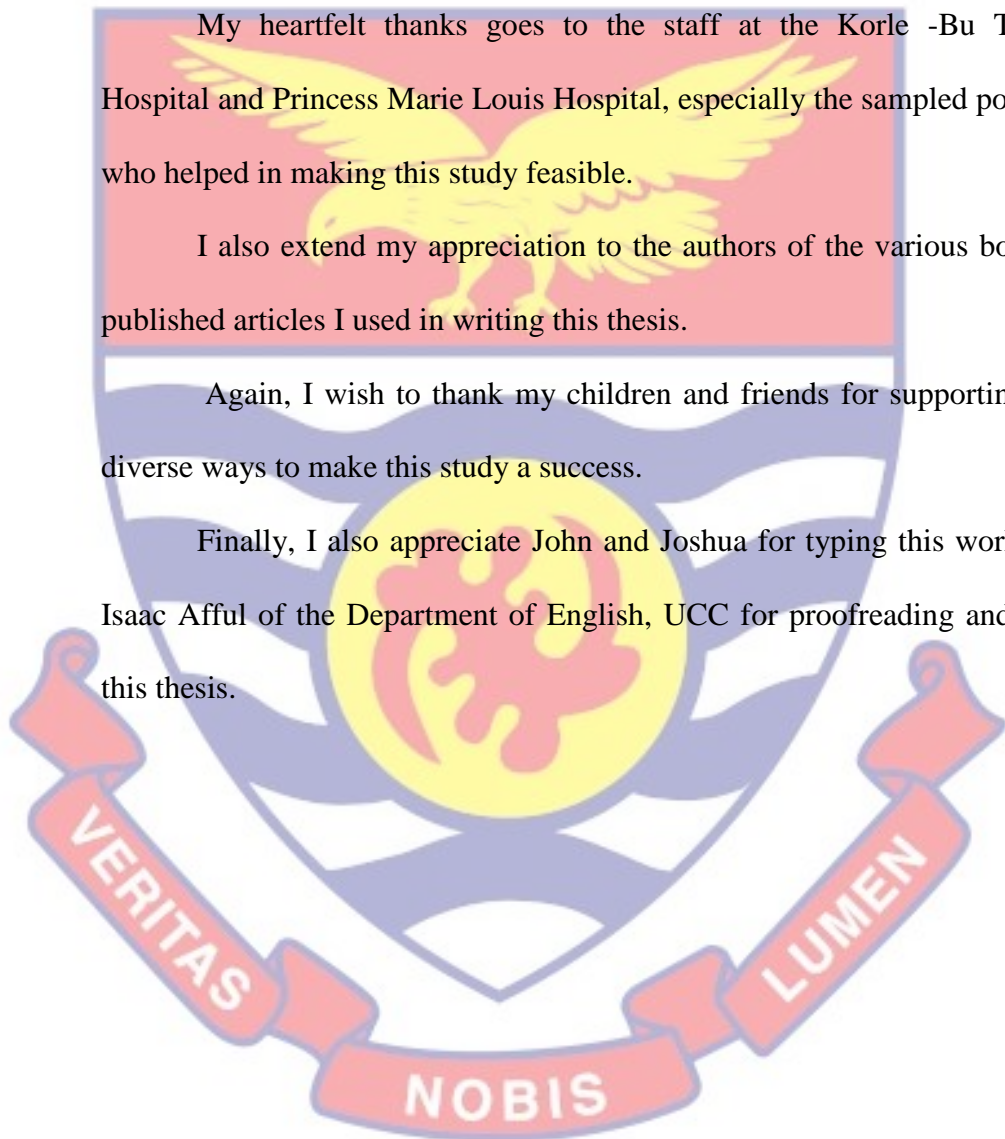
I am grateful to my supervisors, Dr. Samuel Victor Nuvor and Dr. Jerry Ninnoni, whose guidance, encouragement, cordial relation and excellent supervision made this work possible. May the Almighty God richly bless them.

My heartfelt thanks goes to the staff at the Korle -Bu Teaching Hospital and Princess Marie Louis Hospital, especially the sampled population who helped in making this study feasible.

I also extend my appreciation to the authors of the various books and published articles I used in writing this thesis.

Again, I wish to thank my children and friends for supporting me in diverse ways to make this study a success.

Finally, I also appreciate John and Joshua for typing this work and to Isaac Afful of the Department of English, UCC for proofreading and editing this thesis.



DEDICATION

This work is dedicated to my children Rosemary, John and Joshua Clarke.



TABLE OF CONTENTS

	Pages
DECLARATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENTS	iv
DEDICATION	v
LIST OF TABLES	x
LIST OF FIGURES	xii
CHAPTER ONE: INTRODUCTION	1
Background to the Study	1
Statement of the Problem	7
Purpose of the Study	8
Objectives of the Study	8
Specific Objectives	8
Research Questions	9
Significance of the Study	9
Delimitation of the Study	10
Limitations of the Study	10
CHAPTER TWO: REVIEW OF RELATED LITERATURE	11
Introduction	11
Theoretical Framework	11

The Nursing Process Theory by Ida Jean Orlando	11
The Concept of Nursing	13
Patient in Nursing Care	14
Environment in Nursing Care Practice	15
Health of Patient in Nursing Care	16
The Role of the Nurse	16
The Nursing Process	18
Knowledge Level of the Professional Nurse on the Nursing Process	19
Components of the Nursing Process	21
Nursing care plans	25
Attitude of Nurses towards Nursing Process	28
Willingness and Acceptability in Applying the Nursing Process	29
The Barriers /Challenges in Implementing the Nursing Process	30
The Challenges related to Management System	31
Challenges about the Nurses' Attitudes toward the Nursing Process	32
Challenges Related to Determination of Nursing Diagnosis	33
Challenges Related to Recording Steps of the Nursing Process	33
View on the Use of the Nursing Care Plan and Challenges	34
The Way Forward	35
Strategies to improve the use of the Nursing Process	36

CHAPTER THREE: METHODOLOGY	37
The Research Design	37
Study Area	37
Study Population	39
Sample Size Determination	40
Sampling Techniques	41
Data Collection Procedure	42
Data Processing and Analysis	43
Ethical Consideration	44
Validity and Reliability	44
CHAPTER FOUR: RESULTS AND DISCUSSION	45
Introduction	45
Socio-demographic data of respondents	45
DISCUSSION OF MAJOR FINDINGS	80
Socio-demographic data of respondents	80
What is the Level of Knowledge of the Nurses on the Nursing Process?	81
What Aspects of the Nursing Process steps do Nurses Base their Care on, the Willingness and Acceptability to Use it?	86
What are the attitudes of nurses towards the application of the nursing process in the care of patients?	90
What are the Factors that Hinder the Application of the Nursing Process in Pediatric Care?	91

What are the best strategies to improve the use of the nursing process in care
of patient? 94

CHAPTER FIVE: SUMMARY, CONCLUSION AND
RECOMMENDATION 96

Introduction 96

Summary of Key Findings 96

Implications of the Study to Nursing Care 100

CONCLUSION 100

Recommendations 102

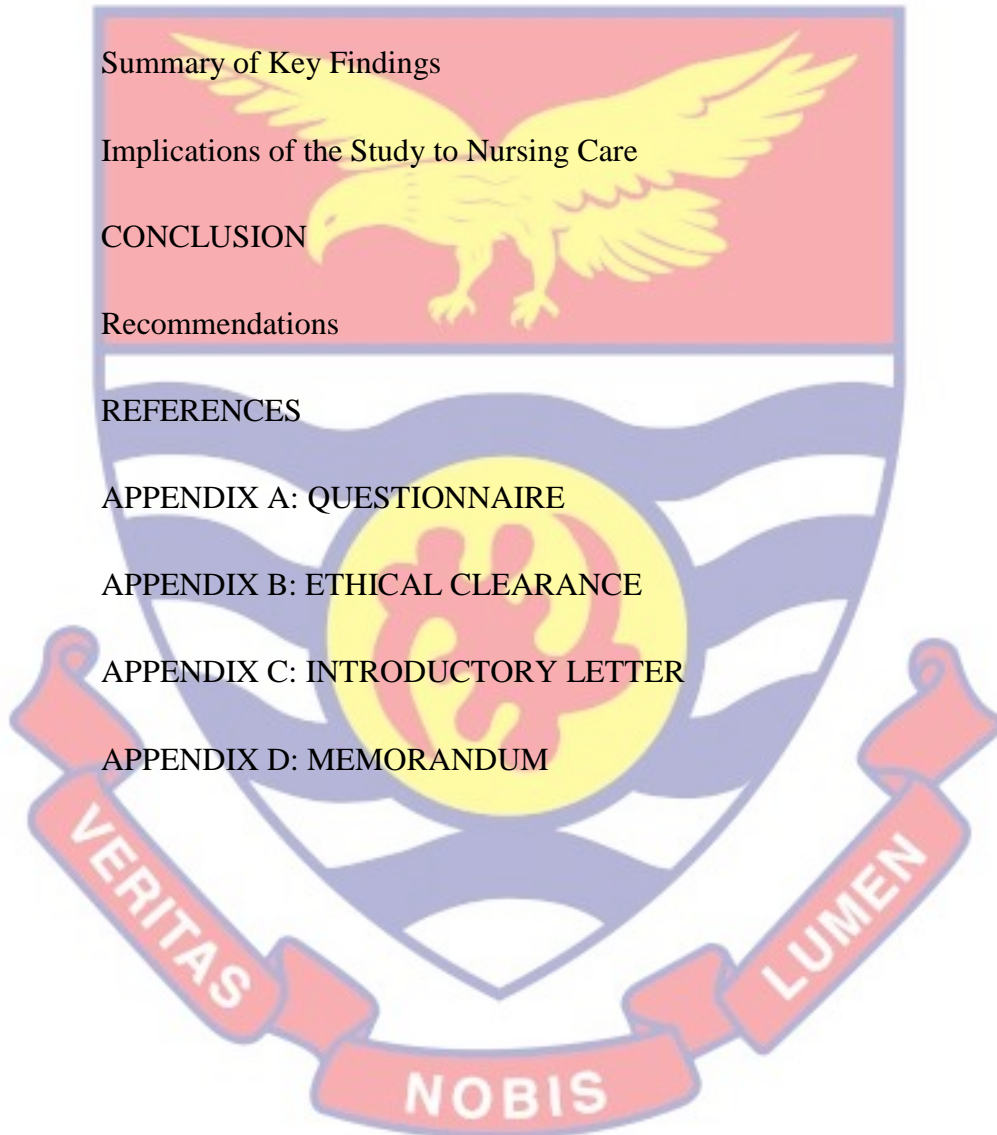
REFERENCES 104

APPENDIX A: QUESTIONNAIRE 117

APPENDIX B: ETHICAL CLEARANCE 127

APPENDIX C: INTRODUCTORY LETTER 128

APPENDIX D: MEMORANDUM 130



LIST OF TABLES

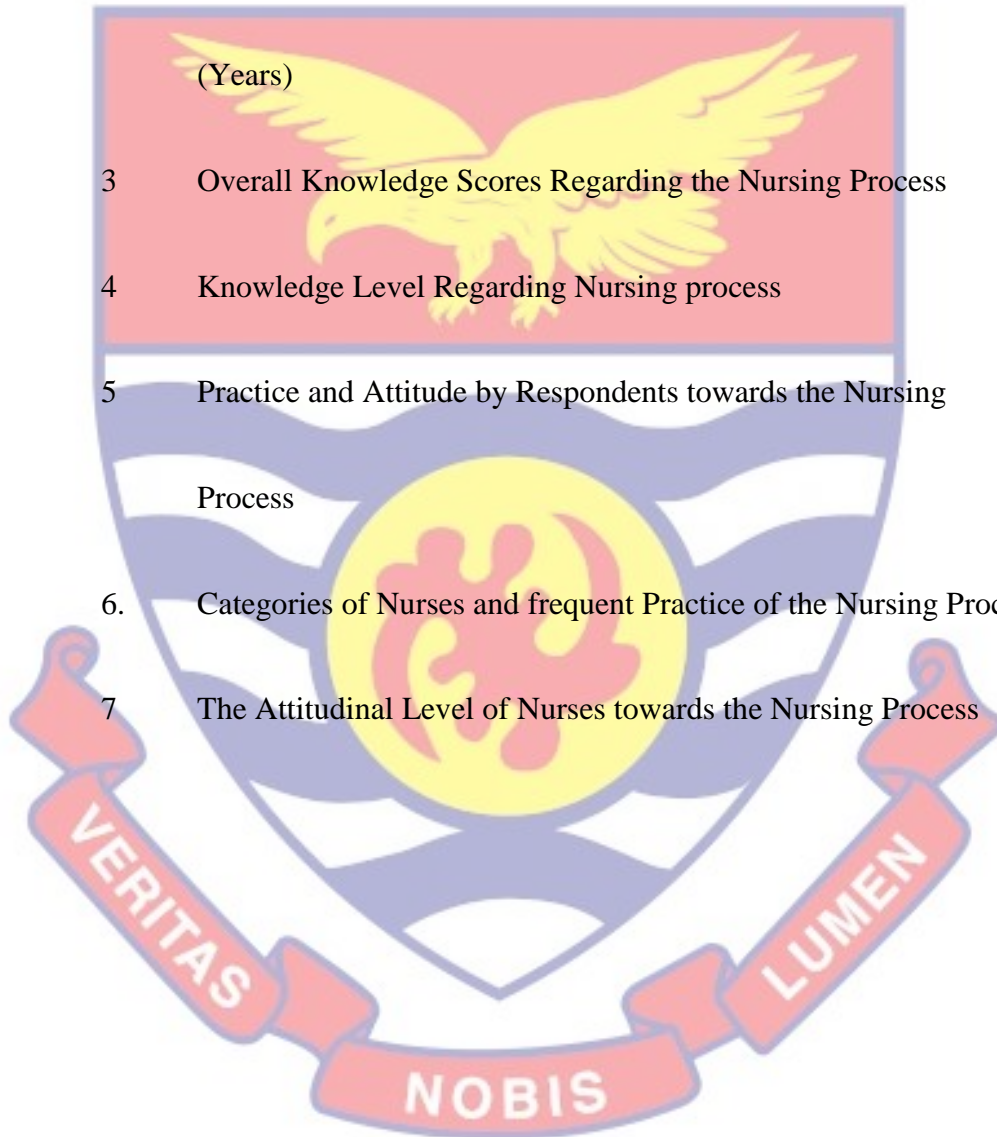
Table	Pages
1 Demographic Data of Respondents	47
2 Knowledge Level on the Use of the Nursing Process/ Care Plan at the Pediatric unit	51
3 Knowledge Level on Nursing Process among Male and Female Nurses	55
4 Professional Qualification and Knowledge Level of Nursing Process	56
5 Ranking of Professional Nurses and Knowledge Level of Nursing Process	57
6 Categories of respondent's knowledge level	58
7 Type of Professional Nurses and Category of Knowledge Level	59
8 Gender and Category of Knowledge Level	59
9 Professional Qualification and Category of Knowledge Level	60
10 Relationship between Hospitals and the Practice of Nursing Process	61
11 Professional Qualification and the Practice of the Nursing Process	63
12 Categories of Nurses and Practice of the nursing process.	64
13 Acceptability and Willingness to Practice the Nursing Process	66
14 Effect of Professional Qualification on attitude towards the use of nursing process	69
15 Effect of Rank on Attitude towards Acceptability and Willingness of Nursing Process	70

16	Relationship between Knowledge and Attitude Scores	71
17	Application of the Nursing Process and Patient Recovery	72
18	Perceived Challenges to Effective Utilization of the Nursing Process in the Pediatric Unit	74
19	Relationship between Perceived Challenges and Application of the Nursing Process	76
20	Strategies for promoting the implementation of nursing process	79



LIST OF FIGURES

Figure		Page
1	Circular Nature of the Nursing Process	12
2	Working Experience by Respondents as a Professional Nurse (Years)	48
3	Overall Knowledge Scores Regarding the Nursing Process	53
4	Knowledge Level Regarding Nursing process	54
5	Practice and Attitude by Respondents towards the Nursing Process	61
6.	Categories of Nurses and frequent Practice of the Nursing Process	64
7	The Attitudinal Level of Nurses towards the Nursing Process	68



CHAPTER ONE

INTRODUCTION

Background to the Study

Over the years, patients have been managed and cared for, based on the disease condition they encounter, with little or no regard for their psychological and social interplay that may result in physical illnesses and disabilities (Afolayan, Donald, Baldwin, Onasoga & Adeyanju, 2013).. The Nursing practice is now based on scientific principles found in a process called the nursing process (Fernandez-sola et al., 2012). Over the years, nursing practice have been an art rather than a science. After the Crimean war, Florence Nightingale changed the face of nursing and since then, nursing practice had evolved to be both an art and science (Gulanick & Myer, 2007).

The nursing process, helps in bringing the art and science, which has proven to be a valuable tool that is transforming nursing practice as well as patient outcome globally (Zewdu & Mersha, 2015). This development, has led to the improvement in nursing educational curricular which brought about innovations in nursing care delivery (Fernandez-sola et al., 2012). Based on this, nurses must have great scientific knowledge in every task to be done, which is the only way that the ‘trained nurse’ becomes superior to the non-qualified individuals rendering nursing services at whatever form or stage of healthcare delivery (Afolayan et al., 2013).

The nursing process is about information, from the patient to the nurse and the vice versa. Also, adequate knowledge of the nursing process by the nurses is critical to the implementation and understanding of what is to be done for the health consumers (Lucky & Salami, 2013; Afolayan et al., 2012).

These have significant relationship with the outcome of the patient, which enhances therapeutic interaction between the patient and nurse. The nursing process is also an interactive and problem-solving process, and uses a critical thinking and evidence-based method (Beck, 2011; Altamier, 2010; Emeh, 2007) that direct nurses in effectively caring for patients. It deals with systematic and individualised way to achieve outcome of nursing care. The nursing process is a widely accepted method and had been suggested as a scientific method to guide procedures and also ensure quality nursing care. More recently, the nursing process had been defined as a deliberate activity, and a systematic and dynamic way to deliver nursing care, operating through five interrelated steps: assessment, diagnosis, planning, implementation and evaluation (Fernandez-sola et al., 2012; & Pokorski, Moraes, Chiarelli, Costanzi & Rabelo, 2009; Christensen & Kenny, 2002).

Nursing process is used to help nurses make nursing care plan, carry them out and improve patient outcome (Quan, 2007). It is again, the organizing framework for the nursing activities used in the management of client situations that are carried out independently by the nurse (Gulanick & Myer, 2007). According to the current American and Canadian standards, nursing practice demands efficient use of the nursing process and professional participation in activities that contributes to the permanent development of knowledge about this nursing process (Pokorski et al., 2009). The nursing care plan is widely accepted and used by the International Council of Nurses (ICN.). It serves as a guide for nursing practice and as a tool to assist nurses and institutions in meeting the council requirements. They are to be used in clinical practice, teaching/education, quality improvement and research

(Gulanick & Myer, 2007). Pokorski et al. (2009) and Barthlomew (2010) claim that the nursing process should be established in care practice at all health care institutions, hospitals as well as in the community as a whole.

According to Carpenito (2000), the nursing care plan/process is a mandatory requirement in the accreditation of nursing programmes in nursing education and taught in nursing schools. Doenges, Moorhouse and Geissler-Murr (2005) stated that the nursing process is included in nursing curriculum and is accepted as part of the legal definition of nursing in the nurse practice act of most states or nursing schools. It is also an academic exercise to be transferred into clinical useful products and again assists students in transferring their theoretical knowledge to clinical practice. Gulanick and Myer (2007) claim that the use of the care plan is beneficial at the bedside and is to be used on the clinical units to write plan of care for a particular patient or serve as a guide in taking care of a patient population in general.

Dahm and Wadensten (2011) found that nurses perceived nursing care plans as increasing their ability to provide quality of care to all patients and reduced the time spent on documentation as well as unnecessary documentation. The nursing care plan again minimizes health care costs by less delay, shortening the length of stay and eliminating task duplication, enhancing the quality of care implementing evidenced based practice (Dahm & Wadensten, 2011). The registered nurse also perceived that care plans clarified the patient's individual needs, thereby enabling them to decide on more specific interventions (Axelsson, Bjorvell, Mattiasson & Renders, 2006). Nursing care plans were found to facilitate communications between colleagues, concerning patient care, and these promoted continuity of care and

saved time. The plans were again perceived to increase the registered nurses' reflective thinking, leading to continuous development of professional knowledge.

Sox (2011) states that the nursing care plan is an essential part of the health care, but it is often misunderstood or regarded as a waste of time.

Alfaro-LeFevre (2010), Akbari and Shamsi (2011) and Keshiajimenez (2012) have observed that nurses lacked relevant cognitive and psychomotor skills to implement care plans. Moreover, the lack of resources has been a major hindrance to nursing process implementation. Amparo (2004), Potter and Perry (2007) have also cited lack of time, limited number of nurses, high patient turn over and lack of equipment and supplies as hindrances to implementation of the nursing process. The lack of resources have been found by many nurses as the most important barrier to implementation of the nursing process (Dominguez-Bellido et al., 2012; Mamseri, 2012; Mahmoud & Bayoumy, 2014).

Despite the challenges facing its implementation, the nursing process provides several benefits to patients and the nursing profession in countries where it has been utilised successfully. The nursing process is a goal oriented method of problem-solving and caring (Ackermann, 2001; Department of Nursing, 2009). When applied in clinical practice, the nursing process offers a basic framework that guides the nurse in the provision of systematic and organised quality nursing care (Habermann & Uys, 2005). The care plan provides legal protection for the nurse as the nurse practices within legally defined standards (Gulanick & Myer, 2007).

According to Doenges, Moorhouse and Geissler-Murr (2005), the nursing care plan/process provide a systematic methodology for nursing practice by unifying, standardising and directing nursing practice. It also defines the nurses' role and enhances communication and collaboration among the health team. The care plans when used minimize health cost by fewer delays, shorten the length of patients stay on admission and eliminate task duplication (Dahn & Wadensten, 2011). It was expected that the better use of the nursing care plan will enhance nurses' access to approved and ensure accurate information in decision making, thus improving the charting process and care quality (Ojo, 2010). The nursing process develops confidence and job satisfaction in nurses, and it promotes professional growth. This brings about improvement in staff assignments, by helping nurse managers, team leaders and nurse instructors in making the most appropriate patient assignment by identifications of difficulty involved in individual patient care plans (Murray & Atkinson, 2000).

The purposes of using nursing process in child health are to assist, to deliver optimum, need-based nursing care to children effectively and intelligently. It also guides nurses to take deliberate steps in identifying client problems and setting realistic goals and intervening with individualised care. It also encourages for identification and utilization of client strength, enhances communication and inter-personal relationship with client, team members and also provides continuity of care by reducing omissions and duplications of action (Datta, 2009).

The nursing process is the most misunderstood nursing theory and yet one of the most effective (Quan, 2007). It also takes time for students and new

nurses to get a firm grip on the nursing process as most students struggle with the theory in school as well as practicing it. However, the nursing process is not really complicated as it seems to nurses and all nursing personnel are to partake in implementing it (Lopes, Higa, Reis, Oliveira & Christóforo, 2010). Sparks and Taylor (2006) were also of the view that the nursing care plan is not being used because some nurses are confused about how to document nursing diagnosis. Care plans were viewed as discouraging thinking, yet some nurses' attitudes were positive as the care plans aided communication and was a guide to practice (Spark & Taylor, 2006).

Examining nurses' view of the nursing care plan and its routine usage in practice, observation and interview, Anichebe (2010) found that nurses were ambivalent towards the records both seeing them as a symbol in the place of nurses in clinical arena. Again, nurses tend to regard care plans as a requirement (Agunwah, 2010). Documentation of the nursing process is important but often a neglected part of clinical documentation (AmmenWerth, Kutscha, Mahler, Eichstadter, & Haux, 2010). It was noted that clear instructions and roles from the hospital management and mandates for the nurses involved at the beginning of the implementation were important factors for use on the wards (Jansson, Bahtsevan, Pilhammar, Anderson & Forberg, 2011). Nurse, managers, administrators and clinicians have a supervisory role to play to ensure the use of the care plan by nurses (Carpenito, 2002). Nursing care plans should be readily available to all health team members involved in the care of the client (Teschannten, Keenan, Yakel & Mandeville, 2002).

Despite the use of the nursing process, its implementation is negligible and therefore the need to find out the factors that impede the use of the nursing process in the care of patient at KBTH and PML.

Statement of the Problem

The focus of the nursing care plan is to ensure quality individualised nursing care, improve nursing documentation and provide legal protection for the nurse (Newfield, Lsridaromost, Hinz, Tilles & Maramba, 2007). A study conducted by Mbunya (2007) revealed that only 2% of nurses in the ward were implementing the nursing care plan. Jansson, Bahtsevani, Pilhammar-Anderson and Forberg (2011) were also of the view that there was lack of evidence about how to successfully implement nursing care plan in various settings in general, and hospital wards in particular. A study conducted by Lee (2005) revealed that, the nursing care plan was scarcely implemented in some hospitals in the United States and United Kingdom. Lee and Chang (2004) also found that the use of the nursing care plan in hospitals was limited based on the assumption that it was time consuming. Even in clinical settings where nursing process is viewed as desirable, inadequate knowledge and incompetence are cited as barriers to its use.

Despite the fact that the use of the nursing process forms part of the curricular of nursing programs, its implementation is negligible. The effect of not applying the nursing process in care and poor documentation of procedures being carried out on children are longer stay on the ward, poor quality of care and high rate of revisiting the hospital after discharge.

Could the non-application of the nursing process in patient care be due to lack of knowledge of the process? What are the factors that hinder the use

of the process? These and other questions are therefore the basis for the study at Korle-Bu Teaching Hospital and Princess Marie Louis Hospitals in Accra.

Purpose of the Study

The purpose of this study was to assess the application of nursing process, in Pediatric care and the factors associated with its implementation in Korle-Bu Teaching Hospital and Princess Marie Louis Hospitals in Accra.

Objectives of the Study

The main aim of this study is to find out the impediments associated with the implementation of nursing process in the Pediatric unit of KBTH and PM L in Accra.

Specific Objectives

1. To assess the knowledge level of practicing nurses on the Nursing process.
2. To identify the willingness and acceptability to use the nursing process.
3. To assess the attitude of nurses towards the use (practice) of the nursing process in pediatric care.
4. To assess factors that affect the effective implementation of the nursing process in the care of the patients by nurses.
5. To explore the best strategies to improve the use of the nursing process in patient care.

Research Questions

1. What is the knowledge level of the nurse on the nursing process?
2. What aspects of the nursing process are nurses willing and accept to use?
3. What are the attitudes of nurses towards the application of the nursing process in the care patients?
4. What are the factors that hinder the application of the nursing process in Pediatric care?
5. What are the best strategies to improve the use of the nursing process in care of patient?

Significance of the Study

The outcome of the study will help improve nursing care in Hospital with pediatric unit of the global standard set through the use of the nursing process in patient care. It will also put the nurses to greater responsibility and enable them maintain high level of professionalism in the child health team.

The outcome of the study will be of great importance to management in that, rendering of quality health care is the ultimate goal of every hospital to all those who will require such services. The study will also help management provide steady supply of stationery and other equipment for effective patient care.

The study will help nurse educators review the curriculum and course content of pediatric nursing and also identify areas that will require review to meet up with current trends in pediatric nursing practice.

The study will assist nurse-researchers appreciate the setbacks militating against effective implementation of the nursing process in pediatric nursing practice in Ghana.

It will also add to the body of knowledge in to nursing department especially the pediatric unit on how to effectively implement nursing process among nurses adhering to the various steps in the nursing process systematically in order to render quality patient care.

Delimitation of the Study

This study was confined to the boundaries of the capital of Accra and only nurses working in the pediatric unit at Korle-Bu Teaching Hospital and Princess Marie Louis Hospitals were used in the study. The scope of the study was also on the application and barriers to the use of the nursing process. Therefore the findings will not be generalized to include other areas and hospitals in the country.

Limitations of the Study

1. The study should have covered all hospitals in the capital region of Accra and the nation as a whole.
2. The sample size used will not enable researcher to generalize the results of the findings
3. Some nurses were not ready to accept and fill the questionnaires until they were persuaded by the researcher to fill them, and there was limited finance for adequate computer search, type-setting and photocopying needed materials for the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Introduction

This chapter reviews related literature of the research topic. The areas looked at are the theoretical framework, knowledge base of the professional nurse on the nursing process, giving nursing care based on the nursing process and barriers that hinder the use of the nursing process on the ward.

Theoretical Framework

The theoretical Framework for this study is based on Ida Jean Orlando's Nursing Process Theory (1990). Orlando's theory uses the term need while discussing about individuals finding themselves in the need of nursing care in a situation. Orlando's theory has been tested in various health care settings and the results support its implementation to practice in various nursing fields (Schmieding, 2006).

The Nursing Process Theory by Ida Jean Orlando

According to Parker and Smith (2010) Orlando's nursing process focuses on improving patient's behavior by actions that are based on a patient's needs found through effective interaction with the patient. According to Orlando it is not enough to meet the patient's needs but first the nurse has to find out what those needs are. Whenever interventions are been carried out before identifying if those interventions give benefits for the patient, then nursing is not highly professional. Nursing activities are planned for the patient's own good, but what the patient himself thinks that he needs can be entirely opposite from what a nurse assumes (Orlando, 1990).

When a nurse initiates care for a patient, an action process begins. This process where the nurse acts in a nurse-patient contact is called the nursing process; both the nurse and the patient have their own thoughts, feelings, and opinions from the actual situation. Orlando explains that there are two variable types of action processes in the nursing process: automatic and deliberative ones (Schmieding, 2006). For effective nursing process to be initiated both perceptions of the nurse and patient, need to be available in order for them to act as a reliable base for the nurse's actions. In the process of care the observations from patient behavior, both verbal and nonverbal, help the nurse to assess the level of the patient's distress and the need for help (Schmieding, 2006). From this assessment the nurse carry out interventions to relieve the patient from his/her distress. After those specific actions the nurse observes the patient behavior again to evaluate the outcomes and if distress is still evident, the process begins again. Orlando's nursing process is then describing a continuous reflective cycle with patient's role in his own care is crucial (Schmieding, 2006).



Figure 1: Circular nature of the nursing process

The nursing process is divided into five phases, which are assessment, nursing diagnosis, planning, implementation, and evaluation where there is a recording and documentation of findings at each stage. The nursing process helps nurses function in a professional manner that is, using an established method and body of knowledge. Therefore nurses should use the nursing process throughout their professional career as a means of striving for quality (Parahoo, 2006).

The Concept of Nursing

The concept of nursing involves the context of the nurse-patient relationship, which is mainly a professional and therapeutic relationship (Walsh, 2002). The relationship is collaborative and should always meet the patient's goals of which the nursing responsibility includes the art of being an advocate for the patients. George (2002) explains nursing as involving a nurse and the client, uses action, reaction, and interaction in a health care situation to share information about their perceptions of each other and the situation. This communication enables them to set objectives and choose the methods for meeting the objectives". The objective of the nurse is to help individuals gain health (George, 2002). The nursing domain includes promoting, maintaining, and restoring health and caring for the sick, injured, and dying.

Historically, nursing has been connected with religious orders and the influence is still both positive and negative today (Chitty & Black, 2007). The elementary definition of nursing is that nursing is a practice of science (George, 2002). It was also seen as an evolving profession with a sole perspective on individuals, environment and health (Walsh, 2002). Walsh further enlightens that nursing comprises the application of nursing knowledge

to the promotion, maintenance and restoration of health for the individual and family through stressful events (Walsh, 2002). According to George (2002), the patients' health needs could be viewed as problems, which may be obvious as an apparent condition, or hidden as a concealed one. Hidden problems can be emotional, sociological, and interpersonal in nature and they might be perceived incorrectly. Nursing is the routine of a problem-solving approach in dealing with nursing problems related to the health needs of the people (George, 2002). A nurse should be knowledgeable in order to approach patient's problems successfully. There are four concepts central to nursing. These are the patient, the environment, health, and nursing (Walsh, 2002).

Patient in Nursing Care

Murray and Atkinson (2000) defined the patient as one receiving nursing care. The patient could be a single individual, but also the family or the community could be the center of the nursing care. The concept of the patient shows that the patient being the recipient of nursing care, must always be seen as a person. According to Walsh (2002), the patient has a clear personality apart from being a member of a family and a community, and also constantly relating with their environment. The patient must always be educated of his or her health status, make informed decisions which are well-linked with personal beliefs and values, and should actively take part in the care process (Adejumo & Olaogun, 2009).

The distress of a person is what makes it possible to seek services of another person. The patient places their trust and dependence on the nurse for as long as the services are required. The aim of the nurse is to offer knowledge

and strength so that the patient can function as an independent person (Adejumo & Olaogun, 2009).

Environment in Nursing Care Practice

The environment is said to be the immediate substances that affect a course of development. The environment represents the person's immediate surroundings, the community, or the universe and all that it contains (Meleis, 2007). The concept of the environment means that there is an association to the individual and it is vibrant and influences the health and lifestyle of the individual. Nursing actually deals with the way the patient interacts with the environment in promoting health, avoiding diseases, and delivering care in illness (Chitty & Black, 2007).

The physical environment provides for the well-being of the patient, thus controlling the environment is a major component of nursing care identified by Florence Nightingale (Meleis, 2007). These include areas of the environment which the nurse could control to the gain of the unwell person, condition of houses, ventilation and heating, light, noise variety, bed and bedding, cleanliness, rooms and walls, personal cleanliness, and nutrition (Adejumo & Olaogun, 2009). The health of the patient depends on acquiring serene environment. There is the need to avoid disturbance of patient for the purpose of nursing or medical management. Florence Nightingale further believed that variety in the environment was a vital aspect in patient's recovery (George, 2002). This variety includes changes in colours, flowers and plants, which were found to calm the minds of the patient.

The most significant part of nursing comprises preserving cleanliness and ventilation. Good ventilation can freshen up a room when it is stuffy and

personal cleanliness prevents breakage of the skin. Nutritious and desired food consumed by the patient at the precise time was found to promote health (Murray & Atkinson, 2000). The patient needs to be under the best environmental condition for nature to take its course.

Health of Patient in Nursing Care

According to Keane (2003), Health is a relative state in which one is able to function well physically, mentally, socially, and spiritually in order to express the full range of unique potential in the living environment (Keane, 2003). Health is defined as a dynamic life experience of the human being. This shows continuous adjustment to stressors in the internal and external environment through the optimum use of resources to achieve maximum potential for daily living (George, 2002). Furthermore, health is a functional state, and illness is an interference with that functional state (Adejumo& Olaogun, 2009).

The concept of health is perceived in nursing as a goal to be attained and maintained. The individual's health is measured against a set of standards. Apart from psychological and physiological problems, the nurse is also involved with subjective factors which contribute to the quality of life of the individual (Walsh, 2002). Nursing is also concerned with subjective factors contributing to the quality of life, with the individual realizing their potential. Also, health has other important dimensions like social and psychological attributes (Keane, 2003).

The Role of the Nurse

Historically, nurses have represented the core of the health care delivery system due to their nursing actions. According to Gulanick and Myer

(2007), the American Nurses Association (ANA) have defined nursing as the diagnosis and treatment of actual or potential health problems. Actual problems are problems a patient presents to the hospital and potential problems are those presented by the patient later while in the hospital. The registered nurse, despite their specialty area, sees to the welfare and the health of the patient, by treating and educating patients and the public about various medical conditions. The advice and emotional support are also given to patients' family members. The patients' histories and symptoms are recorded by the nurses and these help them to perform diagnostic tests, analyze results, administer medication, and help patients with follow up and rehabilitation (Gulanick & Myer, 2007).

The nurse requires critical thinking and creative ideas in solving the problems of the patient (Kozier, Erb, Berman & Synder, 2008). Critical thinking in nursing practice is a discipline-specific, reflective reasoning process that guides a nurse in carrying out care. The nursing process/care plan is the organizing framework for the nursing activities that are carried out independently (Carpenito-Moyet, 2009). Nurses' functions are to help individuals, families, and groups to determine and to achieve their physical, mental and social potential (Hinchcliff, Norman & Schober, 2003). These are done in the context of the environment in which they live and work. For the nurse to be successful, planning and discussion with the patient is very important (Carpenito-Moyet, 2009). Again, nurses have the responsibility of caring for sick people. They also care for a large number of patients with complex problems, and meet the care needs of individuals so that the patient

can recover and go home peacefully or even die peacefully (Hinchcliffet al., 2003).

The concept of the nursing process was introduced in the 1960s as the core of nursing practice to help nurses render care in a methodical manner (Doenges, Moorhouse & Geissler-Murr, 2005). The activities of nurses can be dependent, interdependent and independent. The dependent interventions /activities result when nurses carry out physician's plan of care and address the patients' response to those interventions. The independent activities/ interventions are those activities that the nurse carries out on her own accord without the doctor's instructions and supervision (George, 2002).

The Nursing Process

The deliberative nursing process is a term that Orlando (1990) used for a process where there is an ongoing justification of nurse's actions together with the patient. Mainly, the process consists of four steps which include: patient action, nurse reaction, nurse-patient validation and nurse action (Schmieding, 2006). Over time, various authors and scholars have proposed different forms of the nursing process, but the latest is the six-step nursing process as a step provided by the American Nurses Association (ANA) and this process is based on evaluation and recognition, nursing diagnosis, specifying the objectives and expected outcomes, as well as planning, implementation, and evaluation (Huckabay, 2009).

The automatic nursing process describes where the response to the need of help is done according to the perceptions of the nurse, leaving the role of the patient quite passive in his own care (Peterson & Bredow, 2009). These nursing process actions are not necessarily wrong but the deliberative process

which is carried out in co-operation with a patient is more likely to reach positive outcomes. In this process, the nurse checks with the patient's views and feelings in association with patient's behavior suitable and relieving in that certain situation improving the patient health (Peterson & Bredow, 2009). It is obvious that the automatic nursing may present with some unlikely outcomes.

The nursing process has also been defined as an interactive and problem-solving process (Beck, 2011). It deals with systematic and individualised way to achieve outcome of nursing care. The ultimately process has been accepted by the nursing profession as a standard for providing on-going nursing care that is adapted to individual client's needs. According to Alfaro-LeFevre (2010), the scientific nursing process was a systematic and rational method of planning which provided individualised care to patients, families, groups and communities and it was cyclic and dynamic in nature. The process was a widely-accepted method and has been suggested as a scientific method to guide procedures and quality nursing care.

Others including Altamier (2010) defined the Nursing Process as a systematic method which utilizes scientific reasoning, problem solving and critical thinking to direct nurses in caring for patients effectively. Also Emeh (2007) defined the Nursing process as problem solving approach and evidence based method which involves different steps and it is a goal oriented method of caring for patients.

Knowledge Level of the Professional Nurse on the Nursing Process

The knowledge level of the professional nurse looks at the understanding of the various steps in the nursing process and its

characteristics. Florence Nightingale in the mid 1800's proposed that nursing knowledge was based on knowledge of persons and their environment and was different from medical knowledge. It was nearly a century later that nursing theories began to emerge and to be valued by the professional (Berman, Snyder, Kozier & Erb, 2012). Since then, nursing theories and conceptual frameworks have been developed and articulated by academicians, basically to guide clinical practice in nursing. The theories are for the direction and guidance and for structuring professional nursing practice, education and research: for differentiating the focus of nursing from other professions (Berman et al., 2012). The concept of the nursing process was introduced into nursing curricular in the late 1960's in America and Western Europe and became associated with the books written by Yura and Walsh (Habermann & Uys, 2005). This was also emphasised by Barthlomew (2010) that, the advent of nursing process is now central to practice and had been in use for over 30 years in countries like United States of America and Britain.

Kozier, Erb, Berman & Snyder (2008) quoted nurse theorists in defining nursing process as a systematic patient centered method for structuring the delivery of nursing care. The nursing process was modeled as a structured, problem solving approach to nursing practice and its evaluation. It is grounded in a problem-solving cycle, which usually includes, collecting information and assessing the patient, planning the care and defining the relevant objectives for nursing care, implementing actual interventions, and evaluating the care (Habermann & Uys, 2005). This is shown in Figure 1 above, which is categorised into five phases including: assessment, diagnosis, planning, implementation, and evaluation. It is entirely a systematic and

rational method of planning the provision of individualized care for patients, families, groups and communities (Alfaro-LeFevre, 2010). It was entirely a cyclic and dynamic patient centered care approach.

This process originally contained four steps: assessment, planning, implementation, and evaluation. In a later version, the nursing diagnosis was included for complete care delivery. Hence, there is a central and widely-accepted concept, both for nursing practice and documentation. It is also based on the scientific approach of investigation and goal-oriented action. The primary purpose of the model was to relate individualized nursing care to the individual patient rather than generalized care based on routines (Alfaro-LeFevre, 2010).

The nursing care plan is an essential tool in the delivery of modern nursing care. It is a document containing the three nuclear parts of the nursing process model. These included a nursing diagnosis which describes the problem or need, the aim of the nursing care and the intervention that have been planned to achieve the aim. As Alfaro-Le Favre (2010) notes, the purpose of the nursing care plan is to have a reference easily accessible in the clinical setting that describes the patient's needs and wishes for effective planning to care for the patient. It is used to ascertain the continuity of the care among caregivers and is part of the patient's hospital record (Alfaro-LeFevre, 2010).

Components of the Nursing Process

The nursing process has five steps which include: assessment, diagnosis, planning, implementation and evaluation (Alfaro-LeFevre, 2010). The various steps involved are cyclical and help to organize and prioritize

patient care with recording and documentation at each stage as in Figure 1 above.

Assessment (collecting information): This is the first step in the nursing process and involves the systematic collection of patient data (Kluwer, 2008). In this phase, the nurse takes the patient's history in relation to their health problems. Data is collected through interview, observation and physical examination. Information may be collected from patient, family members, other relatives, health records, nurse, physicians and health care professionals (Anderson, 2007). The assessment phase of the nursing process helps nurses to discover the needs of a patient which can then be addressed with proper nursing interventions. Interpretation and evaluation of the data collected is important before drawing any conclusions (Kluwer, 2008). According to Chabeli (2007), the nurse needs to have enough evidence before stating an argument. Based on this, the nurse needs skill to compare different factors and finding out those factors' value for patient. These will lead to finding out patient's actual problem and will demand critical thinking skills. If there is enough trust-worthy evidence, nurses need to be open-minded to adjust path of inquiry rather than following certain routines (Chabeli, 2007).

Physical assessment is an important tool for nurses to use for collecting data since it can help nurses to recognize any abnormality (Baid, 2006). It begins with collecting the health history of the patient. The nurse can interview both the patient and the persons that can have important information, such as, people close to the patient, such as, the parents, a living partner, or people otherwise connected to the patient. Information can also be collected from the patient's previous health records (Baid, 2006).

After coming into contact with the patient, the nurse starts observing the patient and the behavior. Also, vital signs should be taken. All these information collected will help the nurse to determine how the thorough assessment should be. These includes whether the patient's main problem linked only to one, or couple of the body systems.

Diagnosis-(identifying problems and strength): A nursing diagnosis is a clinical judgment based on information obtained (Magnan & Maklebust, 2009). During the diagnosis phase, the nurse needs the data collected in the assessment phase to formulate nursing diagnoses and to make clinical judgments about the patient's response to actual or potential health problems.

According to Kozier et al. (2008), the term *diagnosing* refers to the reasoning process whereas the term diagnosis is a statement or conclusion regarding the nature of a phenomenon. Michalopoulos and Michalopoulos (2006) stated that the nursing diagnosis focuses on an individual's health signs and symptoms and medical diagnosis focuses on the health problem itself.

Forming a correct nursing diagnosis demands critical thinking skills, scientific knowledge, social skills and multi-sided knowledge about the patient and his situation (Gouveia & Crossetti, 2012). However, having diagnostic title alone cannot express the patient's problems, but diagnoses that are specific in their etiology are the base for choosing correct interventions (Müller-Staub, Needham, Lavin & van Achterberg, 2006). According to Paans, Nieweg, van der Schans and Sermeus (2011), the nursing diagnosis itself is not limited to classifications but the conclusions in the diagnostic process made by the nurses need to be documented in a way that is

understandable for their colleagues and other healthcare team members alike. With that, duty classifications are helpful (Paans et al., 2011).

The North American Nursing Diagnosis Association (NANDA) is perhaps the most famous one of the standardized nursing classifications. First, NANDA version was established in USA in the early 80s and currently, the term, *NANDA International* (NANDA-I), is used to reflect expelling movement of nursing diagnosis and NANDA classification is in countries worldwide (NANDA, 2013). Nurses have the ability to make a nursing diagnosis and to recommend actions for dealing with the nursing diagnosis, despite the fact that some actions taken by nurses are interdependent. Problems identified may be physiological, psychological or sociological. There are thirteen domains, divided into 106 classes and 155 nursing diagnoses. The nurse can choose a nursing diagnosis from NANDA, which most closely describes the patient's problem (Michalopoulos & Michalopoulos, 2006).

The problems are categorized as:

1. Potential problems requiring prevention
2. Actual problems being managed
3. Actual problems requiring intervention, or
4. Actual problems requiring further investigation

Planning- A phase of client care, which immediately follows client assessment and diagnosis, but precedes treatment and evaluation, is a projected course of action aimed at strategically addressing a client's presenting problem (Leach, 2008). Planning is a very crucial aspect of the nursing process, as it forms the goals of care. The goals formulated should be

with an idea that they are fully realistic while considering resources, health care team's skills and more importantly, patient's capability and willingness to achieve those goals (Leach, 2008).

Planning is also defined as the process of consciously setting forth a scheme to achieve a desired end or goal (Keane, 2003). It is an ongoing process that involves assessing a situation. In planning, the nurse prioritizes the problems, formulates goals, considers the desired outcomes, selects nursing interventions, and records the nursing interventions. Indeed, the purpose of planning is to ensure that the correct combination of activities and resources are used to produce the desired result (Murray & Atkinson, 2000). Nursing planning is aimed at identifying patient centered goals and how to achieve the desired goals. The planning phase of the nursing process use problem-solving techniques in which strategies are developed to achieve the desired nursing outcomes (Kozier et al., 2008).

Nursing care plans

The nursing care plan is a written reflection of the nursing process. According to Gulanick and Meyers (2007), a nursing care plan records all the information that the nurse collects about a particular patient during assessment. These include nursing diagnoses, achievable goals, plans, interventions and evaluation (Kluwer, 2008). Nursing care plan have three major components which are: nursing diagnoses, expected outcome, and nursing interventions (Kluwer, 2008). An outcome-based plan is developed to improve the outcomes for the patient and make plans to carry out the necessary interventions to achieve those goals.

The planning phase is a vital component in nursing care of patient. The care plan, serves as a road map that guides all members who are involved in patient care (Hoffman, 2008). It is a means of communicating patient care needs among members of the nursing team, doctors and other health professionals, to ensure those needs are met. It is a holistic tool in the sense that it collates information when the patient is admitted, improves the quality of patient care and forms the basis for discharge.

This phase of planning and documenting enables future follow-up of nursing activities, however, nurses have been seen to spend much of their time in planning and documenting. According to a study conducted by Gugerty et al. (2007), nurses routinely spend 15 – 25% of the work day documenting patient care and in some cases considerably more. This time spent on documentation is considered too much, as it keeps the nurses away from the patient.

Nursing care plan, when carefully used, are likely to be holistic in terms of patient care. Implementation of the nursing process through nursing documentation provides a possibility of knowing the patient well. The nurse is given an opportunity to discuss the patient's condition with other members of the health care team (Gugerty et al., 2007). The nursing care plan improves the standards of care by providing meaningful steps to follow. A study conducted by Taylor and Wros (2007) found that nursing care plans can act as a concept map, and that concept mapping supports and facilitates meaningful learning. A study conducted by Lee (2005) regarding information systems, recommended that the objective of the hospital information system should be to improve patient care, integrate quality improvement programmes among departments,

and increase the efficiency of hospital management. It is therefore anticipated that the nursing care plan can foster satisfaction for both the nurse and the patient by improving the quality of care (Lee, 2005).

Implementation (nursing intervention) - This involves carrying out the plans and delegating responsibilities for each step. A nursing intervention is defined as a single nursing action designed to achieve an outcome to a nursing diagnosis, or to a medical action, for which the nurse is accountable (Saba, 2007).

According to Chabeli (2007), certain questions need to be answered before a nurse carries out an intervention. These are whether the intervention helped the patient to reach the goals and the knowledge base for the intervention. Also, the nurse who does these interventions also needs to evaluate the effects of the method chosen for the intervention. There is more positive correlation to patient outcomes if nurses make interventions suitable for their patients (Suhonen, Välimäki & Leino-Kilpi, 2006). If they do routine interventions during their literature review concerning effects of personalized interventions usually may not relate to patient outcome. Chabeli (2007) also points out that whether or not a nurse has good communication with the patient is related to the successfulness of the interventions.

Evaluation- The nursing process is an ongoing process. It involves not only analysing the success or failure of the current goals and interventions, but examining the need for adjustment and changes as well. In the whole nursing process during the assessment a nurse evaluates whether or not enough information has been collected to form nursing diagnosis. The nursing diagnoses are evaluated for their correctness, and then goals and interventions

are evaluated for their chance to be realistic and reachable (Ojo, 2010). If they are not, the plan should be changed. While doing interventions, evaluation is needed to consider if those interventions lead to achieving goals.

Evaluation is important and it is almost impossible to know if the care actually helps to meet the needs of the patient without it. Although intervention would not help patient, the knowledge from evaluating the intervention helps the nurses to develop care (Chabeli, 2007). If all the steps of the nursing process are not systematically implemented it is a risk for the care continuity (Lopes, Higa, Reis, Oliveira & Christóforo, 2010).

A study conducted by Hagos, Alemseged, Balcha, Berhe and Aregay (2014) indicated that knowledge was one of the most determinant factors for application of the nursing process. According to the study, 180 participants (indicating 90% of the respondents) scored below 50 percent on knowledge related questions. Also a study conducted in Mexico by Lima and Kurcgant (2006) showed that there was a problem in the application of the nursing process due to variations in what the nurses were taught at school and what they were applying at hospitals. Furthermore, a study conducted in Brazil by Pokorski et al. (2009) showed that knowledge was one of several factors that interfere in the efficient implementation of the nursing process

Attitude of Nurses towards Nursing Process

According to the findings of the study conducted by Hagos et al. (2014), nurses of the study sites had positive attitude towards the nursing process. One hundred and ninety-nine (99.5%) of the respondents had positive attitudes. A study conducted in US by Maria, Oliveira, Débora, Mariléa,

Myrna and Maria (2003), showed that the mean attitudes of nurses towards the nursing process was 73.57 percent which was good, indicating that attitude was not a determinant for application of the nursing process.

Willingness and Acceptability in Applying the Nursing Process

A study conducted by Hagos et al. (2014) showed that all the 200 respondents participated in their study reported that they do not apply any of the nursing process steps. A research work by Emeh (2007) showed that 64.22 percent of respondents often implement nursing process, 27.52% were not always implementing the nursing process while 8.26 percent never implement it. Also, a study conducted by Pokorski et al. (2009) in the University of Brazil reported that 54.61 percent of the respondents often implement nursing the process, while 45.39 percent of the respondents were not always implementing nursing process. The nurses use some aspect of the nursing process. For instance, an assessment was performed on 98.7 percent of cases; diagnosis was made on 90 percent of cases; and planning was made on 74.8% of cases. In addition, Lee (2005) conducted a study in central Taiwan revealing that nurses generally followed the nursing process and charting sequence to complete care plans.

Furthermore, a study done in Nigeria in showed that the nurses implement the nursing process 40.37 percent, 13.76 percent, 43.12 percent, and 2.75 percent at the level of assessment, level of nursing diagnosis, nursing care plan, and evaluation, respectively (Use a Smart Nursing Process, 2010). Hagos et al. (2014) showed that among the socio-demographic characteristics, educational status has a statically significant relationship with knowledge of

nurses on nursing process that nurses who had a Bachelors degree in Nursing have better knowledgeable than Diploma nurses.

A study by Lee (2005) conducted in Brazil also showed factors such as lack of knowledge of the steps involved in the process and excessive number of tasks assigned to the nursing team can interfere with the efficient implementation of the nursing process. Also, a study done in Nigeria by a Use a Smart Nursing Process for Your Care, (2010), showed that 36 (32.7%) and 34 (29%) responded lack of regular supply and no supply of nursing process material respectively. Other respondents identified the following factors affecting nursing process implementation as shortage of nursing staff 16(14.5%) lack of supervision nurses by head nurse 4 (2.5%), lack of cooperation among nurses 4(2.5%) and low format for writing 1(1.1%). Emeh (2007) equally identified these factors which he called impediments to effective implementation of nursing process. Also in the study carried out by Beck (2006) in United Kingdom showed that there was a limitation in the number of nurses working in the hospital, but there was a regular supply of nursing process material to ensure increase in the level of compliance on the part of nurses

The Barriers /Challenges in Implementing the Nursing Process

Gathering “information, facts, observations, together with experiences to make a nursing diagnosis, requires that the person is engaged in inductive thinking” (Huckabay, 2009). This idea is also found in Orlando’s theory which states that every patient is unique and different patients can signal with same kind of behavior but totally different needs. Orlando’s theory highlights that it is the professional nurse’s responsibility to recognise the patient’s actual need

(Schmieding, 2006). Lopes et al. (2010) were of the view that the nursing diagnoses step is most often the biggest barrier to successfully implement the nursing process in the practice. Implementing the nursing process and forming correct nursing diagnoses is challenging. Normally nursing diagnosis should consist of four parts as label, definition, signs and symptoms, and related factors (Lee, 2005). Many nurses can identify patient problems but the clarity of the problem with ideas formed and needed practice change can be difficult to achieve (Lusardi, 2012).

In the study by Paganin, Moraes, Pokorski and Rabelo (2008) in a university hospital in Brazil, they tried to investigate the main reasons affecting the implementation of specifically nursing diagnosis. The result was that 48 percent of the nurses involved in the research thought that there was lack of practice in implementation of nursing diagnosis. Paganin et al. (2008) considered that using a standardised model for the nursing process that could be implemented in practice would make it easier for implementing also the nursing diagnoses part. Lopes et al. (2010) observed that sometimes nurses view the nursing process only as a documentation activity. Also there was a tendency from nurses to document only nursing interventions not mentioning nursing diagnoses. This can lead to inaccuracy in care given since if the nursing process is not followed in a proper manner, the nursing diagnoses would not guide the interventions (Lopes et al., 2010).

The Challenges related to Management System

The challenges associated with nursing process may relate to the management system. Akbari and Shamsi (2011) Lee (2005) and Lopes et al. (2010) were of the view that managerial system was challenge that hinders the

implementation of the nursing process. Situational factors can also inhibit the implementation of the nursing process-and as the implementation of nursing diagnosis. These include, lack of time, and support from colleagues (Lee, 2005). Personal abilities that may hinder the correct implementation of the nursing process include: lack of preparedness or knowledge about the nursing process (Lopes et al., 2010; Lee, 2005).

Awosiyam (1996) contented that the challenges that nurses face in the modern world are easy to overcome when the nursing process concept was adopted. Again Awosiyam (1996) referring to some studies on barriers to implementation of the nursing process in Ghana, found out that despite the fact that nurses had good theoretical knowledge, the use of the process was hindered by certain factors (Laryea, 1996). Among which are the studied personnel with the major factors indicated as: inadequate staff, heavy work load, high patient turnout, inadequate equipment/supplies, patient centered care, being time consuming, inconsistency between theory and practice, poor motivation and lack of role models.

Challenges about the Nurses' Attitudes toward the Nursing Process

The nursing process can be effectively implemented when Nurses' show good attitudes toward the process. In some studies it showed that female students had more positive attitudes than male students regarding the ability to use the nursing process in providing high-quality care (Anonymous Nursing Students, 2007). In the study, about 80% nursing students believed that the nursing process was able to uniquely define nursing actions and presented an appropriate image of nursing. However, only 50% of students thought that using the nursing process was only a way for providing nursing cares. For

14% of students, rendering nursing cares based on nursing process could be very difficult (Anonymous Nursing Students, 2007).

Challenges Related to Determination of Nursing Diagnosis

A study conducted by Lopes et al.(2010) and Pokorskiet al.(2009) showed that performing the nursing process in the clinical setting, assessment was very effective as it could be helpful for determination of challenges related to this process. One of the challenges faced in the implementation of the process in the clinical settings was the stating of the nursing diagnosis by nurses (Lopes et al., 2010; Pokorski et al., 2009).The results of the study by Lopes et al. (2010) and Pokorski et al. (2009) showed that only 48.5% of the studied reports of nurses were recorded as nursing diagnosis that was associated with the method of patients' evaluation. This was as a result of failure to carry out good assessment of the patient or spending too much time to carry out the assessment of the patient could be challenging when it comes to stating the nursing diagnosis (Lopes et al., 2010).

Challenges Related to Recording Steps of the Nursing Process

The process of recording steps of the nursing process was also a challenge associated with the implementation of the nursing process. According to Saranto and Kinnunen, (2009) it had been shown that despite awareness of the need for recording of nursing process, nursing records may not be completely provided. A study by Ammenwerth et al. (2010) showed that nurses' ability to the use of nursing process was related to the use of nursing care planning system aided by computer. On the other hand, most nurses agree on the use of nursing process; but because it takes a lot of time,

they were less willing to use it. However, by using the computer system, nurses were able to quickly plan the nursing cares and, thus, spend less time on the recording process.

View on the Use of the Nursing Care Plan and Challenges

Care planning is an essential part of health care, but to some it is a waste of time, while among others it is misunderstood. Without specific document delineating the plan of care, important issues are likely to be neglected. Care planning therefore, provides a 'road map' of a sort, to guide all who are involved with the client's care (Fernandez-sola et al., 2012). Lee and Chang (2004) also claim that the use of the care plan on the hospital wards in planning care for patients is limited because nurses claim it is time consuming. Time constraint and other responsibilities is also a barrier to the use of the nursing care plan in planning individualized care for patients (Gulanick & Myer, 2007).

The attitudes of qualified staff of the three distinct units towards the nursing process were studied by (Bowman, Thompson, & Sutton, 1983). This study reveals that a structured educational programme was beneficial in creating a positive attitude towards the nursing process whereas a less structured approach had the opposite effect. Haberman and Uys (2006) carried out a study on the use of the nursing process among nurses in the Caribbean. Findings showed that older nurses use the nursing process less than newer nurses and the diagnosis was the phase that was least liked by the nurses because of the language and wording. Some participants expressed that the implementations of the nursing process was time consuming and interfering in patient's care rather than a useful tool in effecting quality care.

Maeve (1995) was of the view that there exist a gap between the academicians who developed the concept and the clinicians who were to implement or work with it. As such, the increasing requirement for the use of the nursing diagnosis as the basis for nursing practice has been welcomed by the academic but not wholly embraced by the clinicians. Some clinicians have seen this as a devaluing of bedside nursing and find the language offensive and unworkable.

In Ghana, Aketewa (2006) outlined various challenges that hinder the Implementation of the nursing care plan. The study included a relatively low number of professional nurses and lack of resource personnel capable of teaching the subject comprehensively. Nursing documentation in health facilities can be used to demonstrate compliance with quality standards (Jefferies, Johnson& Langdon, 2010). Effective nursing care depends on access to high quality information obtained from data collected by means of patient assessment, identification of patients' problems, plan of care, interventions, and evaluation of the outcome criteria. Advantages of good documentation were to facilitate accurate structured information, and more focused communication between care givers (Saranto & Kinnunen, 2009).

The Way Forward

The ultimate purpose of the care plan was to guide all who were involved in the care of a patient to provide the appropriate, individualised, holistic and continuous care in order to ensure optimal outcome of stay in the health setting. The nursing care plan has served patient well for many years now, and it continues to be the basis for patient's care. Though there were

lapses in its implementation, with the appropriate measures to address the various challenges success was assured.

In Holloway's opinion, as educators, there was the need to move to a focus that integrated both the intuitive and scientific nature of nursing practice. Dialogue needed to occur around this issue between nursing clinicians and academics. The dramatic changes that are occurring in the health system require a flexible and contextual tool with which to provide excellence in care. Thus care planning could be moved from academic fantasy to practice reality (Holloway, 1999).

Strategies to improve the use of the Nursing Process

On the strategies promoting the implementation of nursing process, Hagos et al. (2014) showed that 20(40.37%) of the respondents suggested regular supply of nursing process materials and motivating nurses to have interest in writing and implementing nursing process, (37.6%). These suggested regular supervision of nurses by the head nurse, 20 (40.61%) handling over nursing process at each shift, 20(40.77%) continuous retraining of nurses on nursing process in the continue education, and 4(4.77%) encouraging cooperation among nurses.

NOBIS

CHAPTER THREE

METHODOLOGY

Introduction

This chapter describes the method used in order to achieve the set objectives for the study. It covers, research design, study area, target population, sample and sampling techniques, instrument for data collection, validity and reliability of instrument, method of data collection, method of data analysis and ethical consideration.

The Research Design

According to Opoku (2005), a research design is the plan and structure of the research to guide in data collection. It helps to know in advance the statistical test to be needed to analyse data. The research approach employed in this study was descriptive cross-sectional, designed to explore the application of the nursing process and its factors affecting it in pediatric care. The study employed quantitative technique for data collection. The cross-sectional descriptive method was used for this study and it involved the description of events, situation and phenomena. It was also considered appropriate, because the researcher used only questionnaire for the data collection.

Study Area

The study was carried out in Korle-Bu Teaching Hospital and Princess Marie Louis Hospitals, both in the Greater Accra Region.

Korle-Bu Teaching Hospital

The Department of Child Health of the Korle-Bu Teaching Hospital is the premier referral centre for children under thirteen years (13) with medical and surgical condition, and it has a bed capacity of two hundred and forty-five (245). The total number of professional nurses at the department is one hundred and thirty-eight (138) with twenty-two (22) pediatric nurses. Their vision was to achieve excellence in pediatric care and thus attain and maintain the lead as first class children's hospital in Ghana. The department also caters for emergency cases which were not referred. It is a 24 hour service facility with its OPD handling over 28,362 clients annually. Specialist clinics are also held almost daily for conditions such as Neurological, Cardiac, Sickle Cell disease, Asthma, HIV/AIDS, Renal, Oncology, Diabetic, Hematology and Neonatal and Intensive Care (NICU) follow ups.

The child health section of the hospital is the only department with three (3) floors, but the first floor is occupied by the surgical department. It is thus constrained by space due to the increasing patronage of the services the hospital delivers. It has eight (8) major units which include the Out Patient Department (OPD), Emergency Unit, Neonatal Intensive Care Unit (NICU), Medical Wards, mother's Hostel, Child Abuse Unit, Public Health Unit and a Counseling Unit. It is supported by a Laboratory, Medical Biostatistics, an X-Ray and a Pharmacy Unit.

Princess Marie Louis Hospital

The Princess Marie Louis (PML) Hospital was established in 1926 mainly for children with malnutrition especially children under-five (5) years.

The hospital now caters for children less than thirteen years (13) with medical and surgical condition, with a bed capacity of one hundred (100). The total number of professional nurses at the department is one hundred and sixteen (116) and four (4) pediatric nurses. Their vision is to achieve excellence in pediatric care in Ghana. The hospital is a 24 hour service facility with its OPD handling over 30,362 clients annually. The hospital has a special unit for malnourished children. The Princess Marie Louis (PML) hospital has four (4) wards, namely Susana Ofori Atta (SOA), Cicely Williams Ward (CWW), Caritas Italian Ward (CIW) and Reverend Campbell (R/C) Ward.

It has seven (7) major units which include the Out Patients Department (OPD), Emergency, Neonatal Intensive Care Unit (NICU), Medical and Surgical Wards, Public Health Unit and Rehabilitation Unit for malnourished children. It is supported by a laboratory, medical biostatistics, an x-ray department, a pharmacy unit, a theatre and a mortuary.

These areas were chosen for the reason being that Korle-Bu Hospital is a teaching, resource, research and a major referral center while Princess Marie Louis Hospital is the only children hospital in Ghana at the time of study and the two facilities have all the resources needed for pediatric care.

Study Population

The population has to do with those who possess the characteristics the researcher was interested in. The study population that was used for the study was all registered nurses working in the Pediatric Unit of Korle-Bu Teaching Hospital and Princess Marie Louis Hospital. The participants were to meet the following criteria for inclusion: they must be Registered Nurses with a

Diploma, Degree or a Pediatric Nursing Certificate and have three years or more working experience at the pediatric unit. Exclusion criteria for the study are Community Health Nurses, Public Health Nurses and Health Assistance. The population of nurses in the two hospitals is 280.

Sample Size Determination

The sample size was computed with the formula proposed by Yamane formulae (1967) as cited in (Glenn, 2009)

$$\text{Equation; } n = \frac{N}{1 + N(e)^2}$$

Where n is the sample size,

N is the study population size and

e is the level precision desired.

The following parameters were used in arriving at the sample size.

The population of nurses in the two hospitals is 280 as indicated above.

Assuming a 95% confidence level and desired precision (e) of 5%, a minimum sample size of 144 was estimated as follows: $n = \frac{N}{1 + N(e)^2}$

$$\text{Minimum sample size } n = \frac{280}{1 + 280(0.05)^2}$$

$$\text{Minimum sample size } n = \frac{280}{1 + (280 \times 0.0025)}$$

$$\text{Minimum sample size } n = \frac{280}{1.95}$$

$$\text{Minimum sample size } n = 144$$

The minimum sample size for the study was 144 but there was an upwards adjustment of non-responses rate of 5%; that is 7; Thus, a sample size of 151 was estimated.

To ensure accurate or good representation of the study, a large number of the population was taken which could be generalised. The sample size was increased to cover three parts of each population. Therefore, one hundred and

twenty participants were taken from KBTH and ninety participants were taken from Princess Marie Louis (PML). This allocation of sample size was done so that there will be no bias in the study and also because KBTH had a larger population than PML.

Sampling Techniques

The sampling strategy for this study involved listing all the registered nurses in the Pediatric Unit from Korle-Bu and Princess Marie Louis hospitals. The sample (210) was distributed among the two (2) hospitals namely: Prince Marie Louis and Korle-Bu in the ratio of 3: 4 respectively. This is because Korle-Bu hospital had more eligible study participants than PML.

A simple random sampling technique was used to select the participants. The list of staff members in the unit was used to identify these participants because they were listed according to their level of seniority (listed from Deputy Director of Nursing Service). The required quota (number) for each hospital was written on pieces of papers while the rest had no numbers on them. The sample was then put in a basket and vigorously shaken. The number of nurses from each hospital was obtained by proportional allocation with 120 nurses from KBTH, and 90 nurses from PML hospital. The number of nurses that were selected randomly from each hospital, ranged from 120 to 91, making a total of 210 nurses to participate from a total population of 280 nurses; thus, representing more than 50 percent of the population.

Data Collection Tool

A structured questionnaire was used to collect data from the respondents. To make the data more valid, most of the questions were adapted from previously conducted studies, though some changes were made to suit the local context. In collecting data from the research site, the researcher sought for an introductory letter from the researcher's University to gain access to the research sites.

The questionnaire was organised in six major sections. Section A sought to elicit demographic information about the respondents. Questions covered variables such as age, marital status, educational status, religion and ethnicity. This section gave a fair idea about the respondents and also aided in grouping of data for analysis of results with questions on. Section (B) asked questions on knowledge of the nursing process, whilst Section (C) identified what steps the nursing-process nurses based their care on, and their willingness and acceptability to use those steps. Section (D) examined the attitudes of nurses towards the use of the nursing process. Sections (E) and (F) focused on factors hindering the implementation of the nursing process and how to improve the use of the process respectively. The main reason for using the questionnaire was because it served as an effective method of collecting information. The questionnaire adopted for the study was the Likert scale type. This was because the Likert scale is the globally-accepted instrument for measuring human behaviors.

Data Collection Procedure

The study employed quantitative methods of data collection. The respondents were informed about the study and after their consents were

sought, the researcher gave out copies of the questionnaire to the respondents in the two (2) hospitals in Accra and retrieved the answered questionnaires in five (5) days.

Data Processing and Analysis

For quantitative data, after checking the completeness, missing values, and coding of questionnaires, data was fed into computer, processed and analysed using the Statistical Package for the Social Sciences (SPSS, version 20). The data was summarised and described using descriptive statistics. The descriptive statistics provided simple summaries about the sample, the measures used and then formed the basis of the quantitative analysis of data.

As earlier indicated, the data obtained was analysed with Statistical Package for Social Sciences, (SPSS) Inc. Version 20 for Windows and reported using, tables, pie-charts, bar charts and box plots. Descriptive and inferential statistics were used to analyse the data. Likert scale responses were converted into raw scores for further analysis. Again, a Pearson chi-square test was conducted to test the association between categorical variables and non-parametric Man Witney U test was also conducted to determine the significant difference of some selected categorical variables (gender, educational qualification, highest professional qualification, etc.) with respect to their level of knowledge and attitude towards practice of nursing process. A binary logistic regression analysis was also performed to determine the predicative ability of some associated variables to the variabilities in the practice of the nursing process. Further, a Chi-square goodness of fit-test was also conducted

to determine the significant difference between observed frequencies of categorical variables. The alpha level set for all significance was 0.05.

Ethical Consideration

For ethical reasons, the following principles, confidentiality, voluntary participation and anonymity in the conduct of the research were used. In terms of confidentiality, the respondents were assured that the information will not be disclosed to anyone who is not directly involved in the study. As regards voluntary participation, the respondents were fully informed and they volunteered to participate in the study, after I had explained the purpose of the study – that it was for academic purposes only. Again, anonymity, privacy and confidentiality of the respondents were also ensured during the interview. The respondents were promised that they would remain anonymous throughout the study. That is, their names/addresses will not be written on the questionnaire. Besides, the consent of the participants was obtained from each nurse for participation in the study.

Validity and Reliability

Validity refers to an instrument being able to measure what it is supposed to measure. Reliability on the other hand ensures the consistency and dependability of the measuring instrument. The questionnaires used in this study were valid as they helped the researcher address the concerns of the study.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter presents the results of this study based on the specific objectives and the research questions. A total of 220 questionnaires were distributed among two hospitals, and 215 completed questionnaires were returned. The filled questionnaires were enough for data analysis, giving a response of 97.72 percent.

Socio-demographic data of respondents

Table 1 shows the demographic data of the participating nurses. It was found that among the two hospitals, a significant ($p < 0.001$) majority of the nurses (97.2 percent) were females as compared to male nurses who represented 2.8 percent.

It is also seen from the table that a majority 37.2 percent of the respondents were within the age range of 30-34 years, followed by 36.3 percent of them falling within the age range of 24-29 while a low proportion of 3.3 percent were within the ages of 40-44 at the time of the survey. It is also seen that a significantly ($p < 0.05$) higher number of respondents (96.7 percent) had tertiary education as compared those with O' level (1.4 percent) and SHS, (1.9 percent), respectively. This indicates that significantly a higher number of respondents had high educational background. With regards to their professional qualification background, it was realized that a significant ($p < 0.001$) group of respondents (65.6 percent) were Registered General Nurses with diploma, as compared to nurses with Bachelor of Science in

Nursing (22.3 percent), Post diploma with Pediatric Nursing were 5.1 percent and Bachelor of Science in Nursing with Pediatric Nursing were 7.0 percent. This indicates that a significantly low proportion of the respondents had Bachelor of Science degree in Nursing with Pediatric Nursing. Fifty-four percent of the total respondents were working at the Korle-Bu Teaching Hospital while and 46.0 percent were working at the Princes Marie Louis Hospital.

It is also seen that slightly over half of the total respondents (50.2%) have spent five to nine years working at their present unit. This group was followed by those who have worked close to four years at their unit, representing 29.3%. About 13.5% of the total respondents have also worked for about 10 to 14 years while a few proportion (7.0%) have worked over 15 years at their present unit. Table 1 illustrates these assertions:

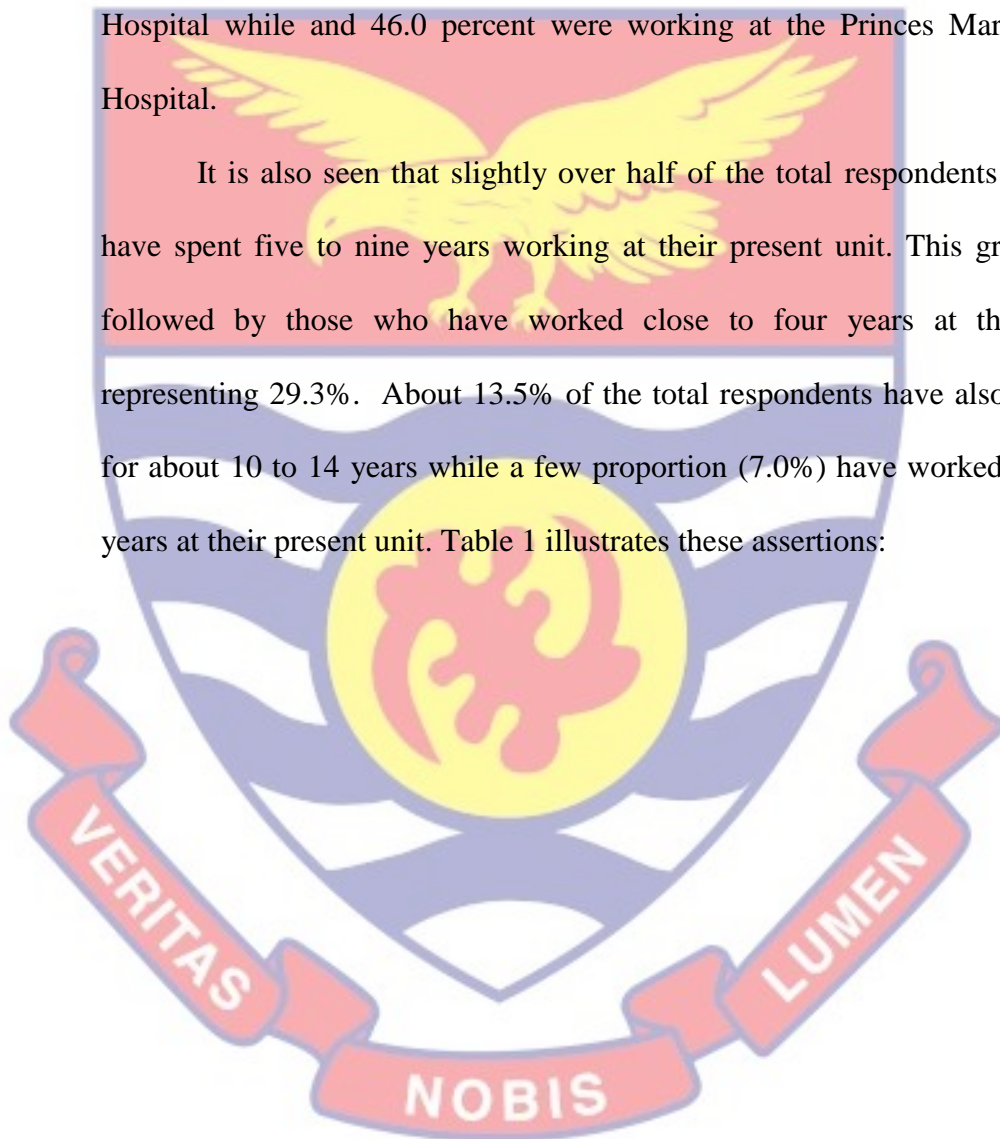


Table 1: *Demographic Data of Respondents*

Characteristics	Frequency (n)	Percentage (%)	p-value
Gender			<0.001
Male	6	2.8	
Female	209	97.2	
Age group (years)			<0.001
24-29	78 ^a	36.3	
30-34	80 ^a	37.2	
35-39	39 ^b	18.1	
40-44	7 ^b	3.3	
45 and above	11 ^b	5.1	
Educational qualification			<0.001
O' level	3 ^b	1.4	
A' level	0	0.0	
SHS	4 ^b	1.9	
Tertiary	208 ^a	96.7	
Highest professional qualification			<0.001
Registered General Nurse (Diploma)	141	65.6	
Post Basic diploma with Pediatric Nursing	11	5.1	
Bachelor of Science in Nursing	48	22.3	
Bachelor of Science in Nursing with Pediatric Nursing	15	7.0	
Place of Work			0.246
Korle-Bu teaching hospital	116	54.0	
Princess Marie Louis	99	46.0	

Source: Field data, Clarke (2016)

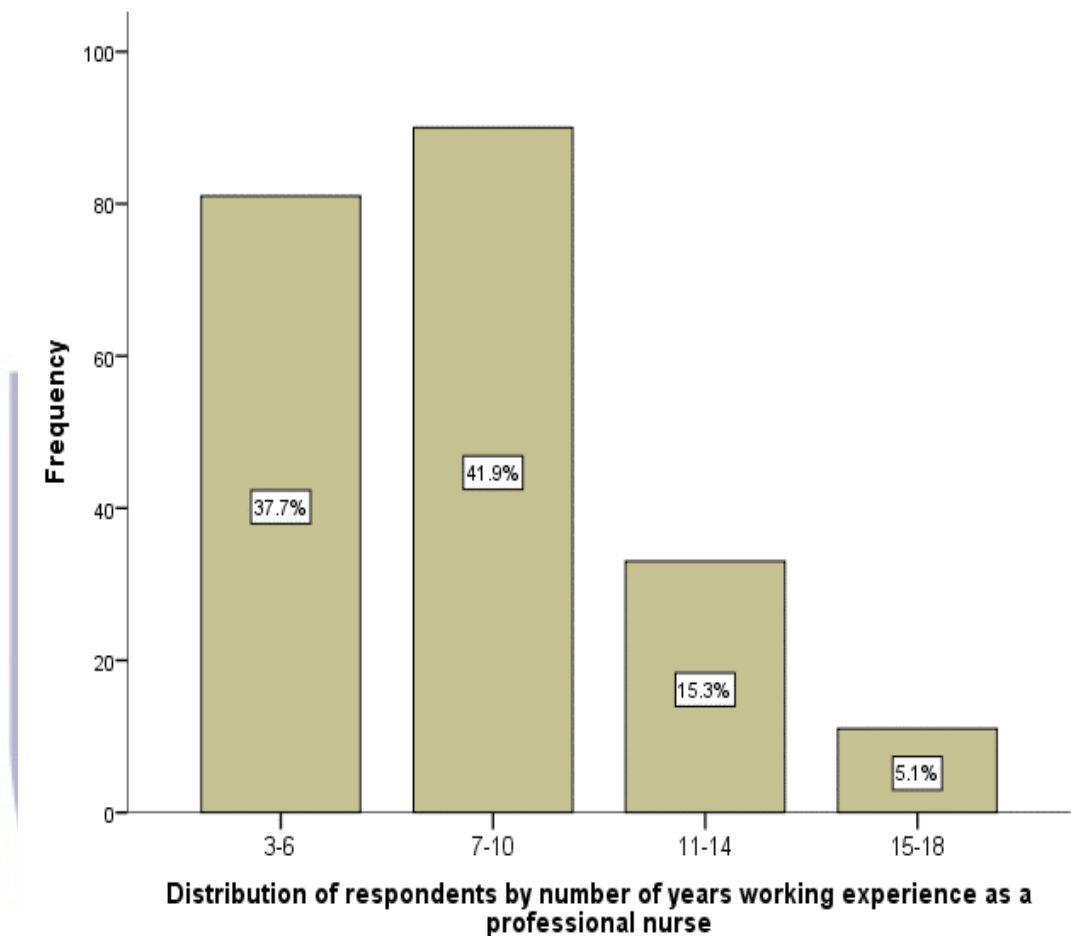


Figure 2: Working experience by respondents as professional nurse (Years).

The distribution of respondents according to their years of working experience as professional nurses is also presented in Figure 2. The data shows that about 41.9 percent of the total respondents have about 7-10 years of working experience as a professional nurse, followed by 37.7 percent who have 3-6 years of working experience. Again, 15.3 percent of total respondents also have 11- 14 years of working experience while only 5.1 percent have about 15-18 years of working experience as professional nurses. These statistics indicate that a majority of the total respondents (41.9 percent) have a considerable 7-10 years working experience as a professional nurse. The

number of years of working experience the nurses had thus had a significant effect on the use of the nursing process.

Table 2 presents results of the knowledge level of practicing nurses on the use nursing process. In assessing the knowledge and experience level of respondents on the use of nursing process at the pediatric units, a list of knowledge and experience related variables were put together to achieve this objective. Table 2 showed that a significant ($p < 0.05$) proportion of the total respondents (80.0 percent) confirmed strongly that they had good knowledge of the nursing process as compared to about 0.5 percent who did not have good knowledge of the nursing process. In a similar observation, it was found that a significant majority (67.0 percent) of the total respondents strongly agreed that they got the knowledge of the Nursing Process from the training school they attended. It was also found that a significant majority (56.3 percent) of the total respondents disagree that they got the knowledge of the Nursing Process from seminars and workshop.

From the analyses, it was also found that a significant majority (82.3 percent) of the total respondents did understand the nursing process based on the time of teaching. The Table also shows that a significant majority (86.5 percent) of the total respondents were able to implement the nursing process after teaching. Again, a significant majority (85.1 percent of the total respondents) still remember the format of the nursing process. It was also observed that a significant majority (76.7 percent of the total respondents) agree that the current implementation of the nursing process was not different from what was being taught in school. From the Table, it was found that a significant majority (57.2 percent of the total respondents) disagree to having

difficulty in understanding the nursing process. From the table, it shows that a significant majority (60.0 percent of the total respondents) strongly disagree that they use the nursing process in caring for their patient. The table further shows that a significant majority (79.1 percent of the total respondents) strongly disagree that they do not need more information and tutorials to put to practice the nursing process.



Table 2: Knowledge Level on the Use of the Nursing Process/ Care Plan at the Pediatric unit

SD: Strongly Disagreed, D: Disagreed, UD: Undecided, A: Agreed and SA: Strongly Agreed

Knowledge related variables	SD=1	D=2	UD=3	A =4	SA=5	Mean	SD
	N (%)	N (%)	N (%)	N (%)	N (%)		
I have a good knowledge of the nursing process	0	1(0.5)	1(0.5)	41(19.1)	172(80.0)	4.79	0.45
I got this knowledge from the training school I attended	2(0.9)	5(2.3)	0	64(29.8)	144(67.0)	4.59	0.70
I got the knowledge of the Nursing process from seminars/workshops	21(9.8)	121(56.3)	1(0.5)	65(30.2)	7(3.3)	2.61	1.11
I did understand the nursing process by time of teaching	3(1.4)	13(6.0)	1(0.5)	177(82.3)	21(9.8)	3.93	0.68

(Table 2, continued)

I was able to implement the nursing process	0	1(0.5)	1(0.5)	186(86.5)	27(12.6)	4.11	0.37
I do still remember the format	1(0.5)	9(4.2)	2(0.9)	183(85.1)	20(9.3)	3.99	0.56
The current implementation of the nursing care plan is not different from what is been taught in school	10(4.7)	18(8.4)	0	165(76.7)	22(10.2)	3.80	0.90
I do not have difficulty in understanding the nursing process/care plan	2(0.9)	123(57.2)	1(0.5)	73(34.0)	16(7.4)	2.90	1.11
I use the nursing process in caring for my patient	129(60.0)	47(21.9)	0	33(15.3)	6(2.8)	1.79	1.19
I don't need more information and tutorials to put to practice the nursing process	170(79.1)	26(12.1)	2(0.9)	8(3.7)	9(4.2)	1.42	0.99

Source: Field data, Clarke (2016)

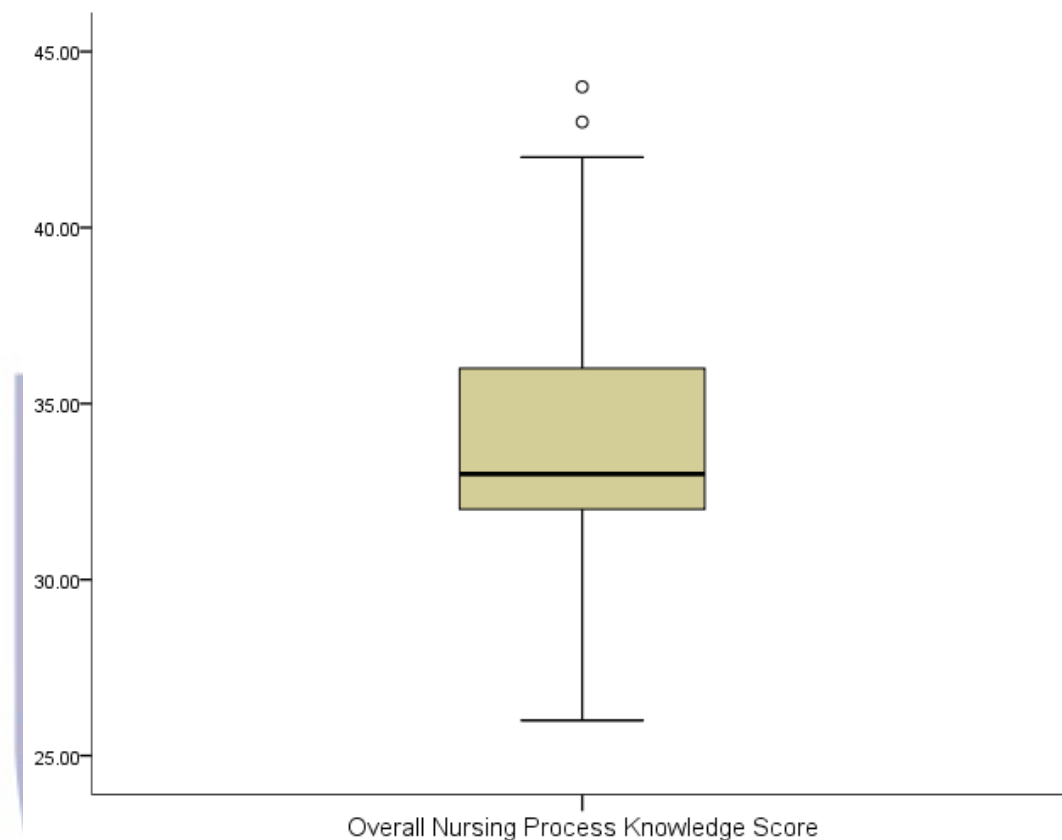
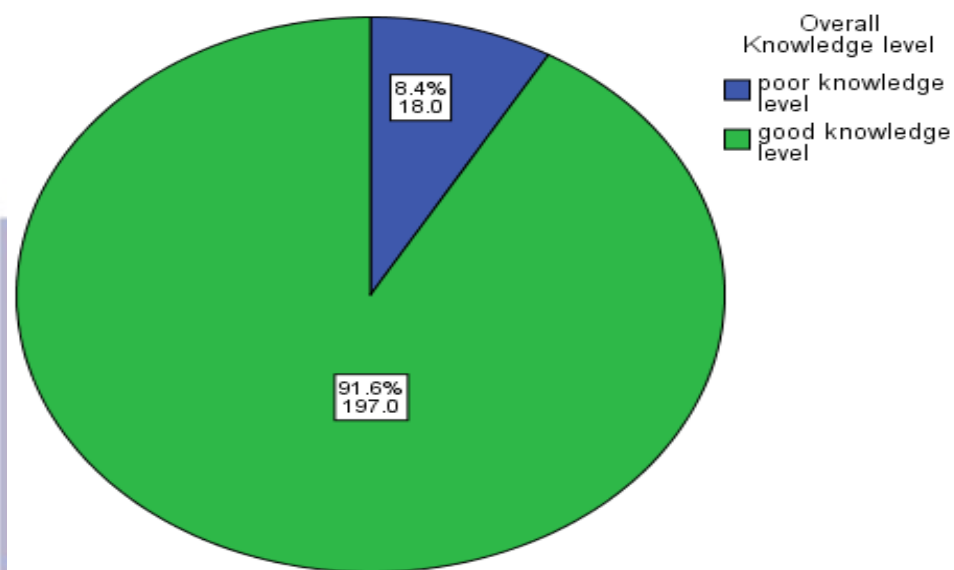


Figure 3: Overall knowledge scores regarding the nursing process

Figure 3 shows the overall average score of respondent's knowledge level which was found to be 33.92 ± 3.20 . This score indicates that the average knowledge level of the respondents' was good (since it is above 30 score); however, their knowledge level scores was not normally distributed based on the Kolmogorov-Smirnov test (KS statistics = 0.155, $p = 0.001$). It is further revealed that, the average knowledge score was not normally distributed across the total respondents, probably due to the effect of the two outliers observed in the data.



$$\chi^2_{(1)} = 149.028, p=0.001$$

Figure 4: Knowledge level regarding nursing process

Figure 4 above also shows that a significant ($p < 0.001$) majority 197 (92.0%) of the total respondents had a good knowledge level regarding nursing process as compared to 18 (8.4%) with poor knowledge level.

Table 3 shows the results of non-parametric analysis performed to determine the difference between male and female nurses with respect to their knowledge level on nursing process. A Mann-Whitney U analysis ($U=593.000, p= 0.819$) shows that there was no significant difference between the mean knowledge scores recorded by both males (33.67 ± 5.47) and females (33.93 ± 3.14), respectively. This observation indicates that both male and female nurses who participated in this work had an average good knowledge score with statistically similar mean ranks.

Table 3: *Level of knowledge on nursing process among male and female nurses*

Gender	N	Mean knowledge score	SD	Knowledge level Rank
Male	6	33.67	5.47	102.33
Female	209	33.93	3.14	108.16
Total	215			

Source: Field data, Clarke (2016); Mann-Whitney U test indicates $U=593.000$, $p=0.819$

Table 4 below also presents the non-parametric Kruskal Wallis analysis performed to determine respondent's highest professional qualification on their knowledge level of nursing process. The data analysis shows that there was no significant effect of the highest professional qualification of the respondents on their knowledge level regarding the nursing process.

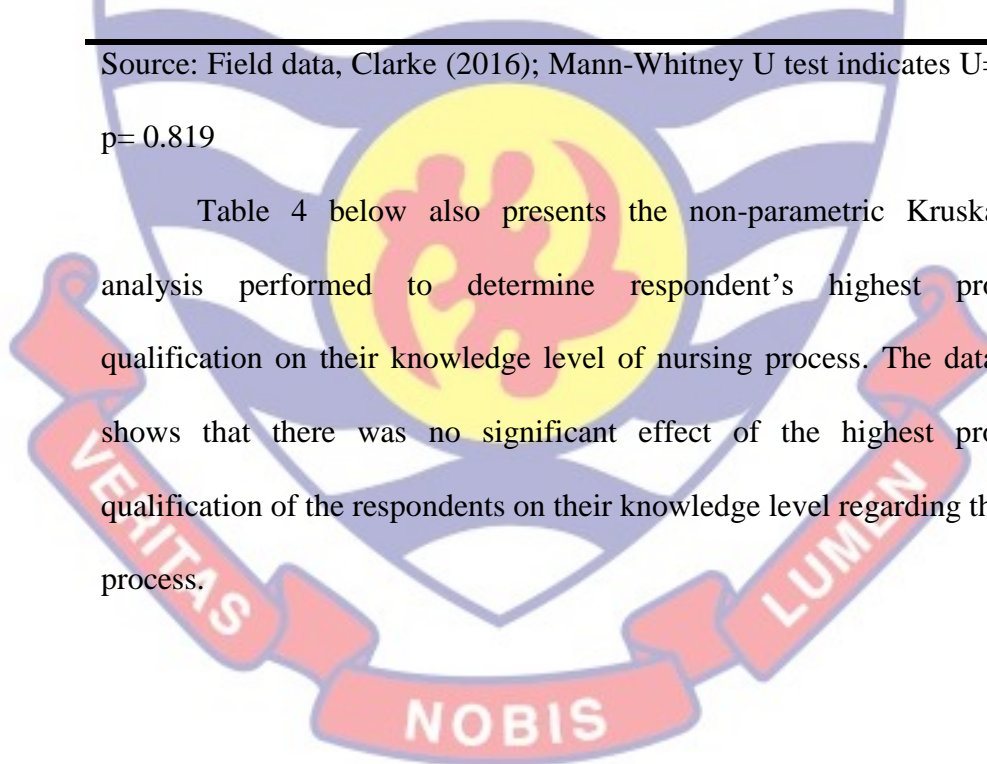


Table 4 -Professional Qualification and Knowledge Level of Nursing Process

Professional qualification	N	Mean	SD	Knowledge	
				level	Mean Rank
Registered General Nurse (Diploma)	141	33.01	2.54	92.67	
Post Basic diploma with Pediatric Nursing	11	35.36	4.27	127.59	
Bachelor of Science in Nursing	48	35.42	3.21	137.52	
Bachelor of Science in Nursing with Pediatric Nursing	15	36.60	4.42	143.27	
Total	215	33.92	3.20		

Source: Field data, Clarke (2016); Kruskal Wallis H test $\chi^2(3) = 25.793, p > 0.05$

Table 5 presents the non-parametric Kruskal Wallis analysis performed to determine respondents rank on their knowledge level of nursing process. The data shows that the rank of participating nurses did not have any significant effect on their knowledge level regarding the nursing process.

Table 5 -Rank of Professional Nurses and Knowledge Level of Nursing Process

Rank	N	Mean	SD	Knowledge level Mean Rank
Staff nurse	55	32.80	2.78	85.91
Senior nurse	82	33.26	2.43	98.12
Nurse officer	49	35.33	4.11	127.62
Senior Nursing officer	19	35.00	2.87	132.58
Principal Nursing officer	10	36.00	2.22	167.65
Total	215			

Source: Field data, Clarke (2016); Kruskal Wallis H test $\chi^2(4) = 26.564$, $p \Rightarrow 0.001$

The knowledge level was categorized as good when the scores was less than 30 and as poor when scores was greater than 30. Also, the knowledge level was further categorised as low (0-20); moderate (30-40) and high (40-50). From Table 6 below, it shows that 4.7 percent of the respondents had high knowledge. Ninety-three percent and 2.3 percent had moderate and low knowledge on the nursing process.

Table 6: *Categories of Respondent's Level of knowledge*

Categories	Frequency (n)	Percentage (%)
Low	5	2.3
Moderate	200	93.0
High	10	4.7
Total	215	100

Source: Field data, Clarke (2016)

There was a significant association ($p=0.001$) between type of nurse and their category of knowledge level. From Table 7, it was observed that the pediatric nurses do not have nurses under the category of low knowledge which could be due to their specialty as pediatric which also based their care on the nursing process.

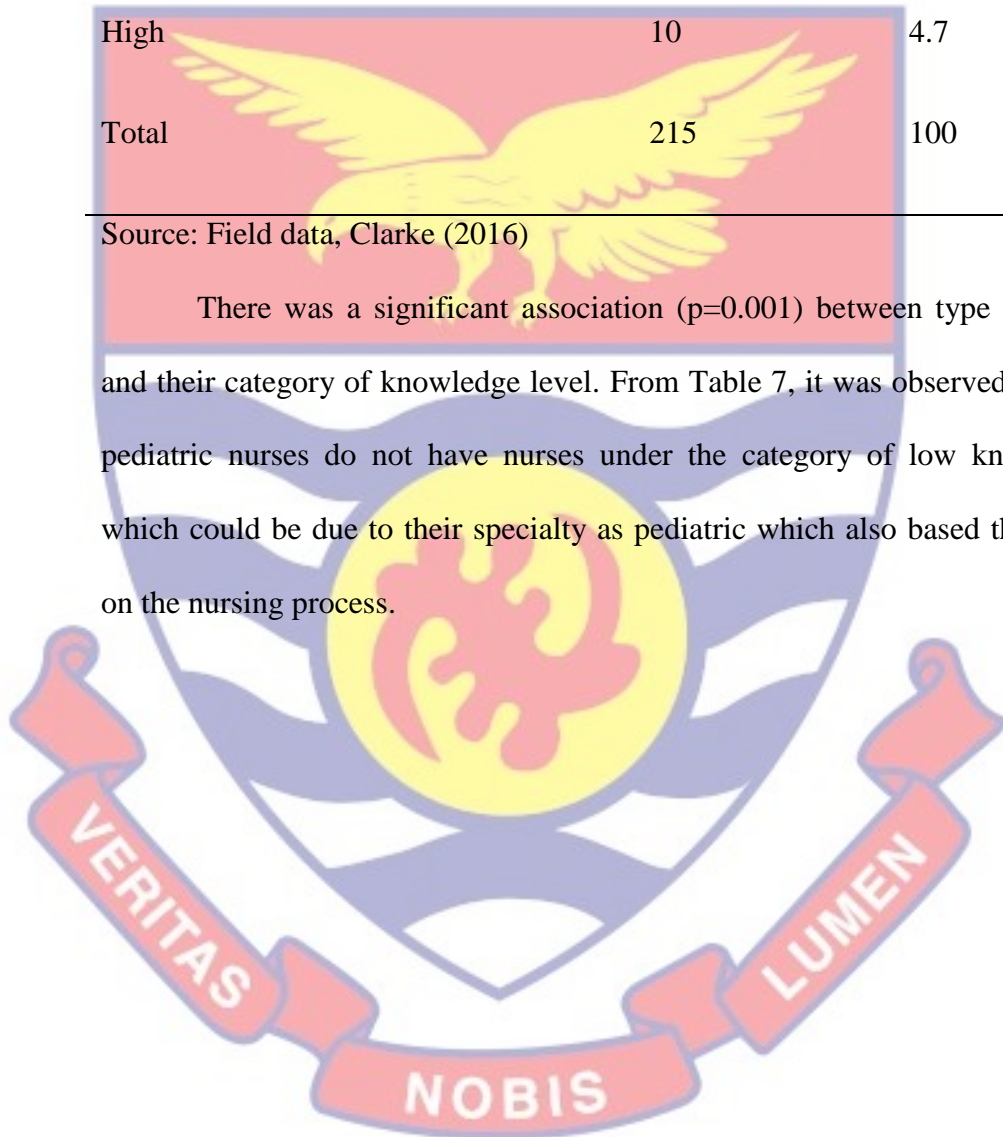


Table 7: *Type of Nursing Profession and Category of Knowledge Level*

Type of Nurses	Category of knowledge level			Total
	Low (%)	Moderate (%)	High (%)	
Non-Pediatric	5(100.0)	180 (90.0)	4(40.0)	189(87.9)
Pediatric	0	20 (10.0)	6 (60.0)	26 (12.1)
Total	5(100.0)	200(100.0)	10(100.0)	215(100.0)

Source: Field data, Clarke (2016) $\chi^2 (2) = 23.101, p=0.001$

Table 8 shows that there was a significant association ($p=0.020$) between the gender of the nurses and their category of knowledge level. From the Table 8, we see that 4 (80.0%) female nurses as compared to 1 (20.0%) male nurse had low knowledge which shows that the females are more into the nursing process than the males. The female nurses also had knowledge on the nursing process more than the males.

Table 8: *Gender of Nurses and Category of Knowledge Level*

Gender	Category of knowledge level			Total
	Low (%)	Moderate (%)	High (%)	
Male	1(20.0)	4(2.0)	1(10.0)	6(2.8)
Female	4(80.0)	196(98.0)	9(90.0)	209(97.2)
Total	5(100.0)	200(100.0)	10(100.0)	215(100.0)

Source: Field data, Clarke (2016) $\chi^2 (2) = 7.835, p=0.020$

Again, there was significant association ($p=0.001$) between respondents highest professional qualification and their category of knowledge level. This is due to the fact that as one acquires the basic training as nurse, he/she acquires the knowledge and as the nurses further their professional

career, they gain in-depth knowledge about the concept and would prefer to use it more in caring of the patient.

Table 9: *Professional Qualification and Category of Knowledge Level*

Highest professional qualification	Category of knowledge level			Total
	Low (%)	Moderate (%)	High (%)	
Registered Nurse (diploma)	4 (80.0)	137(68.5)	0	141(65.6)
Post Basic diploma with pediatric certificate	0	9(4.5)	2(20.0)	11(5.1)
Bachelor of Science in Nursing	1(20.0)	43(21.5)	4(40.0)	48(22.3)
Bachelor of Science in Nursing with pediatric	0	11(5.5)	4(40.0)	15(7.0)
Total	5 (100.0)	200 (100.0)	10 (100.0)	215 (100.0)

Source: Field data, Clarke (2016) $\chi^2 (6) = 29.788, p=0.001$

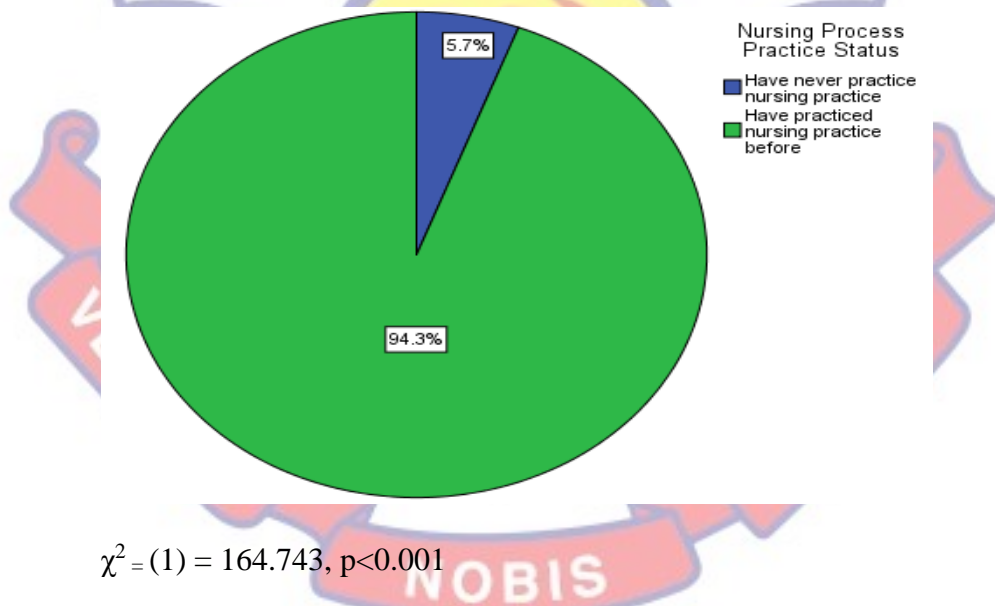
A Pearson chi-square conducted shows that there was a no significant association ($p=0.116$) between the type of hospital and their practice of nursing process. This is probably due to the upgrading of the Children Hospital (PML) to a standard of non-referral point. They have all the facilities that they need to run the facility just like the Teaching Hospital (Korle-Bu).

Table 10: Association between Hospital and the Practice of Nursing Process

Category of Nurses	Response to whether nurses have practiced nursing process before		Total N (%)
	Never practised nursing process before N (%)	Have practised nursing process before N (%)	
Korle-Bu teaching Hosp	4(33.3) ^a	112 (56.6) ^a	116 (55.2)
Princess Marie Louis	8(66.7) ^a	86(43.4) ^a	94 (44.8)
Total	12 (100.0)	198 (100.0)	210 (100.0)

Source: Field data, Clarke (2016)

$\chi^2 (1)=2.470, p=0.116$



$\chi^2 = (1) = 164.743, p < 0.001$

Figure 5: Practice and Attitude by Respondents towards the Nursing Process

The data from Figure 5 shows that a significant number of the respondents (94.3 percent) indicated that they had practised nursing process before as compared to 5.7 percent who had never practiced nursing process before.

Table 11 below shows that the nurses' highest professional qualification significantly associated ($p = 0.017$) with their response to whether they had practiced nursing process before. It was found based on the Bonferroni test, that out of 198 respondents who had ever practised nursing process, a significant high proportion (66.2 percent) were registered general nurses, as compared to respondents 4.0, 22.7, and 7.1 percent who were post basic diploma with a pediatric certificate, Bachelor of Science in Nursing and Bachelor of Science with Pediatric s Nursing, respectively. Though a majority of the registered nurses had practiced Nursing before, it was due to the fact that it forms the bases for every training school for nursing. But as one attains higher professional qualification, one gains more knowledge on the process and applies it more in the field of work.

From the Table 11, it is seen that 50%, 25.0%, 16% and 8.3 % of registered general nursing, post basic diploma, Bachelor of Science in Nursing and Bachelor of Science with pediatric respectively have never practiced the nursing process before.

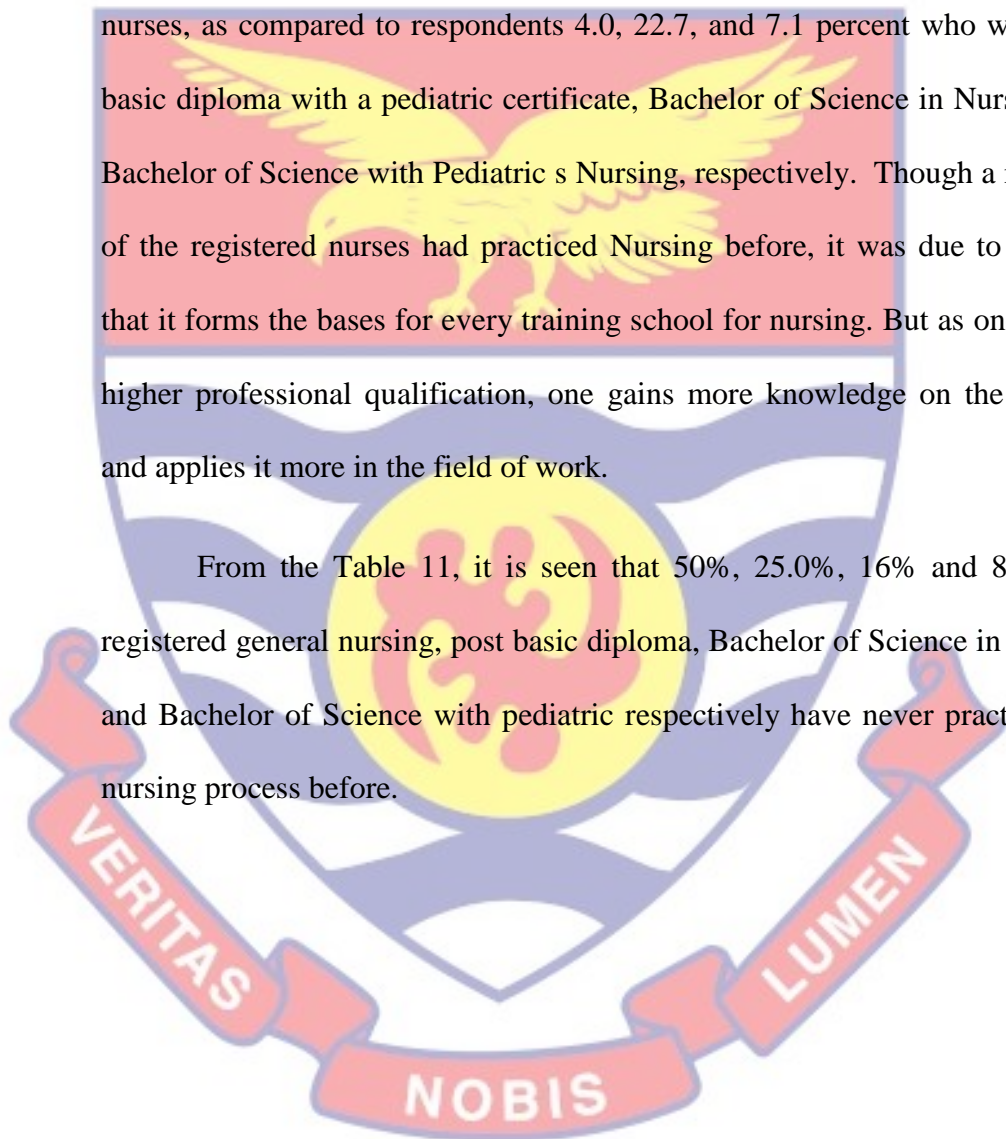


Table 11: *Professional Qualification and Practice of the Nursing Process*

Highest professional qualification	Response to whether nurses have practiced nursing process before		
	Never practiced nursing process	Practiced Nursing process before	Total
	N (%)	N (%)	N (%)
Registered General Nurse (Diploma)	6 (50.0) ^a	131 (66.2) ^a	137 (65.2)
Post Basic diploma with Paediatric Nursing	3 (25.0) ^a	8 (4.0) ^b	11 (5.2)
Bachelor of Science in Nursing	2 (16.7) ^a	45 (22.7) ^a	47 (22.4)
Bachelor of Science in Nursing with Paediatric Nursing	1 (8.3) ^a	14 (7.1) ^a	15 (7.1)
Total	12 (100.0)	198 (100.0)	210 (100.0)

Source: Field data, Clarke (2016) $\chi^2 (3) = 10.153, p= 0.017^*$.

Bonferroni method of column proportion comparison indicates column with same superscripts are not significantly different

The Pearson chi-square analysis conducted shows that there was a significant association ($p=0.023$) between the category of nurses. It was realized that a majority of non-pediatric nurses (89 percent) have rather practiced the nursing process, as compared to Pediatric Nurses (11.1 percent). This is due to the fact that the nursing process forms the basis for the care that will be rendered to the patient. From the table, it shows that some nurses had

never practiced the nursing process before, due to some of the factors that impede the use of the nursing process.

Table 12: *Categories of Nurses and Practice of Nursing Process*

Category of Nurses	Response to whether nurses have practiced nursing process before		Total
	Never practiced nursing process before	Practice nursing process before	
	N (%)	N (%)	N (%)
Non-Paediatric Nurses	8 (66.7) ^a	176 (88.9) ^b	184 (87.6)
Paediatric Nurses	4 (33.3) ^a	22 (11.1) ^b	26 (12.4)
Total	12 (100.0)	198 (100.0)	210 (100.0)

Source: Field data, Clarke (2016) $\chi^2(1) = 5.151, p = 0.023^*$

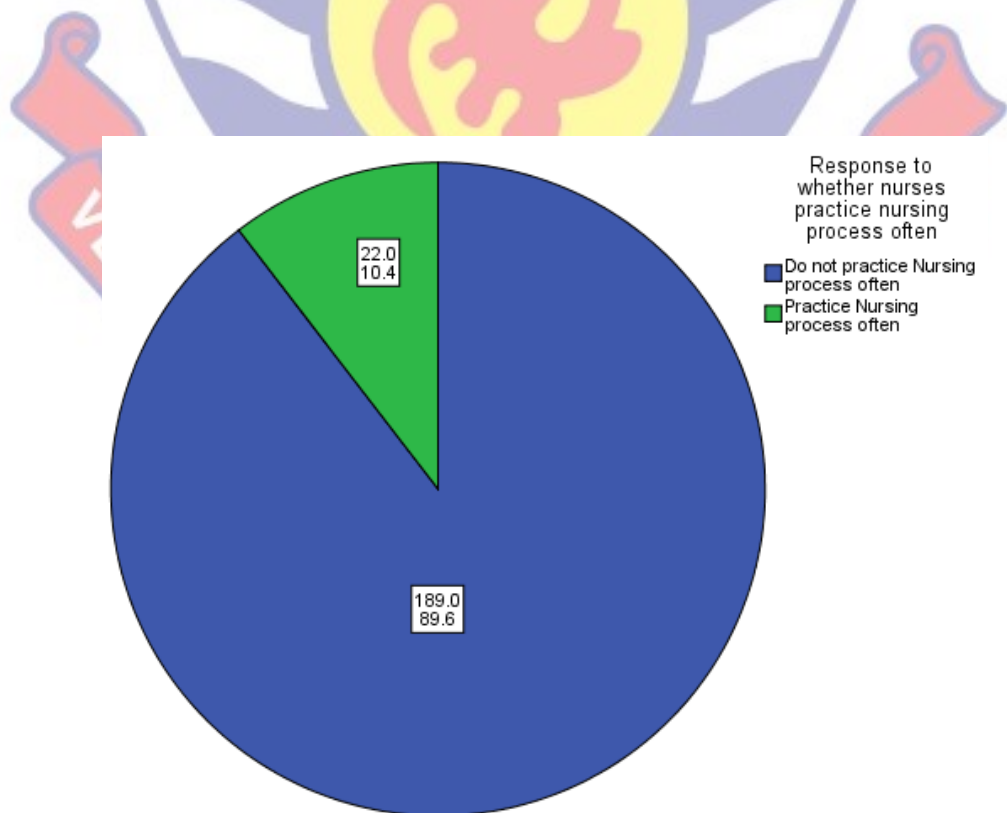
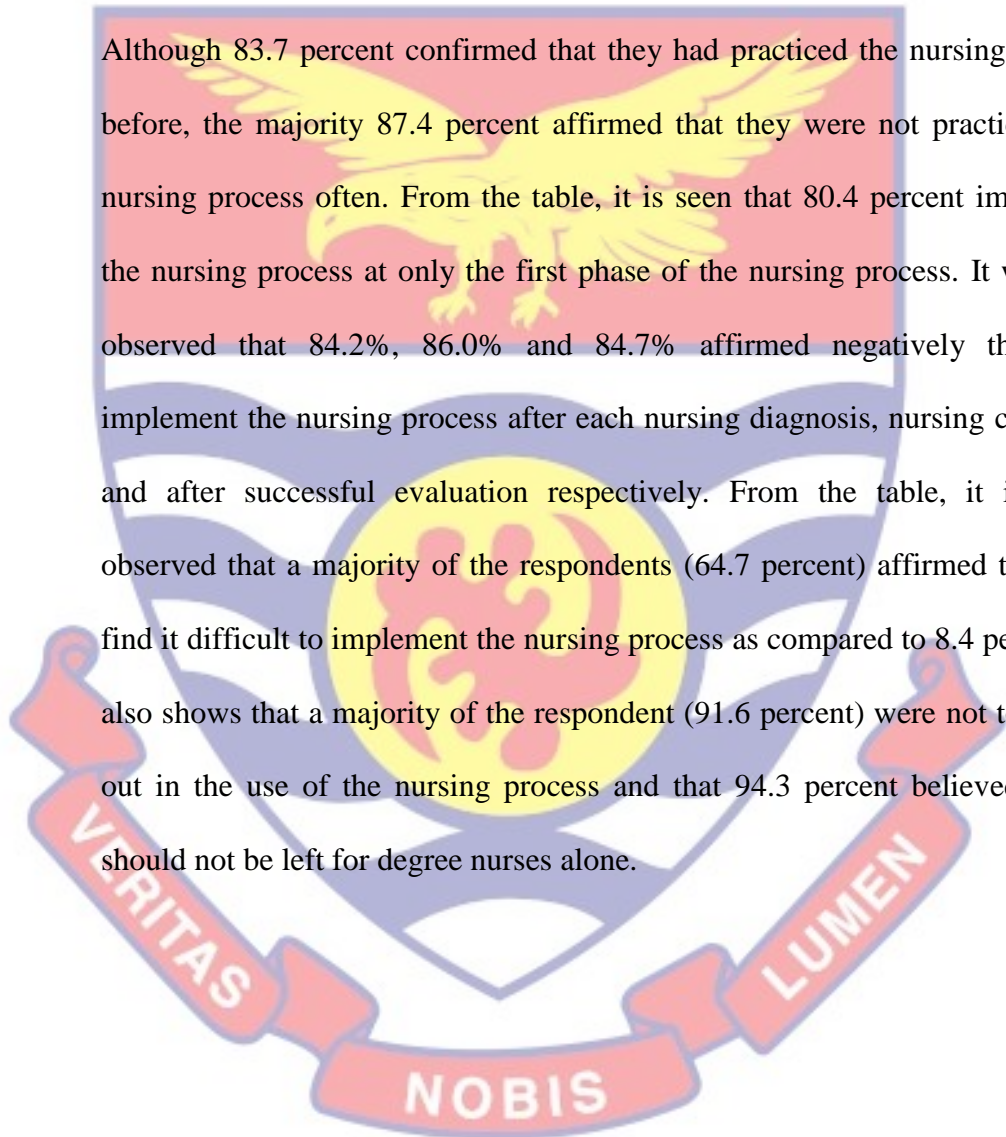


Figure 6: Categories of nurses and frequent practice of the nursing process

Figure 6 shows that a significant ($p < 0.001$) high proportion of the respondents (89.6 percent) do not practice the nursing process often, as compared to 10.4 percent of those who do practice the nursing process often.

In Table 13, it was observed that, a high percentage (86.0 of the total respondents) were willing to apply the nursing process in caring for patients.

Although 83.7 percent confirmed that they had practiced the nursing process before, the majority 87.4 percent affirmed that they were not practicing the nursing process often. From the table, it is seen that 80.4 percent implement the nursing process at only the first phase of the nursing process. It was also observed that 84.2%, 86.0% and 84.7% affirmed negatively that they implement the nursing process after each nursing diagnosis, nursing care plan and after successful evaluation respectively. From the table, it is again observed that a majority of the respondents (64.7 percent) affirmed that they find it difficult to implement the nursing process as compared to 8.4 percent. It also shows that a majority of the respondent (91.6 percent) were not to be left out in the use of the nursing process and that 94.3 percent believed that it should not be left for degree nurses alone.



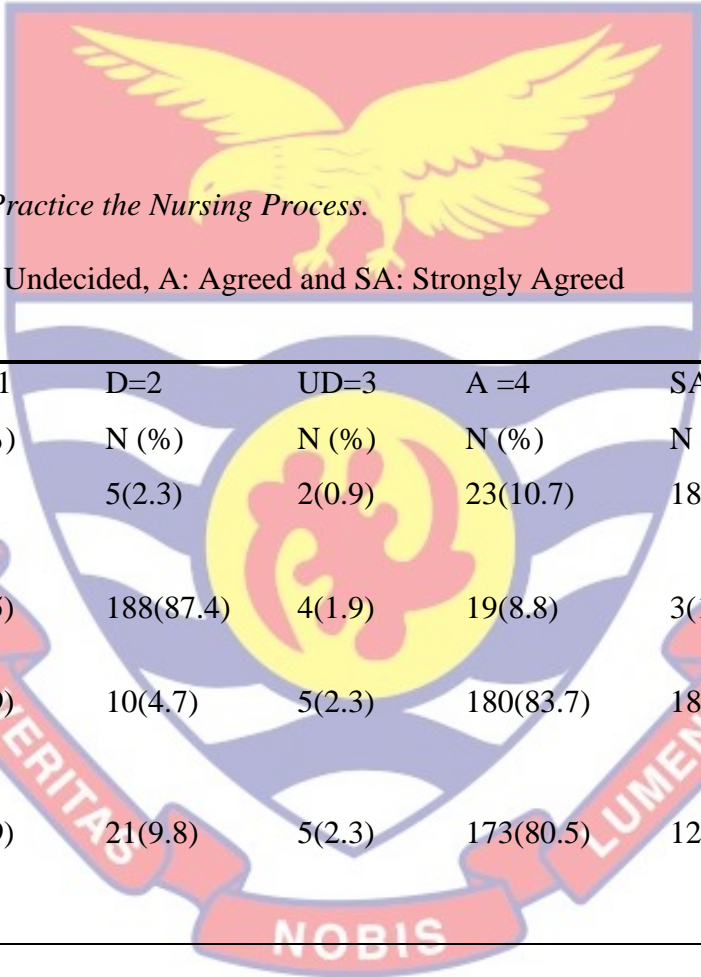
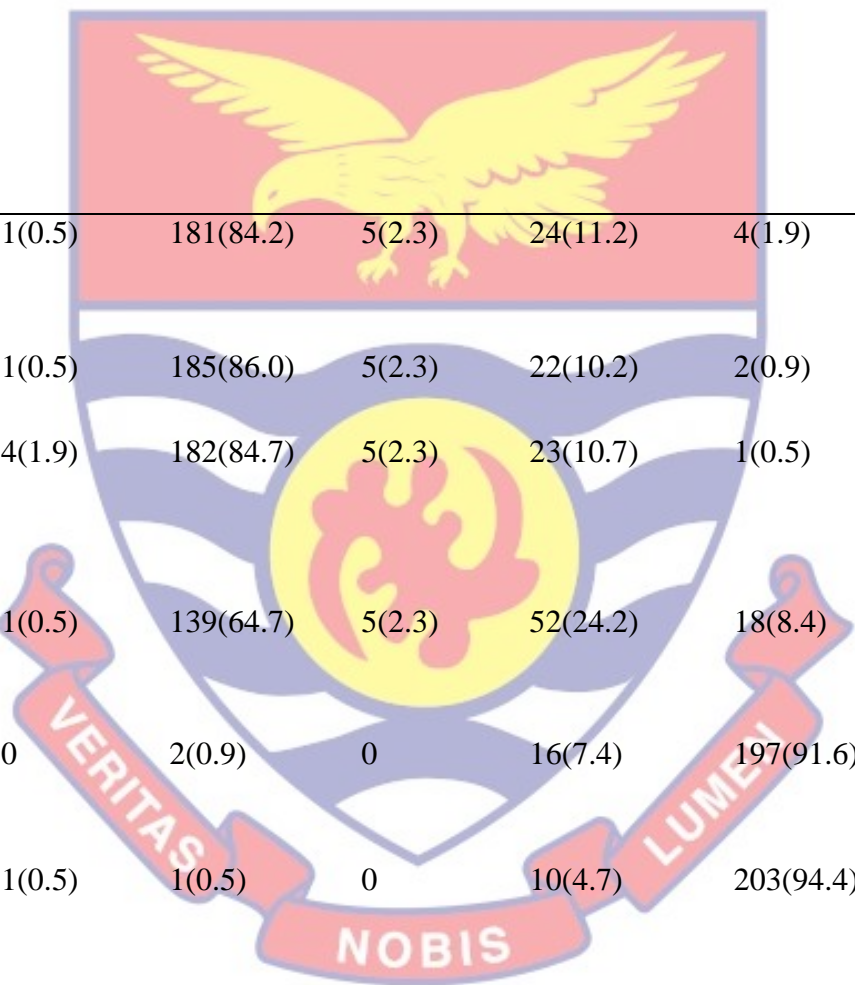


Table 13: *Acceptability and Willingness to Practice the Nursing Process.*

SD: Strongly Disagreed, D: Disagreed, UD: Undecided, A: Agreed and SA: Strongly Agreed

Acceptability & willingness	SD=1	D=2	UD=3	A =4	SA=5	Mean	SD
	N (%)	N (%)	N (%)	N (%)	N (%)		
I am willing to apply the nursing process in the care of my patient	0	5(2.3)	2(0.9)	23(10.7)	185(86.0)	4.8	0.56
I practice the nursing process often	1(0.5)	188(87.4)	4(1.9)	19(8.8)	3(1.4)	2.23	0.67
I have practiced the nursing process before	2(0.9)	10(4.7)	5(2.3)	180(83.7)	18(8.4)	3.94	0.61
I implemented nursing process to the level of assessment	4(1.9)	21(9.8)	5(2.3)	173(80.5)	12(5.6)	3.78	0.77



(Table 13, continued)

I implemented nursing process after each nursing diagnosis	1(0.5)	181(84.2)	5(2.3)	24(11.2)	4(1.9)	2.30	0.75
I implemented nursing process after each nursing care plan	1(0.5)	185(86.0)	5(2.3)	22(10.2)	2(0.9)	2.25	0.68
I implemented nursing process after successful evaluation	4(1.9)	182(84.7)	5(2.3)	23(10.7)	1(0.5)	2.23	0.69
I do not find it difficult to implement the nursing process	1(0.5)	139(64.7)	5(2.3)	52(24.2)	18(8.4)	2.75	1.09
I will not prefer to be left out of this nursing process practice	0	2(0.9)	0	16(7.4)	197(91.6)	4.90	0.39
Application of the nursing process should not be left for those with degree	1(0.5)	1(0.5)	0	10(4.7)	203(94.4)	4.92	0.40

Source: Field data, Clarke (2016)

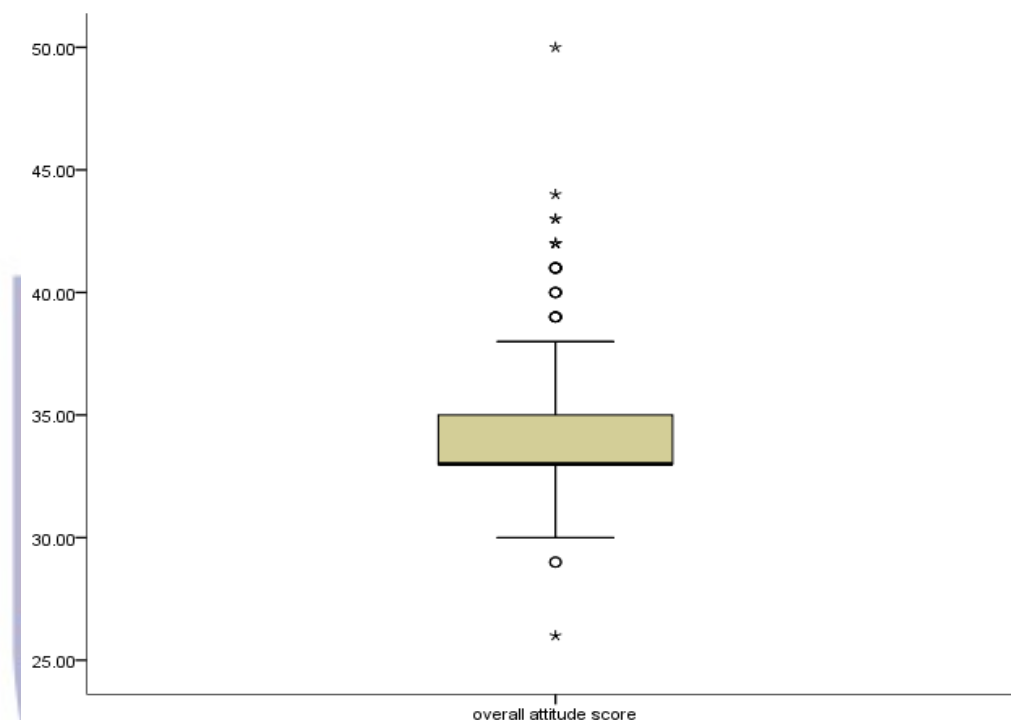


Figure 7: The attitudinal level of nurses towards the nursing process

The overall attitude score from the box plots shows that the average attitude score was not normally distributed across the data sample. This outcome could be due to the outliers seen in the plot. This could be explained in that some of the participants were more knowledgeable and had a more positive attitude than the others. The overall average score of respondent's attitude was found to be 34.11 ± 2.94 . This indicates that the average attitude of the respondents was good; however, their attitude scores was not normally distributed based on the Kolmogorov-Smirnov test (KS statistics = 0.317, $p = 0.001$). This indicates that those with a high level of professional qualification had good knowledge and attitude towards the use of the process. This was done to determine whether attitude is a determinant factor in the practice of the nursing process.

Table 14 shows that respondents' highest professional qualification had a significant effect ($p = 0.006$) on their average attitude scores. It is noted that although their average attitude scores were categorized as good attitude, respondents who had a Bachelor of Science in Nursing with Paediatric Nursing had the highest mean rank as compared to the others.

Table 14: *Effects of Professional Qualification on Attitude towards the Use of Nursing Process*

Professional qualification	N	Mean attitude score	SD	Attitude Score Mean Rank
Registered General Nurse(Diploma)	141	33.51	1.77	100.17
Post Basic diploma with Paediatric Nursing	11	33.27	2.83	90.00
Bachelor of Science in Nursing	48	35.56	3.91	126.80
Bachelor of Science in Nursing with Paediatric Nursing	15	35.73	5.43	134.67
Total	215			

Source: Field data, Clarke (2016) $\chi^2 = (3) = 12.334, p=0.006^*$

Similarly, Table 15 below shows that the ranks of the respondents had a significant impact ($p= 0.013$) on their attitude towards the acceptability and willingness of practicing nursing process. It noted that Principal nursing officers recorded an average attitude score (36.00 ± 5.19) with the highest mean rank as compared to the other nurses. This implies that when one attains this rank, it shows that she has acquired the highest professional level that goes with the acquisition of knowledge of the process as she serves both as a teacher and resource person to other colleagues in the ward.

Table 15: *Effect of Rank of Nurses on Attitude towards Acceptability and Willingness of Practicing the Nursing Process*

Rank	N	Mean	SD	Attitude Score	Mean Rank
Staff Nurse	55	33.38	1.86	97.05	
Senior Nurse	82	33.57	1.92	100.88	
Nurse Officer	49	35.31	3.53	127.19	
Senior Nursing officer	19	34.47	4.46	102.84	
Principal Nursing officer	10	36.00	5.19	142.40	
Total	215				

Source: Field data, Clarke (2016) $\chi^2 = (4) = 12.736, p=0.013^*$

Table 16 below shows that, the duration of work at the present unit did not contribute significantly to the attitude of respondents towards the practice of nursing process. Thus, the non-parametric Kruskal Wallis test shows that there was no significant difference ($p= 0.189$) between their attitude mean ranks with respect to their duration of work at present unit.

Table 16 presents results of correlational analysis between respondents' knowledge scores and attitude scores. It was found that respondent's knowledge level significantly correlated ($r=0.2588, p= 0.001$) positively with their attitude towards the practice of nursing process. This indicates that the level of knowledge for the respondents increased with an increasing good attitude towards the practice of nursing process.

Table 16: *Relationship between Knowledge Scores and Attitude*

Scores

Spearman's rho Correlations			
Variables		Knowledge scores	Attitude score
Knowledge scores	Correlation	1.000	.258**
	Coefficient		
	Sig. (2-tailed)	.	0.001
	N		215
Attitude score	Correlation		1.000
	Coefficient		
	Sig. (2-tailed)		.
	N		215

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

Source: Field data, Clarke (2016)

A goodness of fit test performed shows that there was a significant proportion difference among the responses of respondents in relation to both items evaluated under this table ($p < 0.001$). Thus, a significant higher proportion of respondents (91.2 percent) disagreed to the statement that “applying the nursing process makes no difference in patients’ recovery”. Also, a significant high proportion of respondents (90.7 percent) were certain that the application of the nursing process in patient care has improved patients’ response to care.

Table 17: *Application of the Nursing Process and Patient Recovery*

Items	SD=1	D=2	UD=3	A =4	SA=5	Mean	SD
	N (%)	N (%)	N (%)	N (%)	N (%)		
Applying the nursing process makes no difference in patients' recovery	196(91.2)	6(2.8)	2(0.9)	0	11(5.1)	1.25	0.91
The application of the nursing process in patient care has improved patients' response to care	3(1.4)	0	2(0.9)	15(7.0)	195(90.7)	4.86	0.55

Source: Field data, Clarke (2016)

Table 18 below presents results concerning some of the factors or challenges that respondents perceived to have an effect on the utilization of the nursing process.

Descriptive statistics performed on some related items shows that about 211 (98.1%) of the total respondents were highly positive that the inadequate level of staff is a critical factor that may be a challenge to the effective utilization of the nursing process in the pediatric unit. It was also found that the workload 204 (94.9%) and ratio of nurse to patient on the ward 202 (94.0%) of the total respondents were highly positive when compared to other pressing factors that will impede the use of the nursing process. From the table, it was also observed that lack of in-service training (211 respondents, representing 98.1%), lack of supervision of nurses by the nurse in-charge (215 respondents, representing 100.0%) and uncooperative attitude of colleagues (212 respondents, representing 98.6%) were also highly positive critical factors that impede the effective utilization of the nursing process in the ward. This may be due to the fact that the administration not taking into consideration that the use of the nursing process brings about quality care which in turn yield income for the hospital, thereby failing to organised workshop and in-service training for their staff.

From the table, it was also observed that availability of materials for documentation 191 (88.8%) and availability of time 194 (90.2%) were also high challenges that may impede the effective implementation of the nursing process. The table shows that challenges like experience 177 (82.3%), staff knowledge on the nursing process 165 (76.3%), staff inexperience 183 (85.5%), difficulty in understanding the concept 103 (47.9%) and presence of

parents on the ward during care of the children 137 (63.7%) were of moderate challenges that may impede the effective utilization of the nursing process. Challenges like nature of patient condition 133 (61.9%), staff professional qualifications 158 (73.5%) and gender of the nurses 197 (91.6%) of the total respondents were of low means of impeding the effective use of the nursing process.

Table 18: *Perceived Challenges to Effective Utilisation of the Nursing Process in the Pediatric Unit*

Item No.	Perceived Challenges to Utilisation of Nursing Process Variables	Low =1 N (%)	Medium=2 N (%)	High =3 N (%)	Mean	Sd
1.	Inadequate staff	2(0.9)	2(0.9)	211(98.1)	2.98	0.17
2.	Workload	4(1.9)	7(3.3)	204(94.9)	2.93	0.32
3.	Experience	21(9.8)	177(82.3)	17(7.9)	1.98	0.42
4.	Staff knowledge of the nursing process	23(10.7)	164(76.3)	28(13.0)	2.02	0.49
5.	Availability of materials for documentation	1(0.5)	23(10.7)	191(88.8)	2.88	0.34
6.	Unavailability of time	12(5.6)	9(4.2)	194(90.2)	2.85	0.49
7.	Staff professional qualification (pediatric nurses)	158(73.5)	5(2.3)	13(6.0)	1.29	0.50
8.	Difficulty in understanding the concept. (especially the nursing diagnoses made by other colleagues)	17(7.9)	103(47.9)	95(44.2)	2.36	0.63

Source: Field data, Clarke (2016)

Table 19 below presents the relationship between some perceived challenges variables and the nursing process practice. It was found that respondents' view of workload had a significant association with their practice of the nursing process as shown by the Pearson chi-square test ($p = 0.001$). That is, among those who had ever practiced nursing process, it was found that a significant majority 191 (96.5%) were of the view that the workload is high as compared to those who were of the view that it low. Similarly, among those who had never practiced nursing process, a majority 8 (66.7%) of them also indicated that the workload is significantly high as compared to those who said it low.

With regards to the experience of the respondents, the Chi-square test shows that the experience of the respondents significantly ($p=0.016$) associated with the practice of nursing process. It was also observed that a majority of respondents who had ever practiced nursing had medium level of experience.

Among those who had practiced nursing process before, most of them (82.8%) had medium experience and 8.6% also had high level of experience. This may suggests that the probability of those with medium to high level of experience will be likely to have practiced nursing process before in the course of their work. The data also showed that staff knowledge of the nursing process also significantly ($p=0.002$) associated with the practice of nursing process at the work place. Respondents with medium level knowledge (78.3%) tend to practice nursing process as compared to the proportion with low level of knowledge (11.1%).

Table 19 also shows that there was a significant association ($p = 0.001$) between the unavailability of time and the practice of nursing process and similarly, a difficulty in understanding the concepts significantly associated ($p = 0.010$) with the practice of nursing process.

Table 19: *Relationship between Perceived Challenges and Application of the Nursing Process*

Perceived challenges	Response	Nursing Process practice status		χ^2	P-value
		Never Practiced before (%)	Practiced before (%)		
Inadequate staff	Low	0	1(0.5)	0.912	0.184
	Medium	0	2(1.0)		
	High	12(100.0)	195(98.5)		
Workload	Low	1(8.3)	3(1.5)	21.74	0.001*
	Medium	3(25.0)	4(2.0)		
	High	8(66.7)	191(96.5)		
Experience	Low	4(33.3)	17(8.6)	8.320	0.016*
	Medium	8(66.7)	164(82.8)		
	High	0	17(8.6)		
Staff knowledge of the nursing process	Low	1(8.3)	22(11.1)	22.42	0.001*
	Medium	4(33.3)	155(78.3)		
	High	7(58.3)	21(10.6)		

Source: Field data, Clarke (2016)

(Table 19, continued)

Availability of materials for documentation	Low	0	1(0.5)	12.33	0.002*
	Medium	5(41.7)	18(9.1)	7	
	High	7(58.3)	179(90.4)		
Unavailability of time	Low	3(25.0)	9(4.5)	14.25	0.001*
	Medium	2(16.7)	7(3.5)	4	
	High	7(58.3)	182(91.9)		
Staff professional qualification (pediatric nurses)	Low	10(83.3)	143(72.2)	0.832	0.660
	Medium	2(16.7)	50(25.3)		
	High	0	5(2.5)		
Difficulty in understanding the concepts	Low	3(25.0)	14(7.1)		
	Medium	8(66.7)	91(46.0)	9.295	0.010*
	High	1(8.3)	93(47.0)		

Source: Field data, Clarke (2016)

Table 20 shows the strategies for promoting the implementation of the nursing process. Examining some of the strategies that may promote the implementation of the practicing of the nursing process, it was found that about 97.0 percent of the participating respondents were strongly of the view that a regular supply of nursing process material will improve the practice of the nursing process. A higher proportion of respondents (98.6 percent) were also of the strong view that the act of motivating nurses to have interest in writing and implementing nursing process will be a significant ($p < 0.05$) factor to contributing to the implementation of the nursing process.

From the table, it is seen that a majority of the respondents were of strong view creating a standardized format for writing the nursing process (99.1 percent) and handing over nursing care plan at the end of each shift (99.1

percent) will help improve the use of the nursing process. Supervising nurses regularly by ward in-charges (96.7 percent) and employing more nursing staff into the pediatric unit (95.3 percent) as compared to training of more pediatric nurses (65.6 percent) of the total respondents were also considered as factors, as these nurses may gain experience as they continue to work in the unit.



Table 20: *Strategies for Promoting the Implementation of Nursing Process*

Strategies for promoting the implementation of nursing process	SD=1	D=2	UD=3	A =4	SA=5	Mean	SD
	N (%)	N (%)	N (%)	N (%)	N (%)		
Regular supply of nursing process materials	2(0.9)	1(0.5)	0	3(1.4)	209(97.2)	4.93	0.44
Motivating nurses to have interest in writing and implementing nursing process.	0	1(0.5)	0	2(0.9)	212(98.6)	4.98	0.23
Employing more nursing staffs into the pediatric unit	1(0.5)	1(0.5)	0	8(3.7)	205(95.3)	4.93	0.39
Encouraging more nurses to be trained as pediatric nurses	1(0.5)	15(7.0)	0	141(65.6)	58(27.0)	4.12	0.76
Encouraging nurses to cooperate among each other when writing nursing process.	0	3(1.4)	0	78(36.3)	133(61.9)	4.78	2.75
Regular supervision of nurses by head nursing services	0	1(0.5)	0	6(2.8)	208(96.7)	4.96	0.26
Creating a standardized format for writing nursing process	0	1(0.5)	0	1(0.5)	213(99.1)	4.98	0.22
Handing over nursing process at the end of each shift	0	1(0.5)	0	1(0.5)	213(99.1)	4.98	0.22

Source: Field data, Clarke (2016)

DISCUSSION OF MAJOR FINDINGS

The study sought to assess the application of nursing process in Pediatric care and its effects on the recovery of children at Korle-Bu Teaching Hospital and Princess Marie Louis Hospitals in Accra. The results are presented and discussed in relation to the research questions that guided the study.

The study revealed an in-depth knowledge of the factors that impede the use of the nursing process by the nurses in these two hospitals. A six-sectioned questionnaire was used to elicit information from respondents and the data were analysed quantitatively. The results of the study were presented under the following research questions which guides the focus of discussion:

1. What is the level of knowledge of the nurses on the nursing process?
2. What aspects of the nursing process do nurses base their care on, the willingness and acceptability to use it?
3. What are the attitudes of nurses towards the application of the nursing process in the care patients?
4. What are the factors that hinder the application of the nursing process in Pediatric care?
5. What are the best strategies to improve the use of the nursing process in care of patient?

Socio-demographic data of respondents

Out of the 220 questionnaires distributed among the study populations, 215 were filled completely and returned. The response rate was 97.72 percent.

It was found that between the two hospitals, the female staff members were dominant than the males, a finding that is similar in the practice of nursing worldwide (Stone, Clarke, Cimiotti & Correa-de-Araujo, 2005). This could also be from the fact that females prefer the nursing profession than the males. However, there are gradual increasing male passions for the nursing profession.

A majority of the respondents were within the age range of 30-34 years, and this range was followed by those between 24 and 29 year. The age ranges found here were within the age bracket observed among professional health care workers all over the world (Stone, Clarke, Cimiotti & Correa-de-Araujo, 2005). In terms of professional qualification, it was seen that the nurses who had the highest percentage were Registered General Nurses (RGNs). This percentage was significantly high compared with those with additional qualifications such as Bachelor of Science in Nursing, Post diploma with Pediatric Nursing and Bachelor of Science in Nursing with Pediatric Nursing, a finding that reflects the mandatory nature of the Registered General Nursing profession in Ghana. The hospitals used for the study were the Korle-Bu Teaching Hospital and Princes Marie Louis Hospital. A majority of the respondent were from KBTH for it is a teaching and resource center and usually more demanding on nurses' resources compared to Princes Marie Louis Hospital.

What is the Level of Knowledge of the Nurses on the Nursing Process?

The findings of this study indicated that knowledge is one of the most determinant factors for application of the nursing process. The study revealed that a majority of the respondents had moderate knowledge, in that, 93.0 percent of the

respondents had knowledge and 2.3 percent of the respondents had low knowledge of the nursing process. The variation here could be due to the knowledge the nurses acquired from school and advancement in profession that nurses had attained during the course of their profession.

In a similar observation, it was found that a significant majority of the total respondents were strongly of the view that they had knowledge of the Nursing Process from the training school they attended. It was also found that a majority of the total respondents did not support the fact that they got the knowledge of the Nursing Process from seminars and workshop, as they believed that workshops are seldom planned. This study agrees with the findings of Afolayan et al. (2013) which showed that 92 percent of respondents had good knowledge, while only 8 percent of respondents exhibited poor knowledge of the nursing process and this knowledge was acquired mainly from the training institutions.

It was likely that the training institutions support the acquisition of knowledge of the nursing process among the respondents. The study was also in line with a study conducted by Zewdu and Mersha (2015) which shows that 23.34 percent of respondents were highly knowledgeable and 44.9 percent were moderately knowledgeable while 31.63 percent had no knowledge on the nursing process. In their study, the highly knowledgeable nurses were 8.78 times more likely to apply the nursing process than nurses who were not knowledgeable. Again, those nurses had moderate knowledge were positively associated with

implementation of nursing process. This shows that knowledge is very important to the utilisation of the nursing process.

Another study conducted by Hagos et al. (2014) indicated that knowledge was one of the most determinant factors for the application of the nursing process. According to their study, 90 percent of the respondents scored below 50 percent on knowledge-related questions. According to the study, the respondents had their knowledge from the training school and some from workshops.

It was also observed that a significant number of the total respondents sided with the fact that the current implementation of the nursing process was different from what was being taught in school. This was in line with a study conducted in Mexico by Lima and Kurcgant (2006) which showed that there was a problem in the application of the nursing process due to variations in what the nurses were taught at school and what they were applying at hospitals. Furthermore, a study conducted in Brazil by Pokorski et al. (2009) showed that knowledge was one of several factors that interfered in the efficient implementation of the nursing process.

Again, a majority of respondents had practised the nursing process before and so they were conversant with the process in caring for patients. Majority of them strongly disagreed with the use of the nursing process in caring for their patient. This was in line with a study conducted in Northern Ethiopia by Hagos (2014) where 32.7 percent were implementing the nursing process while 67.3 percent of them were not implementing nursing process.

From the study, the overall average score of respondent's level of knowledge was good since the level was above 30 score. However, their knowledge level scores were not normally distributed due to the effect of the two outliers observed. The few nurses who had high knowledge were due to the fact that they were continuously upgrading their knowledge on the nursing process.

The present study was however did not corroborate the findings of the study conducted by Pokorski et al. (2009) which indicated that knowledge is one of the most determinant factors for application of the nursing process. In their study, about 90 percent of the respondents had scored below 50 percent on knowledge related questions. Acquiring good knowledge is one of several factors that interfere with the effective implementation of the nursing process (Repetto & Souza, 2005).

From the study, it could be deduced that the nurses still lack knowledge as a majority of the respondent had moderate knowledge, owing to two respondents who scored very high on the knowledge related questions and to use the nursing process one needs knowledge to ensure effective implementation.

The knowledge of participants on Nursing Process also had significant association between type of nurse and their category of knowledge level in relationship with its application. It was observed that the pediatric nurses do not have nurses under the category of low knowledge which could be due to their specialty as pediatric nurses. Because of their specialty, they had acquired good knowledge of the nursing process for effective implementation. Therefore,

specialization in pediatric nursing does offer knowledge difference related to the application of the nursing process in the care of pediatric patients. From the study, it can be deduced that gender, age, rank and years in service do not show any additional knowledge of applying the nursing process. All trained nurses at the pediatric unit at KBTH and PML acquired the knowledge of the nursing process either through the training schools or seminars/workshops, and indicated their willingness to apply it in the care of their patients.

The findings of the study show that among the socio-demographic characteristics, the nurses with highest professional qualification (Bachelor of Science in Nursing with Pediatric Nursing) had high knowledge than the other nurses with other qualifications. This agrees with the study by Hagos et al. (2014) which shows that among the socio-demographic characteristics, educational status has a statically significant relationship with knowledge of nurses on nursing process. It was also found in their study that Bsc nurses had better knowledgeable than Diploma nurses.

The knowledge of the respondents on nursing process has a significant relationship with their educational status. From the study, comparing the knowledge of Bsc nurses with pediatrics on nursing process to the knowledge of diploma nurses, we see that the level of knowledge is higher in the Bachelor of Science with Pediatric Nursing due to the highest professional qualification of the Bsc (Pediatric Nursing) nurses. However, the rest of the demographic characteristics have no statistically significant association with knowledge on nursing process.

What Aspects of the Nursing Process steps do Nurses Base their Care on, the Willingness and Acceptability to Use it?

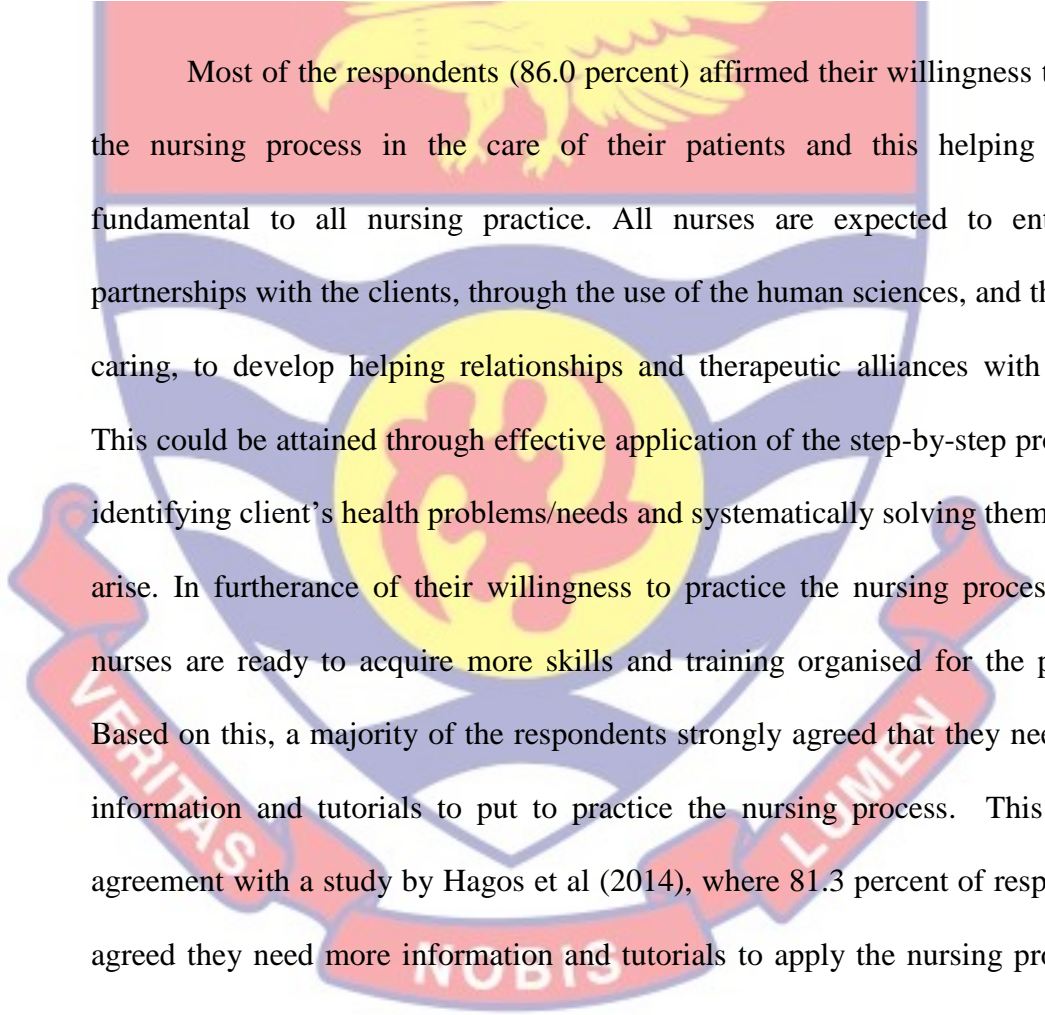
From the study, it was found that, higher percentages of the total respondents were willing to apply the nursing process in caring for patients. This was in line with a study conducted by Maria et al. (2003), where a majority of the respondents indicated their readiness to apply the nursing process. Although, a majority of them confirmed that they had practiced the nursing process before, a majority affirmed they did not practice the process very often. This finding however, differs from those of a study conducted by Hagos et al. (2014) which showed that all the respondents in the study reported that they did not apply any of the nursing process steps. However, Emeh (2007) showed that 64.22 percent of respondents often implement nursing process, 27.52 percent were not always implementing the nursing process while 8.26 percent never implement it.

From the study, we see that about 80.4 percent of the respondents implemented the nursing process only at the assessment phase, where the nurse collects information about the patient through interview and observation, to find out the needs of the patient. This is in line with the theoretical framework for this study, that is, Ida Jean Orlando's (1990) Nursing Process Theory. Orlando's theory uses the term "need" while discussing individuals finding themselves in the need of nursing care in a situation. The first step of the process is where the nurse interacts with the patient to find out his or her problems in order to address these problems or needs.

The study also observed that out of the 215 respondents, only 11.2%, 10.2% and 10.7% affirmed positively that they implemented the nursing process after each nursing diagnosis, nursing care plan and after successful evaluation respectively. These findings contradicted the study done in Nigeria by Use a Smart Nursing Process for your care, (2008–2010) which revealed that 43.12% of the respondents implemented nursing process at the level of nursing care plan. About 76 percent of respondents were at the level of nursing diagnosis while 2.75 percent of respondents were at the level of evaluation. The findings suggested that the nursing process was not applied systematically in a scientific way in the hospitals as described in Orlando's theory as a reflective continuous cycle that shows recording at each stage in the process (Schmieding, 2006). This was due to the difficulty in implementation of the nursing process as confirmed by a majority of the respondents.

Also, a majority of the respondents affirmed the fact that, they were not practicing the nursing process often. This study, in this regard, varies with the study conducted by Pokorski et. al. (2009) in University of Brazil, who reported that a majority of the respondents often implemented nursing the process, with a lesser number of respondents who do not always implement the nursing process. The nurses use some aspects of the nursing process, for instance, an assessment was performed in 98.7 percent of cases; diagnosis was made in 90 percent of cases; and planning was made in 74.8 percent of cases.

The study also varies from a study conducted by Lee (2005) in Central Taiwan, who revealed that nurses generally followed the nursing process and charting sequence to complete care plans. The variation may be due to difference in the study areas, the development of the nursing profession, resource and technological variations, government commitment, level of nursing practice, and lack of clear nursing standard.

The logo of the University of Cape Coast is a watermark in the background. It features a shield with a yellow sun at the top, a blue banner across the middle, and a red banner at the bottom. The shield is divided into four quadrants by a blue cross. The text 'VERITAS' is on the left banner, 'LUMEN' is on the right banner, and 'NOBIS' is on the bottom banner.

Most of the respondents (86.0 percent) affirmed their willingness to apply the nursing process in the care of their patients and this helping role is fundamental to all nursing practice. All nurses are expected to enter into partnerships with the clients, through the use of the human sciences, and the art of caring, to develop helping relationships and therapeutic alliances with clients. This could be attained through effective application of the step-by-step process of identifying client's health problems/needs and systematically solving them as they arise. In furtherance of their willingness to practice the nursing process, these nurses are ready to acquire more skills and training organised for the purpose. Based on this, a majority of the respondents strongly agreed that they need more information and tutorials to put to practice the nursing process. This was in agreement with a study by Hagos et al (2014), where 81.3 percent of respondents agreed they need more information and tutorials to apply the nursing process in patients' care.

From the study, a majority of the respondent 91.6 percent were of the view not be left out in the use of the nursing process which were also noted by Hagos et

al.(2014) where 81.3 percent of the respondents disagreed that they should be left out of the nursing process practice. In the study, a majority disagreed to the view that the application of the nursing process should be left for those with degree in Nursing. Similarly, a majority of the respondents disagreed that the process should be left for degree nurses alone. The study was also in consistence with the conducted by Hagos et al. (2014), indicating that slightly above 60 percent of the respondents showed their disagreement that the nursing process should be used only by Bachelor of Science and above nurses.

The application of the nursing process had transformed nursing practice, set the standard of care and improved patients' outcomes (Mason & Attree, 2008). Again, a majority of the respondents disagree to the view that applying the nursing process makes no difference in patients' recovery and support of the assertion that the nursing process improves patients' response to care. Hagos et al. (2014) noted that most of the respondents were of the view that the nursing process ensures provision of quality nursing care. Furthermore, the respondents either strongly agreed or agreed that the aim of the nursing process is appreciable and concluded they were convinced that nursing process would work if applied in patient care.

This study was also in consistence with a study by Pokorski, et al. (2009) where the majority of the respondents disagreed that applying the nursing process makes no difference in patients' recovery. Rather, its application enhanced the nurse-patient therapeutic relationship that improves patient's response to care; thus making the nurse a better friend, surrogate and professional as speculated.

What are the attitudes of nurses towards the application of the nursing process in the care of patients?

The overall average score of respondent's attitude was good; however, their attitude scores was not normally distributed which indicates that those with good knowledge have the willingness to practice the nursing process. Hagos et al. (2014), indicated that nurses at the study area have positive attitude towards the nursing process. Similarly, about 99.5 percent of the respondents had positive attitude. Also, a study conducted by Maria, et al. (2003), shows that the mean attitude of nurses towards the nursing process was 73.57 percent. This was good indicating that attitude was a determinant for application of the nursing process. This implies that, the nurse has to develop the willingness and accept to use the process in the care of patient in order to render effective and efficient nursing care to their patients.

A majority of the respondents (94.3 percent) indicated to have practiced nursing process before as compared to 5.7 percent who had never practiced nursing process before and their highest professional qualification had a significant effect on their average attitude scores. It was found that although their average attitude scores was categorised as good attitude, respondents with Bachelor of Science in Nursing with Pediatric Nursing had the highest mean rank as compared to the others. This was as a result of acquiring the Bsc in Nursing with a specialty in Pediatrics. As nurses move through the professional career, they gain more knowledge into the concept of the nursing process, making them

acquiring good attitude towards the concept as it helps brings about quality of care.

From Table 5, the co-relational analysis between respondents' knowledge and attitude scores of respondents, indicated that knowledge level significantly correlates positively with their attitude towards the practice of nursing process. This indicates that as respondents' level of knowledge increased, there was an increasing good attitude towards the practice of nursing process because they gain more understanding into the concept. The study indicated a significant association between the categories of nurses. It was realised that a majority of Non-pediatric nurses have rather practiced nursing process before as compared to Pediatric Nurses.

This may be due to the fact that the nursing process forms the basis for every registered nurse in rendering care for the patient. On the other hand, there was no association of attitudes of the respondents with the socio-demographic characteristics. That is, the attitude of nurses towards the nursing process was not affected by the socio demographic characteristics.

What are the Factors that Hinder the Application of the Nursing Process in Pediatric Care?

Despite having good theoretical knowledge and willingness to apply the nursing process in the care of their patients, the nurses at the Pediatric Units of the KBTH and PML faced several challenges. It was noted that experience of the respondents was significantly associated with the practice of Nursing Process. It was observed that a majority of respondents who had not practiced nursing

process before had no experience. Among those who had practiced nursing practice before, most of them had quite an experience in the nursing process. This may suggest, the probability that those with some level of experience will be likely, to have practiced nursing process before in the course of their work.

The finding also shows that knowledge of staff members about the nursing process also significantly associated with the practice of nursing process at the work place. Further, respondents with substantial level of knowledge tend to practice nursing process much more than those with low level of knowledge. There was also a significant association between the unavailability of time and materials for documentation to the practice of nursing process. Similarly, the difficulty in understanding the concepts significantly associated with the practice of nursing process.

The findings of the present study were consistent with the findings of Zewdu and Mersha (2015), who found that the major challenge to the application of the nursing process was knowledge of nurses. Although the trained nurses had good theoretical knowledge of the process, it had not been translated into practice. From the study, their inadequate knowledge and experience had affected the application of the nursing process in the hospital.

Yet another challenge affecting the utilisation of the nursing process was unavailability of materials for documentation which are in line with the study. The needed charts for effective practice of nursing care in the hospital were lacking. Application of the nursing process requires steady supply of materials for

observations, monitoring, assessment and documentation, all of which were observed to be in short supply.

Besides, the study found workload and unavailability of materials for documentation and unavailability of time as great challenges that may impede the effective implementation of the nursing process. This finding also corroborates the study done in Nigeria which employed a Use a Smart Nursing Process for your care (2010). That study revealed that respondents' lack of regular supply and less supply of nursing process materials as factors affecting implementation of nursing process. Emeh (2007) equally identified these factors which he called impediments to effective implementation of nursing process.

A majority of the respondents were highly positive that the inadequate staff and staff professional qualification were not a critical factor that may be a challenge to the effective utilisation of the nursing process in the Pediatric Unit. The analysis of the study also agrees with the study carried out by Beck in United Kingdom (2006) which showed that there was a limitation in the number of nurses working in the hospital, but there was a regular supply of nursing process material to ensure increase in the level of compliance on the part of nurses. The study shows quite a number of respondents' indicating lack of interest by nurses affected nursing process implementation most. The irregular supply of nursing process materials also affected the nursing process implementation.

What are the best strategies to improve the use of the nursing process in care of patient?

Examining some of the strategies that may promote the implementation of the practicing of the nursing process, we see that most of the participating respondents were strongly of the view that regular supply of nursing process material will improve the practice of the nursing process. A higher proportion of respondents were also of the strong view that motivating nurses to have interest in writing and implementing nursing process will be a significant factor to contributing to the implementation of the nursing process.

From the study, a majority of the respondents were of strong view to creating a standardized format for writing the nursing process and handing over nursing care plan at the end of each shift will help improve the use of the nursing process. Regular supervision of nurses by ward in-charges and employment of more nursing staff into the pediatric unit may help in efficient use of the nursing process as these nurses may gain experience from their continuous working in the unit.

These findings from the study were in consistence with the study by Hagos, et al. (2014) on the strategies promoting the implementation of nursing process indicating that the respondents suggested regular supply of nursing process materials and motivating nurses to have interest in writing and implementing nursing process. Some also suggested regular supervision of nurses by the head nurse, handling over nursing process at each shift, continuous

retraining of nurses on nursing process in the continue education, and encouraging cooperation among nurses will aid in the nursing process implementation.

The majority of the respondents who had knowledge on the nursing process attempted using it, however, they stopped because of the challenges they faced. The respondents indicated some major factors which hindered them from using the nursing process. These included, inadequate staff, heavy work load, time constraints, inadequate equipment and supplies and lack of co-operation from other staffs. These factors fall in line with Laryea's (1996) findings on barriers to implementation of nursing process in Ghana.

It was well known that one of the limitations of the nursing process is that it needs ample of resources especially time which most of the respondents mentioned. From the study, it can be deduced that the main problems for applying the nursing process were resource scarcity, time shortage and lack of adequate knowledge. There was shortage of material and staff in addition to lack of motivation to apply the nursing process. Lack of training on application of the nursing process was one of the factors why nurses lack adequate knowledge to apply the nursing process therefore the need ensure continuous in-service training for the staffs.

The finding was comparable to a study done in Nigeria with lack of regular supply and no supply of nursing process material identified to be factors affecting implementation of nursing process. To put the nursing process in practice, it requires adequate time, adequate nursing staff and materials.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

Introduction

This chapter begins with a summary of the study and research question that guided it. Key findings and conclusions from the data analyses are also presented in this chapter. In addition, certain findings and recommendations for further research are put forward.

The findings of the study had been categorized into five (5) sections, each relating to the research questions that underpinned the study. The first section deals with the knowledge base of the professional nurse on the nursing process. The second section focuses on whether the professional nurse give nursing care based on the nursing process. The third section examines the attitudes of the nurses. The fourth section examines the factors that affect effective implementation of the nursing process and fifth section investigates the strategies to the effective implementation of the nursing process on the ward.

In carrying out this study, a simple random sampling technique was used to select the participants. This design was deemed appropriate because it ensured among other things that the nurses sampled for the study were equally represented.

Summary of Key Findings

The study sought to assess the application of nursing process in pediatric care and its effects on the recovery of children at KBTH and PML Hospitals in Accra. The

results are presented and discussed in relation to the research questions that guided the study.

The study revealed an in-depth knowledge of the factors that impede the use of the nursing process by the nurses in these two hospitals. The research questions were analysed quantitatively using the six areas captured on the instrument. The results of the study were presented under the research questions which guided the focus of the discussion. Based on the analysis of the study, it was found that some of the respondent had higher knowledge; others had moderate knowledge and few had low knowledge of the nursing process.

The study further showed that among the socio-demographic characteristics that were tested, it was nurses with highest professional qualification (Bachelor of Science with Pediatric Nursing) who were more knowledgeable than the rest of the nurses with other qualifications. However, the rest of the demographic characteristics had no statistical significant association with knowledge on nursing process.

From the study, the overall average score of respondent's attitude was high, indicating that the average attitude of the respondents was good; however, their attitude scores was not normally distributed. The positive attitude towards the nursing process by the respondents indicates that nurses' attitude is a determinant factor affecting the application of nursing process. From the findings of the study, there was no association of attitudes of the respondents with the socio-demographic characteristics, meaning the nursing process was not affected by the socio-demographic characteristics.

It was found that, a high percentage of the respondents were willing to apply the nursing process in caring for patients. Although a majority confirmed that they have practiced the nursing process before, they were not practicing the nursing process often. It was also observed that out of the 215 respondents 80.4 percent implemented the nursing process. Others affirmed positively that they implemented the nursing process after each nursing diagnosis, nursing care plan and after successful evaluation. A significant majority of the respondents strongly agreed with the fact that they need more information and tutorials to put to practice the nursing process.

Again, a majority of the respondents wished not be left out in the use of the nursing process and also disagreed that the nursing process should be left for degree nurses alone. A significant proportion of respondents disagreed to the statement that “applying the nursing process makes no difference in patients’ recovery” and also they were certain that the application of the nursing process in patient care improves patients’ response to care.

In analysing some of the factors that affect the effective implementation of the nursing process in the care of the patients, the perceived challenges were analysed. Despite having good theoretical knowledge and willingness to apply the nursing process in the care of their patients, the nurses at the pediatric Units of the two hospitals under study faced several challenges.

With regards to the study’s findings, it was revealed that the experience of the respondents, were significantly ($p=0.016$) associated with the practice of Nursing Process. It was observed that a majority of respondents who have not

practiced nursing process before had medium experience or no experience. Among those who have practiced nursing process before, most of them had some level of experience with a few having high level experience. This may suggest that, those with medium to high level of experience are likely to have practiced nursing process before in the course of their work.

The findings also showed that staff knowledge of the nursing process is also significantly associated with the practice of nursing process at the work place. Respondents with medium level knowledge tend to practice nursing process than those with low level of knowledge. There was a significant association between the unavailability of time and materials for documentation to the practice of nursing process. Similarly, the difficulty in understanding the concepts was significantly associated with the practice of nursing process.

Investigating some of the strategies that may promote the implementation of the practicing of the nursing process, it was seen that most of the respondents were strongly of the view that regular supply of nursing process material will improve the practice of the nursing process. A higher proportion of respondents were also of the strong view that motivating nurses to have interest in writing and implementing nursing process will be a significant factor to the implementation of the nursing process.

Again, a majority of the respondents were of strong view that creating a standardised format for writing the nursing process and handing over nursing care plan at the end of each shift will help improve the use of the nursing process. Regular supervision of nurses by ward in-charges and employing more nursing

staff into the pediatric nurses may gain experience as they continue to work in the unit.

Participants reported that factors such as shortage of resources, lack of knowledge, and lack of training affected the application of the nursing process. Also, a regular supply of nursing process materials, lack of cooperation among nurses, lack of supervision of nurses by head nurses and no format for writing nursing process were all factors affecting the nursing process implementation.


Implications of the Study to Nursing Care

The nursing process is the framework to be fully implemented by every nurse in order to renders holistic, effective, evidence based and rendering quality nursing care to patients in order to make them more satisfied. The effective use of the nursing process results in competence and enhanced patient recovery. It makes the nurse an expert in care and increases or deepens the nurse-patient relationship. This is very useful to the patient, nursing profession, the hospital management and government through awareness of her health policies to the people. The nursing process becomes scientific and systematic especially in the nursing practice and in the rendering health care service in general. Also, when the nursing process is well applied by every nurse, it enhances the image of nursing as it brings about clients' satisfaction as a result of rendering individualized nursing care


CONCLUSION

The findings from the study revealed that a majority of respondent had moderate knowledge on the nursing process but could not utilized it in planning

the care of their patients because of the problems they encountered in attempt to use the process. From the study, the overall average score of respondent's attitude was good. The positive attitude towards the nursing process by the respondents indicates that nurses' attitude is not a factor affecting the application of nursing process.



Further, a majority of the respondents were willing to apply the nursing process in caring for patients. Although a majority confirmed they had practiced the nursing process before, most of them affirmed to the fact that they were not practicing the nursing process often where only a few were implementing the nursing process often. The study also revealed that a majority of the respondents implemented the nursing process only at the assessment phase as compared to the rest of the phases.



Also, the findings shows that nurses sampled for the study saw the nursing care plan to be important as an indication that the nursing care plan plays an important role in health delivery and must be strengthened. From the study, a majority of the respondents wished not be left out in the use of the nursing process and disagreed that the nursing process should be left for degree nurses alone and also a significant high proportion of respondents were certain that the application of the nursing process in patient care improves patients' response to care.

The problems which hinder the use of the nursing process included inadequate staff and logistics, lack of co-operation from other staffs and time consuming. The implication for this study is that given adequate staff, logistics

and with some co-operation among staff, the nursing process can be used to plan and care for patients.

The result that nurses are not motivated enough to use the nursing care plan may be an indication that either they do not receive the needed training, supervision and support from their supervisors to use them. It might also mean that these services are not readily available in some of the hospitals. Another constraint identified was shortage of nursing staff to implement nursing process.

Recommendations

This study was an explorative type and it sought to examine which factors impede the use of nursing process in the care of patients. Based on the findings of this research, the following recommendations are offered:

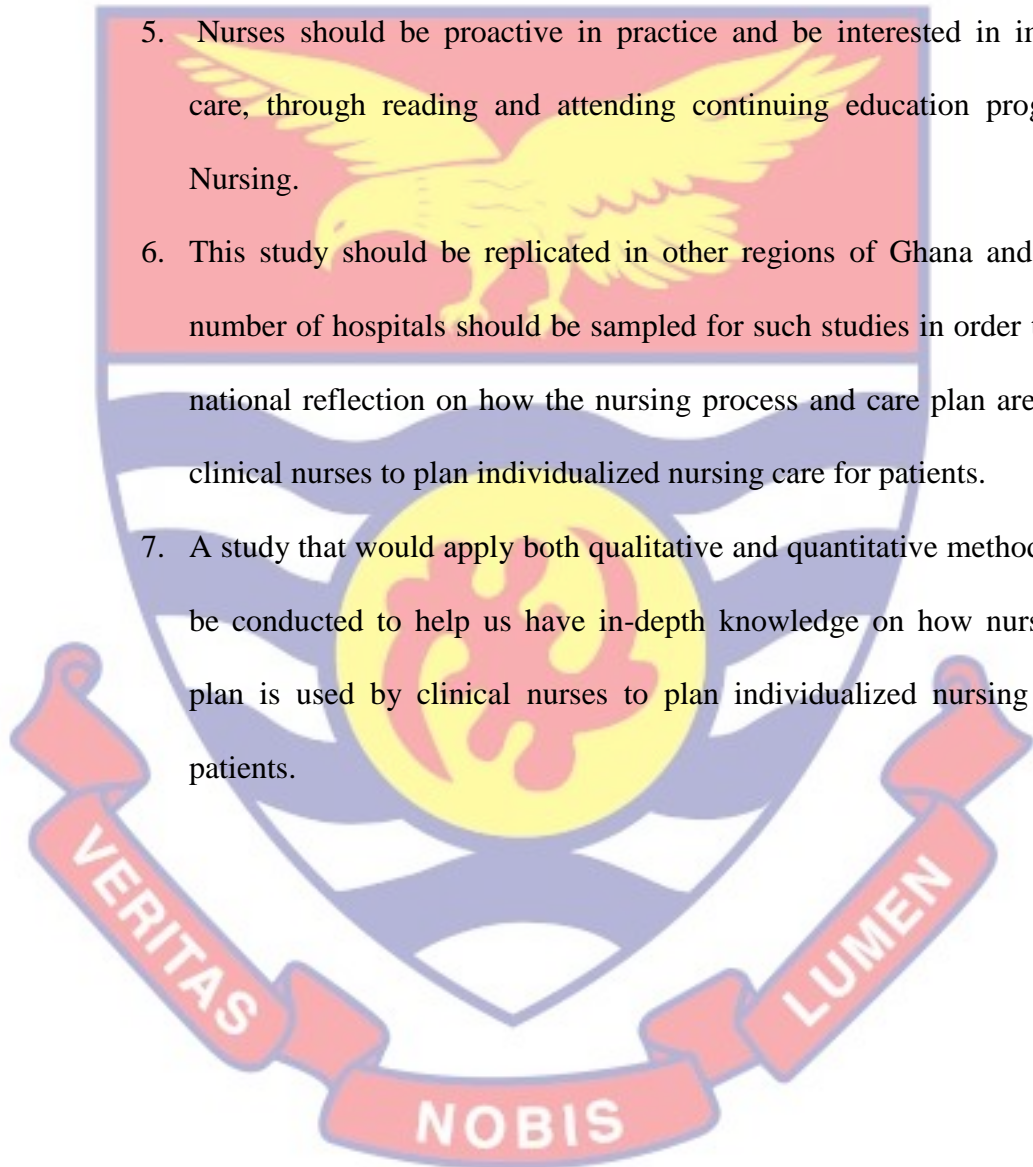
1. As a result of the findings on the positive perception exhibited by nurses, on the nursing care plan, health educators and high ranking members in the health sector should capitalize on this positive perception and help nurses improve upon their positive perception of the nursing care plan.
2. Workshop and in-service training sessions by the Nursing and Midwifery Council of Ghana (NMC) on the use of the nursing process need to be organized for the staffs and students as it forms part of the curriculum of the training schools.
3. The Directorates of Nursing in the nation should collaborate with the NMC in ensuring the smooth practice of the nursing process through supervision of nurses at work.

4. Hospital managements including the medical directors should be enlightened on the benefits of the nursing process in terms of patients' outcome. This will enhance regular supply of the needed materials for the practice of the nursing process.

5. Nurses should be proactive in practice and be interested in improving care, through reading and attending continuing education programs in Nursing.

6. This study should be replicated in other regions of Ghana and a larger number of hospitals should be sampled for such studies in order to have a national reflection on how the nursing process and care plan are used by clinical nurses to plan individualized nursing care for patients.

7. A study that would apply both qualitative and quantitative methods should be conducted to help us have in-depth knowledge on how nursing care plan is used by clinical nurses to plan individualized nursing care for patients.



REFERENCES

- Ackermann, A. (2001). *Critical thinking: The nursing process*. Retrieved from www.mbon.org/commissions
- Adejumo, P. O., & Olaogun, A. A. (2009). Nursing process: A tool for holistic approach to nursing care. *West African Journal of Nursing*, 20(1), 34-39.
- Afolayan, J. A., Donald, B., Baldwin, D. M., Olayinka, O., & Babafemi, A. (2013). Evaluation of the utilization of nursing process and patient outcome in psychiatric nursing: Case study of Psychiatric Hospital Rumuigbo, Port Harcourt. *Advances in Applied Science Research*, 4, 34–43.
- Agunwah, E. U. (2010). Evaluation of nursing process among nurses in Enugu. *West African Journal of Nursing*, 21(1): 8-13.
- Akbari, M., & Shamsi, A. (2011). A survey on nursing process barriers from the nurses' view of intensive care units. *Iranian Journal of Critical Care Nursing*, 4, 181–186.
- Aketewah, S. D. (2006). *Key concept: Nursing Process/ Care Plan*. Tachman Business Ventures, Ghana.
- Alfaro-LeFevre, R. (2010). *Applying nursing process. A tool for critical thinking* (7th edition). Philadelphia: Lippincot Williams & Wilkins.

Altamier, P. (2010). *Evaluation of implementation of nursing process among nurses working in Abakaliki metropolis*. Abakaliki, West Africa.

Ammen Werth, E., Kutscha, U., Kutscha, A., Mahler, C., Eichstadter, R., & Haux,

R. (2010). Nursing process documentation system in clinical routine-prerequisites and experiences. *International Journal of Medical Information*, 64 (2-3), 187-200.

Amparo, Z. S. (2004). *Implementing the nursing process in a teaching hospital ward: An action research study* (Ph.D. thesis). Glasgow Theses Service.

Anderson, B. (2007). *Care plan: Worthwhile or worthless? Health and nursing issues*, Australia: Retrieved from <http://agedecareact.wordpress.com>.

Anichebe, P. N. (2010). Perception, attitude and practice of nursing process among nurses in Enugu. *Journal of College of Nursing*, 5(2), 78-80.

Anonymous Nursing Students (2007). Retrieved from Milton: file://c: / document and stetting/users / my document/ Dr Kalu .mht.

Awosiyam, S. (1996). Extent of utilization of the nursing process in the nursing. *West African Journal of Nursing*, 7(2), 58-59

Axelsson, L., Bjorvell, C., Mattiasson, A. C., & Renders, I. (2006). RNs' incentive to use the nursing diagnosis in clinical practice. *Journal of Clinical Nursing*, 15(8), 936-945.

Baid, H. (2006). The process of conducting a physical assessment: a nursing approach. *British Journal of Nursing*, 15(13), 710-714.

Bartholomew, A. I. (2010). A guide to nursing process, Owerri; klimann. *American Journal of Nursing Science*, 4(3), 45-49

Beck, J. (2011). *Nursing Process in Psychiatric Nursing*. Retrieved from www.nursingplanet.com/pn/nursing_process_psychiatric_nursing.

Beck, J. (2006). *The nursing process context of community health nursing*. London: Longman publishers.

Berman, A., Snyder, S. J., Kozier, B., Erbs, G., & Synder, S. (2012). *Fundamentals of nursing: Concepts, process and practice* (9th ed.) Pearson-Prentice Hall, Upper Saddle River, NJ.

Bowman, G. S., Thompson, D. R., & Sutton, T. W. (1983). Nurses' attitudes towards the nursing process," *Journal of Advanced Nursing*, 8(2), 125-129.

Carpenito, L. J. (2002). *Nursing Diagnosis: application to Clinical Practice* (9th ed.) Philadelphia: J.B. Lippincott Company.

Carpenito-Moyest, L. J. (2009). *Nursing Care Plan and Documentation: Nursing Diagnosis and Collaborative Problems* (5th ed.). New York: J. B. Lippincott Company.

Chabeli, M. M. (2007). Facilitating critical thinking within the nursing process framework: *Health SA Gesondheid*. 12(4), 69-89.

Chitty, K. K., & Black, B. P. (2007). *Professional nursing: concepts and challenges* (5th ed.). St Louis: Saunders/Elsevier.

Christenseon, P., & Kenny, J. W. (2002). *Nursing Process Application of conceptual models*. Philadelphia: The C. V. Mosby Company.

Dahm, M. F., & Wadensten, B. (2011). Implementation of a multi professional SNCPs. *Journal of Nursing Management*, 15(8), 365-371

Datta, P. (2009). *Pediatric Nursing* (2nd ed.). West Bengal, India.

Department of Nursing. (2009). Nursing sub-sector strategic plan 2008–2013:

Nurses can make a difference in “Reversing the Trends”. Afya House- Ministry of health, Kenya. Retrieved from www.mbon.org/commissions

Doenges, M. E., Moorhouse, M. F., & Geissler-Murr, C. (2005). *Nursing Diagnosis Manual, Planning, Individualising & Documenting Client Care*. Philadelphia: F. A. Davis Company.

Dominguez-Bellido, B., Velázquez-SanFrancisco, I., Maderuelo-Fernandez, J., Crespo-Anaya, J., Garcia-Iglesias, A., Rodriguez-Torres, F., Nogales-Carpintero, J. (2012). Barriers and facilitators to the use of the nursing process in primary care. In *Conference*, Wonca, Vienna.

Emeh, A. N. (2007). *Issues on the foundation of nursing process*. Ibadan, Nigeria: Enugu Snaap Press Ltd

Fernandez-sola, C., Granero-Molina J., Peredo de Gonzales M.H., Aguilera-Manrique G., Mollinedo- Mallea, J., & Castro-Sanchez A. M. (2012). Strategies to develop the nursing process and nursing care plans in the health system in Bolivia. *International Nursing Review*, 58, 392–399.

George, J. B. (2002). *Nursing theories. The base for professional nursing practice* (5th ed.). Upper Saddle River, New Jersey: Pearson Education.

Glenn, D. J. (2009). *Agricultural Education and Communication Programme Evaluation Sampling*. Retrieved from <http://www.nursingavenue.com/Nursing-Process.html>.

Gouveia Dias Bittencourt, G. K., & Crossetti Oliveira Graca, M. (2012). Theoretical model of critical thinking in diagnostic processes in nursing. *Online Brazilian Journal of Nursing*, 11(2), 65-71

Gugerty, B., Maranda, M., Beachley, M., Navarro, V.B., Newbold, S., Hawk, W., Karp, J., Koszalka, M., Morrison, S., & Poe, S. (2007). *Challenges and opportunity in documentation of the nursing care rendered to patients*. 27 (6), 55-64.

Gulanick, M., & Myer, J.L. (2007). *Nursing Care Plans, Nursing Diagnosis & Interest* (6th ed.). ST. Louis: Mosby Inc.

Habermann, M., & Uys, L. R. (2005). *The nursing process: a global concept*. China: Elsevier Churchill Livingstone.

Hagos, F., Alemseged, F., Balcha, F., Berhe, S., & Aregay, A. (2014). Application of nursing process and its affecting factors among nurses working in Mekelle Zone Hospitals, Northern Ethiopia. *Nursing Research and Practice*, 11(4) 50-59.

Hinchliff, S., Norman, S., & Schober, J. (2003). *Nursing practice and health care*. London: Arnold, Hodder Headline Group.

Hoffman, J. J. (2008). *Nursing care plans, made incredibly easy*. Philadelphia: Lippincott Williams & Wilkins.

Holloway, K. (1999). The nursing care plan-fact or fantasy? The Australian Electronic. *Journal of Nursing Education*, 4(2), 212-224

Huckabay, L. M. (2009). Clinical reasoned judgment and the nursing process. *Nursing Forum*, 44(2), 72-78.

Jansson, I., Pilhamma-Anderson, E., & Forbeg, A. (2011). World views evidence based Nursing. *Open Nursing Journal*, 8(2), 66-75.

Jefferies, D., Johnson, M., & Langdon, R. (2010). The nursing and midwifery content audit tool (NMCAT): A short documentation tool. *Journal of Nursing Management* 18(7), 832-845.

Keane, M. (2003). *Encyclopedia and Dictionary of Medicine, Nursing and Allied Health* (7th Ed.). Philadelphia: Elsevier/Saunders.

Keshiajimenez, M. (2012). Extent of utilization of the nursing process in the nursing documentation of the professional nurses at Seamen's hospital. Retrieved from Study mode.com.

Kluwer, W. (2008). *Nursing care planning. Made incredibly easy*. Philadelphia: Lippincott, Williams & Wilkins.

Kozier, B., Erbs, G., Berman, A., & Synder, S. (2008). *Fundamentals of nursing. Concepts process and practice* (8th Ed.). New Jersey: Pearson Education.

Laryea, J. (1996). Barriers to the implementation of the nursing process. *West African Journal of Nursing*, 5, 10–17.

Leach, T. (2008). Planning: A necessary step in clinical care. *Journal of Clinical Nursing*, 17, 28–34

Lee, T. T., & Chang, P.C. (2004). Standardised Care Plans: Experience Of nurses in Taiwan. *Journal of Clinical Nursing*, 13(1), 33-40.

Lee, T. T. (2005). Nursing Diagnosis: factors affecting their use in charting SCPs. *Journal of Clinical Nursing*, 14(5), 640-647.

Lima, A. F. C., & Kurcgant, P. (2006). Meaning of the nursing diagnosis implementation process for nurses at a university hospital, *Revista Latino-Americana de Enfermagem*, 14(5), 666–673.

Lopes, M., Higa, R., Reis, M. J., Oliveira, N., & Christoforo, F. (2010). Evaluation of the nursing process used at a Brazilian teaching hospital. *International Journal of Nursing Terminologies and Classifications*, 21(3), 116-123.

Lucky, A. T., & Salami P. F. (2013) *Advances in Applied Science Research*, 2013, 4(1), 6-15.

Lusardi, P. (2012). So you want to change practice: Recognising practice issues and channeling those ideas. *Critical Care Nurse*, 32(2), 55-64

Maeve, M. K. (1995). The carrier bag theory of nursing practice, *Advance in nursing practice*, 16(4), 9-22.

Magnan, M.A., & Maklebust, J. (2009). The nursing process and pressure ulcer prevention: Making the connection. *Advance Wound Care*, 22, 83-92.

Mahmoud, M. H., & Bayoumy, H. M. (2014). Barriers and facilitators for execution of nursing process from nurses' perspective. *International Journal of Advanced Research*, 2, 300–315.

Mamseri, R. A. (2012). *The nursing process as a means of improving patient care* (Thesis). University of South Africa. Retrieved from www.mbon.org/commissions

Maria, G., Oliveira, C., Débora, F., Mariléa, R., Myrna, L., & Maria, C. A.

(2003). Computerized nursing process support system in Brazil. *International Journal of Nursing Terminologies and Classifications*, 14(4), 47–62.

Mbunya, N. (2007). Factors hindering pediatric ward nurses from using nursing care plan at Kenyatta National Hospital. Retrieved from:

<http://www.hgexperts.com/article.asp>

Meleis, A. I. (2007). *Theoretical nursing: development and progress* (4th ed.). Philadelphia: Lippincott-Raven.

Michalopoulos, A., & Michalopoulos, H. (2006). Management's possible benefits from teamwork and the nursing process. *Journal of Nurse Leader*, 15(8), 365-371

Müller-Staub, M., Needham, I., Lavin, M. A., & van Achterberg, T. (2006). Nursing Diagnoses, interventions and outcomes – application and impact on nursing practice: systematic review. *Journal of Advanced Nursing*, 36(5), 514-531

Newfield, S.A., Hinz, M.D., Tilles, D.S., Lsridaromost, K. L., & Maramba, P. J. (2007). *Cox's Clinical Application of Nursing Diagnosis* (5thed.).

Philadelphia: F.A. Davis Company.

North American Diagnosis Association (NANDA, 2013). International-history.

Retrieved from <http://www.nanda.org/nanda-international-history.html>

Ojo, A. A. (2010). *The Challenges of Best Practices and Standards in Nursing in Nigeria* (4th Inaugural Lecture series). Igbinedion University. Okada: Igbinedion University Press Ltd.

Opoku, J. Y. (2005). *A short guide to Research Writing*. Accra: Ghana University press.

Orlando, I. J. (1990). *The Dynamic Nurse-Patient Relationship*. Reissue of the 1961 edition. New York: National League of Nursing.

Paans, W., Nieweg, R. M. B., van der Schans, C. P., & Sermeus, W. (2011). Factors influencing the prevalence and accuracy of nursing diagnoses. *Journal of Clinical Nursing*, 20, 2386-2403

Paganin, A., Moraes, M. A., Pokorski, S., & Rabelo, E. R. (2008). Factors that inhibit the use of nursing language. *International Journal of Nursing Terminologies and Classifications*, 19(4), 150-157.

Parahoo, K. (2006). *Nursing research, principals, process and issues* (2nd ed.). New York: Palgrave Macmillan.

Parker, M.E., & Smith, M. C. (2010). *Nursing theories & nursing practice* (3rd ed.). Philadelphia, USA: F. A Davis Company.

Peterson, S. J., & Bredow, T. S. (2009). *Middle Range Theories: application to nursing research*. Philadelphia, USA: Wolters Kluwer Health: Lippincott Williams & Wilkins.

Pokorski, S., Moraes, M. A., Chiarelli, R., Costanzi, A. P., & Rabelo, E. R., (2009). Nursing process: from literature to practice. What are we actually doing? *Revista Latino-Americana de Enfermagem*, 17(3), 302–307.

Potter, P.A., & Perry, A.G. (2007). *Basic nursing* (6th ed.). Mosby: St. Louis.

Quan, K. (2007). Nursing Process. Retrieved from <http://www.thl.fi/thl-client/pdfs>

Repetto, M. A., & Souza, M. F. (2005). Evaluation of nursing care systematisation through the phases of nursing process performance and registration in a teaching hospital, *Revista brasileira de enfermagem*, 58, (3), 325–329.

Saba, V. K. (2007). *Clinical care classification system manual: A guide to nursing documentation*. New York: Springer Publishing Company.

Saranto, K., & Kinnunen, U. M. (2009). Evaluating nursing documentation-research designs and methods systematic review. *Journal of Advanced Nursing*, 63(3), 464-476.

Schmieding, N. J. (2006). *Nursing Theorists and Their Work* (6th ed.). St.Louis, Missouri, USA: Mosby Inc.

Sox, H. F. (2011). Careplans.com: Developed by nurses for nurses for care Planning. Retrieved from <http://www.careplan.com>.

Sparks, S. M., & Taylor, C. M. (2006). *Nursing Diagnosis Reference Manual: An Independenceable Guide to better patient cares* (3rded.). Pennsylvania: Springhouse Corporation.

Stone, P. W., Clarke, P. S., Cimiotti, J., & Correa-de-Araujo, R. (2005). *Nurses' Working Conditions: Implications for infectious disease. Emerging Infectious Diseases*. Retrieved from <http://www.hgexperts.com/article.asp>

Suhonen, R., Välimäki, M., & Leino-Kilpi, H. (2006). A review of outcomes of individualised nursing interventions on adult patients. *Journal of Clinical Nursing*, 17(3), 843–860.

Taylor, J., & Wros, P. (2007). Concept mapping: a nursing model for care planning. *Journal of Nursing Education*, 46(5), 211-215.

Teschannen, D., Keenan, G., Yakel, B., & Mandeville, M. (2002). Documentation and the nursing care planning process. *Journal of Advanced Nursing*, 26(5), 1045–1049.

Use a Smart Nursing Process for you care. (2010). Nursing - Process. *Journal of Advanced Nursing*, 26(8), 1017-1019.

Walsh, M. (2002). *Watson's clinical nursing and related sciences* (6th ed.). London: Bailliere Tindall.

Zewdu, S., & Mersha, A. (2015). Determinants towards implementation of Nursing Process. *American Journal of Nursing Science*, 4(3), 45-49



APPENDIX A: QUESTIONNAIRE

All information provided will be treated as confidential. Please do not write your name on this questionnaire. This research is on the topic: Application of Nursing Process in Pediatric Care and Its effects on the recovery of children at Public Hospitals in Accra.

Instructions:

For some questions there might be more than one appropriate answer, in that event mark all the responses you consider to be appropriate.

Answer all the questions as honestly as possible, frankly, and objectively.

Answer according to your own opinion and experience.

(Please fill in the empty spaces with a tick and circle the alphabet of the appropriate answer).

SECTION A: BIOGRAPHICAL INFORMATION

1. Indicate your Age
 - a. 24-29years
 - b. 30-34years
 - c. 35-39years
 - d. 40-44years
 - e. 45 years and above

2. Gender

a. M	b. F
------	------

3. Education / Academic Qualification

a. O' level	b. A' level	c. SHS	d. tertiary
-------------	-------------	--------	-------------

4. Highest professional qualification in nursing

- a. Registered General Nurse (diploma)
- b. Post Basic diploma with Pediatric Nursing
- c. Bachelor of Science in Nursing
- d. Bachelor of Science in Nursing with Pediatric Nursing

5. Rank

a. Staff nurse	b. Senior staff nurse	c. Nurse officer	d. Senior nursing officer	e. Principal Nursing officer
----------------	-----------------------	------------------	---------------------------	------------------------------

6. In which hospital do you work?

- a. Korle-Bu teaching hospital []
- b. Princess Marie Louis []
- c. Ridge Hospital []
- d. La General Hospital []

7. Number of years working experience as a professional nurse.

- a. 3 – 6 years
- b. 7 – 10 years
- c. 11 – 14 years
- d. 15 – 18 years

8. How long have you been working or worked at your present unit?

- a. 0-4 years
- b. 5-9 years
- c. 10-14 years
- d. 15 years plus

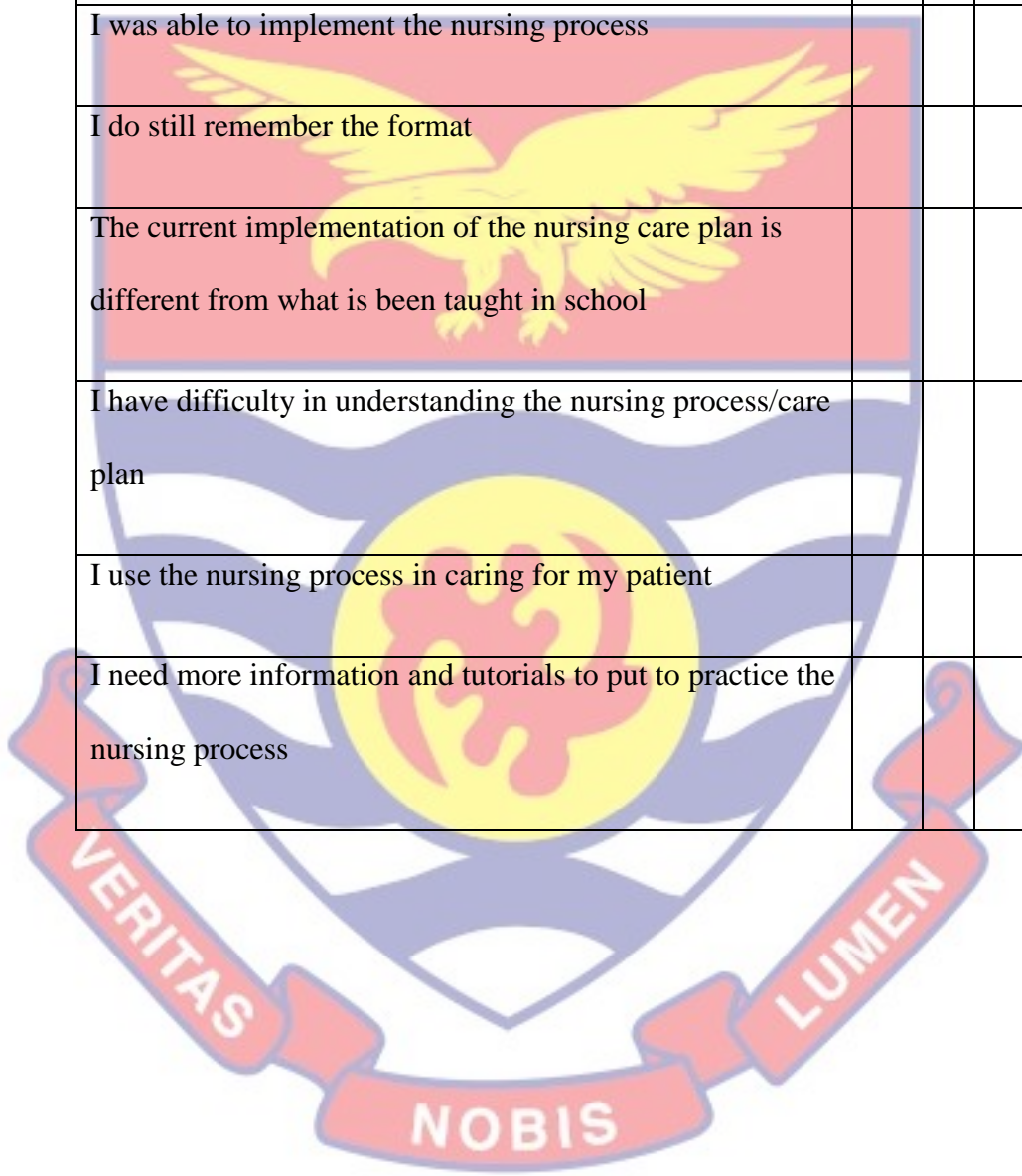
SECTION B

Knowledge and Experiences on the Use of the Nursing Care Plan at the Pediatric unit.

SD: Strongly Disagreed, D: Disagreed, N: Neutral, A: Agreed and SA: Strongly Agreed

ITEM	SD	D	N	A	SA
I have good knowledge of the Nursing Process					
I got this knowledge from the training school I attended					
I got the knowledge of the Nursing process from					

seminars/ Workshops					
I did understand the nursing process by time of teaching					
I was able to implement the nursing process					
I do still remember the format					
The current implementation of the nursing care plan is different from what is been taught in school					
I have difficulty in understanding the nursing process/care plan					
I use the nursing process in caring for my patient					
I need more information and tutorials to put to practice the nursing process					



SECTION C

Acceptability and Willingness to Practice the Nursing Process at the pediatric unit

SD: Strongly Disagreed, D: Disagreed, A: Agreed and SA: Strongly Agreed

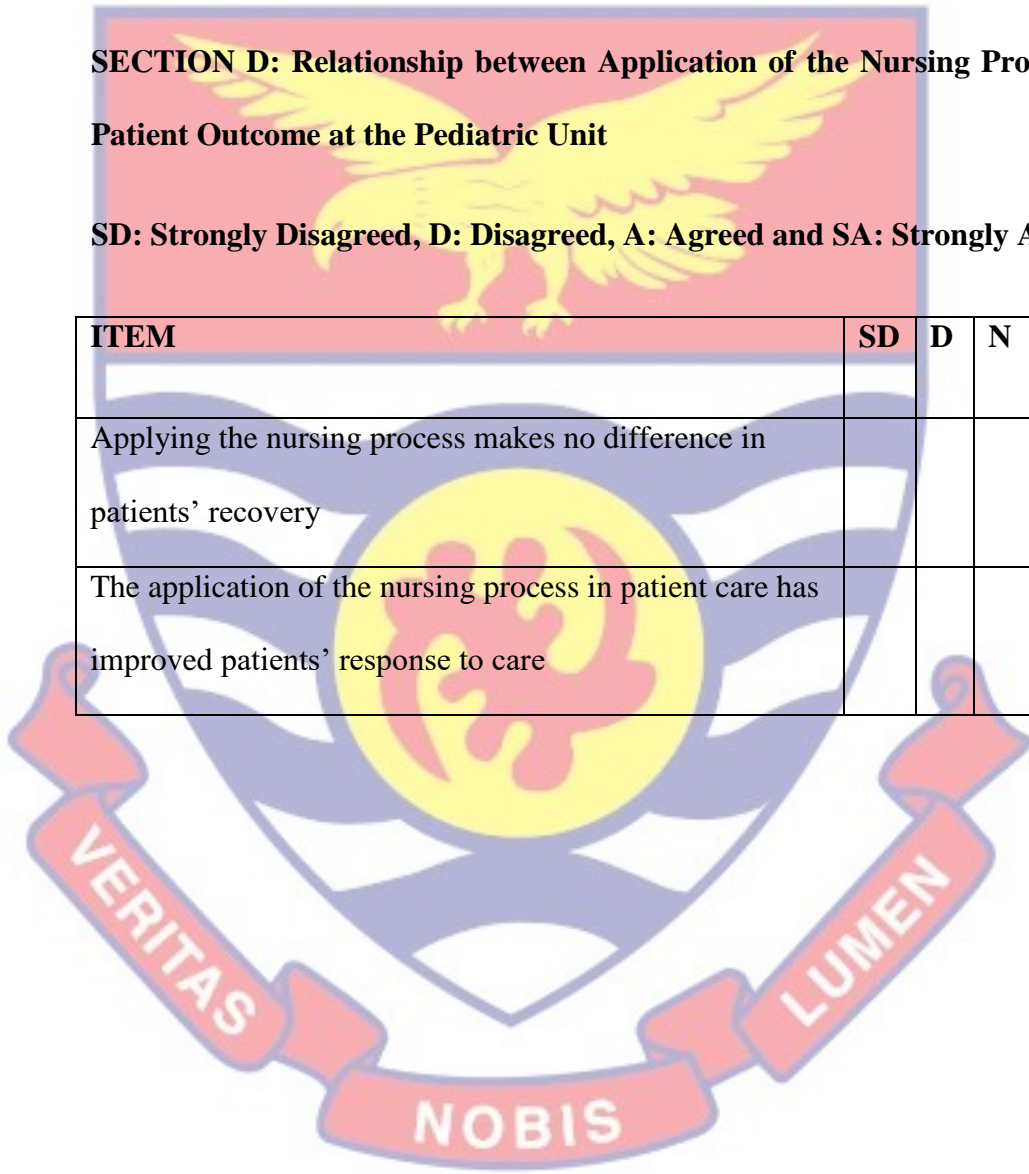
ITEM	SD	D	N	A	SA
I am willing to apply the nursing process in the care of my Patient					
I practice the nursing process often					
I do not practice the nursing process often					
I have never practice the nursing process					
I implemented nursing process to the level of assessment					
I implemented nursing process after each nursing diagnosis					
I implemented nursing process after each nursing care plan					
I implemented nursing process after successful evaluation					
I find it difficult to implement the nursing process					
I will prefer to be left out of this nursing process practice					

Application of the nursing process should be left for those with degrees in Nursing					
---	--	--	--	--	--

SECTION D: Relationship between Application of the Nursing Process and Patient Outcome at the Pediatric Unit

SD: Strongly Disagreed, D: Disagreed, A: Agreed and SA: Strongly Agreed

ITEM	SD	D	N	A	SA
Applying the nursing process makes no difference in patients' recovery					
The application of the nursing process in patient care has improved patients' response to care					



**SECTION E: Factors that Hinder the Implementation of the Nursing Process
at the Pediatric Unit**

SD: Strongly Disagreed, D: Disagreed, A: Agreed and SA: Strongly Agreed

ITEM	SD	D	N	A	SA
Applying the nursing process requires tedious documentation that nurses cannot sustain					
Management of hospitals cannot sustain supply of the necessary materials for the nursing process practice					
The nursing staff strength to patient ratio is inadequate to fully practice the nursing process					
The hospital management needs to be enlightened on the benefits of the nursing process					
The family-Centered Care in pediatric care influences the use of the nursing process.					
Patient not able to provide the various materials needed for care					

SECTION F: PERCEIVED CHALLENGES TO EFFECTIVE UTILIZATION OF THE NURSING PROCESS IN THE PEDIATRIC UNIT

CHALLENGE	LOW	MEDIUM	HIGH
Inadequate staff			
Workload			
Experience			
Nature of patient's condition			
Staff knowledge of the nursing process			
Availability of materials for documentation			
Staff inexperience			
Unavailability of time			
Staff professional qualification(pediatric nurses)			
Gender			
Lack of in-service training			
Lack of supervision of nurses by the head nurse			

Uncooperative attitude of colleagues			
The proportion of nurse to patients on the wards			
Difficulty in understanding the concept. (especially the nursing diagnoses made by other colleagues)			
The presents of the parent on the ward during care of children.			

Section G: Suggested Strategies for Promoting the Implementation of Nursing Process at the Pediatric Unit

SD: Strongly Disagreed, D: Disagreed, A: Agreed and SA: Strongly Agreed

ITEM	SD	D	N	A	SA
Regular supply of nursing process materials					
Motivating nurses to have interest in writing and implementing nursing process.					
Employing more nursing staffs into the pediatric unit					

Encouraging more nurses to be trained as pediatric nurses					
Encouraging nurses to cooperate among each other when writing nursing process.					
Regular supervision of nurses by head nursing services					
Creating a standardized format for writing nursing process					
Handing over nursing process at the end of each shift					



APPENDIX B: ETHICAL CLEARANCE

UNIVERSITY OF CAPE COAST

INSTITUTIONAL REVIEW BOARD SECRETARIAT

TEL: 03321-33172/3 / 0207355653/ 0244207814

C/O Directorate of Research, Innovation and Consultancy

E-MAIL: irb@ucc.edu.gh

OUR REF: UCC/IRB/3/113

YOUR REF:



14TH MARCH, 2016

Mrs. Edith Korkor Clarke
School of Nursing and Midwifery
University of Cape Coast

Dear Mrs Clarke,

ETHICAL CLEARANCE –ID NO: (UCCIRB/CHAS/2015/109)

The University of Cape Coast Institutional Review Board (UCCIRB) has granted **Provisional Approval** for implementation of your research protocol titled: **“Application of Nursing Process in Pediatric Care and Its Effects on the Recovery of Children in Public Hospitals in Accra.”**

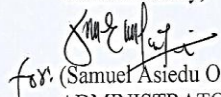
This approval requires that you submit periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

Please note that any modification of the project must be submitted to the UCCIRB for review and approval before its implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol

Yours faithfully,


for (Samuel Asiedu Owusu)
ADMINISTRATOR

cc: The Chairman, UCCIRB

ADMINISTRATOR
INSTITUTIONAL REVIEW BOARD
UNIVERSITY OF CAPE COAST
Date: 14-03-16

APPENDIX C: INTRODUCTORY LETTER



UNIVERSITY OF CAPE COAST
COLLEGE OF HEALTH AND ALLIED SCIENCES
SCHOOL OF NURSING AND MIDWIFERY
DEAN'S OFFICE



Telephone: 233-3321-33342/33372
Telegrams & Cables: University, Cape Coast
Email: nursing@ucc.edu.gh

UNIVERSITY POST OFFICE
CAPE COAST, GHANA.

Our Ref: SN/77/Vol. 2/

14th March, 2016

Your Ref:

THE MEDICAL DIRECTOR
PRINCESS MARIE
LOUIS HOSPITAL
ACCRA

Dear Sir/Madam,

LETTER OF INTRODUCTION: MRS. EDITH K. CLARKE

The above named person is a level 850 student of the School of Nursing and Midwifery, University of Cape Coast with ID number BS/MMS/14/0006.

Mrs. Clarke is in her final year, pursuing a Master of Nursing. She is conducting a research on the topic: "Application of the nursing process in the pediatric nursing in public hospital in Accra"

We would be very grateful if you could offer her the necessary assistance and support.

Thank you.

Yours faithfully,

Prof. Ahumed Adu-Oppong
DEAN



UNIVERSITY OF CAPE COAST
COLLEGE OF HEALTH AND ALLIED SCIENCES
SCHOOL OF NURSING AND MIDWIFERY
DEAN'S OFFICE



Telephone: 233-3321-33342/33372
Telegrams & Cables: University, Cape Coast
Email: nursing@ucc.edu.gh

UNIVERSITY POST OFFICE
CAPE COAST, GHANA.

Our Ref: SN/77/Vol. 2/

14th March, 2016

Your Ref:

THE NURSE DIRECTOR
KORLEBU TEACHING
HOSPITAL
ACCRA

Dear Sir/Madam,

LETTER OF INTRODUCTION: MRS. EDITH K. CLARKE

The above named person is a level 850 student of the School of Nursing and Midwifery, University of Cape Coast with ID number BS/MMS/14/0006.

Mrs. Clarke is in her final year, pursuing a Master of Nursing. She is conducting a research on the topic: "Application of the nursing process in the pediatric nursing in public hospital in Accra"

We would be very grateful if you could offer her the necessary assistance and support.

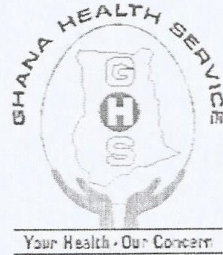
Thank you.

Yours faithfully,

Prof. Ahumed Adu-Oppong
DEAN

APPENDIX D: MEMORANDUM

MEMO



PRINCESS MARIE LOUISE CHILDREN'S HOSPITAL

TO: ALL UNIT HEADS
FROM: HOSPITAL ADMINISTRATOR
DATE: APRIL 21, 2016
SUBJECT: INTRODUCTION: MRS. EDITH K. CLARKE.



The aforementioned student from University of Cape Coast has been granted permission to undertake research at this Hospital.

She is pursuing her Master in Nursing and her thesis is entitled "**Application of the Nursing Process in the Paediatric Nursing in Public Hospital in Accra**".

Please offer her the necessary assistance to enable her complete this project successfully,

Thank you.