

**FACTORS INFLUENCING APPLICATION OF EVIDENCE
BASED PRACTICE (EBP) AMONG NURSES WORKING IN
KENYATTA NATIONAL HOSPITAL (KNH)-NAIROBI.**

**A DISSERTATION SUBMITTED IN PARTIL FULFILMENT OF
THE AWARD OF THE DEGREE OF MASTER OF SCIENCE IN
NURSING (NURSING EDUCATION) OF THE UNIVERSITY OF
NAIROBI**

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DECLARATION AND CERTIFICATE OF APPROVAL

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DEDICATION

This dissertation is dedicated to my dear husband Dr. Dulacha G.B and to my gorgeous boys Umuro. and Ali for their continuous prayer, support, encouragement and patience during the course of my study.

This work is further dedicated to my little angel Simpire, for bringing joy at this critical time.

You are all the wind beneath my wings!

To my mother Kurfa and my mother in-law Haloni for their prayers.

God bless you all

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TABLE OF CONTENTS

DECLARATION AND CERTIFICATE OF APPROVAL.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT.	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES.....	ix
LIST OF FIGURES.....	vii
LIST OF ABBREVIATIONS.....	xi
DEFINITION OF OPERATIONS TERMS.....	xii
ABSTRACT.....	iv
CHAPTER ONE.....»	
1.0 INTRODUCTION.....	1
1.1 BACKGROUND INFORMATION.....	2
1.2 PROBLEM STATEMENT.....	3
1.3 JUSTIFICATION OF THE STUDY.....	5
1.4 OBJECTIVES.....	6
1.4.1 Broad Objectives.....	6
1.4.2 Specific Objective.....	6
1.5 RESEARCH HYPOTHESIS.....	7
1.6 ASSUMPTION.....	7
1.7 RESEARCH QUESTION.....	7
1.8 EXPECTED BENEFITS OF THE STUDY.....	8

1.9	THEORETICAL FRAMEWORK.....	8
1.10	CONCEPTUAL FRAMEWORK.....	Error! Bookmark not defined.
CHAPTER TWO.....		11
2.0	LITERATURE REVIEW.....	11
2.1	INTRODUCTION.....	11
2.2	STEPS INVOLVED IN EVIDENCE BASED PRACTICES.....	12
2.3	APPLICATION OF EVIDENCE BASED PRACTICE.....	13
2.4	FACTORS THAT INFLUENCE APPLICATION OF EVIDENCE BASED PRACTICE.....	15
CHAPTER THREE.....		21
3.0	STUDY METHODOLOGY.....	21
3.1	STUDY DESIGN.....	21
3.2	STUDY AREA.....	21
3.3	STUDY POPULATION.....	22
3.4	INCLUSION AND EXCLUSION CRITERIA.....	22
3.4.1	Inclusion Criteria.....	22
3.4.2	Exclusion Criteria.....	22
3.5	SAMPLING FRAME AND STUDY UNITS.....	23
3.6	SAMPLE SIZE DETERMINATION.....	24
3.7	SAMPLING METHOD.....	25
3.8	PROPORTIONAL ALLOCATION OF NURSES PER WARD.....	25
3.9	DATA COLLECTION.....	29
3.10	DATA COLLECTION PROTOCOL.....	29
3.11	STUDY VARIABLES.....	29
3.11.1	Independent variables.....	29
3.11.2	Dependent variables	
3.12	STUDY INSTRUMENT.....	30

3.13	PROTESTING STUDY INSTRUMENT.....	30
3.14	TRAINING OF RESEARCHER ASSISTANTS.....	31
3.15	DATA CODING, QUALITY CONTROL, ENTRY AND ANALYSIS.....	31
3.16	MINIMIZATION OF BIAS.....	33
3.17	ETHICAL CONSIDERATIONS.....	33
3.18	STUDY LIMITATIONS.....	34
3.19	DELIMITATION.....	34
4.0	CHAPTER FOUR: RESEARCH FINDINGS.....	35
5.0	CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS.....	53
5.1	DISCUSSION.....	53
5.2	CONCLUSION.....	64
5.3	RECOMMENDATION.....	65
	TIME FRAME.....	35
	BUDGET.....	68
	REFERENCES.....	69
	APPENDIX I: RESPONDENT'S CONSENT FORM.....	75
	APPENDIX II: QUESTIONNAIRES FOR NURSES.....	77
	APPENDIX III: INDEPTH INTERVIEW GUIDES FOR NURSE MANAGERS IN- CHARGES OF THE WARDS.....	82
	APPENDIX V: DUMMY TABLES PRESENTING PROPOSED STUDY ANALYSIS.....	83
	APPENDIX VI: LETTER TO THE UNIVERSITY OF NAIROBI-KENYA TTA NATIONAL HOSPITAL ETHICS COMMITTEE.....	84
	APPENDIX VII: LETTER TO THE CHIEF EXECUTIVE OFFICER(CEO), KENYATTA NATIONAL HOSPITAL.....	86

APPENDIX VIII: LETTER TO THE MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY	87
APPENDIX VIII: RESEARCH AUTHORIZATION LETTER FROM NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY.....	88
APPENDIX IX: LETTER OF APPROVAL FROM KNH ETHICS AND RESEARCH COMMITTEE.....	89

LIST OF TABLES

TABLE 1: MEDICAL WARDS.....	27
TABLE 2: SURGICAL WARDS.....	28
Table 4.1: Education level and nursing practice among nurses at KNH.....	38
Table 4.2: Demographic characteristics of nurses and association with EBP.....	40
Table 4.3: Nursing training, practice and EBP application.....	42
Table 4.4: Reported availability of time and EBP application.....	44
Table 4.5: Nurse reported access to research material and EBP practice.....	46
Table 4.6: Attitude of nurses at KNH towards EBP.....	46
Table 4.7: Nurses' responses on influence of knowledge factor on EBP.....	47
Table 4.8: Ability to translate research material into treatment plans.....	48
Table 4.9: Logistic regression of nurses' age, gender and factors associated with EBP application.....	49
Table 4.10: Characteristic of nurse managers interviewed on EBP at KNH.....	50

LIST OF FIGURES

Figure 4: Reported application of evidence based nursing practice by nurses in medical and surgical departments in KNIL.....39

Figure 5: Nurses' self-rating on ability to critically review EBP literature.....41

Figure 6: Sources of information guiding nursing practice among nurses in KNIL.....41

Figure 7: Reported computer use at workplace by nurses at KNH.....43

Figure 8: Nurses responses on management support for EBP.....44

Figure 9: Influence of support from nursing colleagues on EBP application.....45

LIST OF ABBREVIATIONS

ACN	Assistant Chief Nurse
CEO	Chief Executive Officer
CNS	Clinical Nurse specialist
EBM	Evidence based medicine
EBP	Evidence Based Practice
EN	Enrolled Nurse
ERC	Ethical Research Committee
ICU/HDU	Intensive Care Unit/ High Dependency Unit
IOM	Institute of Medicine
KMTC	Kenya Medical Training College
KNH	Kenyatta National Hospital
MO PC	Medical outpatient clinic
NCBD	Nairobi Central Business District
PBC	Protocol Based Care
UN	Registered Nurse
SNO	Senior Nursing Officer
SOPC	Surgical outpatient clinics
SPSS	Statistical Packages for Social Sciences
ION	University of Nairobi
UK	United Kingdom
PORN	Peri-Operative Nurse

DEFINITION OF OPERATIONS TERMS

Diffusion: - process by which an innovation is communicated through certain channels over a period of time among the members of a social system.

Diffusion innovation theory: - Is a theory concerning the spread of innovation, ideas, and technology through a culture or social system.

Evidence based practices (EBP): - Is the care that is based on best scientific evidence in order to obtain quality patient care.

⁴Best¹- in this study means relevance to the situation and intended to bring out the high quality outcome.

Innovation: - idea, practice, or object that is perceived as new by an individual.

Quality patient care: - Care which is based on the obtained research evidenced which is intended to bring about desired outcome. Research evidence that is current, valid, relevant to the situation and can be evaluated.

Socio-demographic factors: - age, gender, level of training, and position held by the nursing staffs i.e. manager

Logistic regression analysis - is a parametric statistical technique that defines the dependent (outcome) variable as categorical.

ABSTRACT

Evidence based practices (EBP) is application of care that is based on scientific evidence in order to obtain quality patient care. This concept was first introduced in the late 1970s' by Florence Nightingale who linked environment, disease occurrence and patient care. Modern Nursing care has evolved from this concept. However, documentary evidence on these evolutions and standardization of nursing practice was limited to the developing world. This study was designed to establish factors that influence application of EBP by nurses at Kenyatta National Hospital. The cross sectional study which was conducted over a four weeks period, 144 eligible nurses consented and enrolled in the study. Questionnaires was used to collect data on socio-demographics, evidence based practices and challenges encountered during the implementation process. Part two of the study involved an in-depth interview with nurse managers regarding knowledge, role and audit processes on evidence based practices.

Quantitative data was analyzed using Statistical Package for Social Science (SPSS) version 17. while INVIVO 9 was used to analyze qualitative data. Association between independent and dependent variables was determined using Chi square ($P < 0.05$). The result was presented in form of tables, pie charts and graphs.

The result of the study has revealed that EBP application was influenced by personal factors like nurse education, nurses' attitudes towards research, and ability to critically review literature among other factors.

In conclusion the study recommends that KNH Management design and develop staff work model that takes into consideration factors, such as, patient to nurse ratio, balance between routine duties and time for research and training. There is need to develop a guideline on EBP application as most of the informants stated that their practices were based more on ward routine and hospital guideline than on research evidence.

CHAPTER ONE

1.0 INTRODUCTION

Evidence based practice is an interventions that arc based on current, and the best available latest research evidence in order to give quality patient care outcome. The evidence is obtained through validating research findings proven to be the best in order to guide nursing care outcome. This is because in 2P¹ century nursing care should be based on research evidence. It is important that nursing staff validates the reasons why procedures and treatments are given to individual patient so that the goal of ensuring patient safety is assured for better outcomes.

For evidence based nursing practice to be applied, competent nurses researchers are needed who can conduct and apply the study findings (Shaibu, 2006). This emphasizes the needs for EBP oriented clinical settings, where nurses are expected to involved more in research and the application of EBP for quality patient care.

This dissertation has been divided into five chapters. Chapter one covers introduction and background information. This chapter includes meaning of EBP and the steps involved in EBP, problem statement, justification and benefit of the study, the objectives, research question, objectives of the study and theoretical framework.

Chapter two is literature review- which has been subdivided into: the introduction, review of published material on application of EBP and factors influencing EBP application.

Chapter three concerns mainly study methodology. It highlights study area, design, study population, sampling and sampling framework, study instruments, pre-testing, data collection,

ethical issues, and limitation of the study.

Chapter four covers the study findings. The findings has been sub-categorized as follows; socio-demographic characteristics and EBP application, evidence based practice among nurses, guidance of nursing practice, research data availability and EBP application, and combined logistic regression of socio-demographic characteristic of nurses and EBP application.

The final chapter five is on discussions of the study finding; subdivided into socio-demographic characteristics versus EBP application, logistic regression analysis versus factors influencing EBP application and Ward managers' knowledge of practice, conclusions and recommendation.

1 1 BACKGROUND INFORMATION

The concept of evidence based practice was introduced during the late 1970s'. Earlier the idea originated from founder of nursing Florence Nightingale. Nightingale had an idea when she assessed patient environment, collected data, identified interventions and monitored. Nightingale's ideas may be an eye opener to modern day evidence based practices (Lcighs. 2010). However, the trend of EBP application has not been well taken up in the health care system, more so in Africa. Nurses in Africa lag behind in research because of the fewer number of nurses who are sufficiently prepared at higher level to conduct scientific research. Funding of research has also been an issue (Shaibu, 2006). In Kenya as in other developing countries where the burden of diseases is on increase, EBP is necessary in order to provide quality care that will improve patient care outcome.

Application of EBP ensures that critical strategies that health care providers utilize in workplace are up to date and that it reflects the latest in research. The nurse has to collect, interpret, and

integrate the valid, important and applicable patient-reported, clinician-observed, and research-driven evidence (Beyea and Slattery. 2006). Such practice is consistent with EBP.

Evidence based practice comprises of five steps, which should be systematically applied in order to achieve the required results of quality patient care and is summarized as;

Creation of the question-identification of clinical problem and formulating a question;

Gathering relevant research- searching for the research that pertains to the problem;

Analyze the findings-critically analyze the collected research, source of research, whether it is current, relevancy to the problem;

Implement treatment- application of gathered information to treat patient.

Re-examine the process- review all previous actions; re-evaluate process to determine success of EBP application.

Sackett, Strauss, & Richardson et al., (2000) indicated that in order to provide quality care which is scientifically based nurses should be active competent users of the best available evidence that will guide clinical decision making. This study will therefore be carried out among nurses working in medical and surgical wards, SOPC and MOPC at KNH because of being the largest teaching and referral hospital in Kenya and in Eastern and Central Africa in order to establish factors that influence EBP application among the nurses.

1.2 PROBLEM STATEMENT

Health for all is one of the Millennium Development Goals. As is global practice, nursing is the

backbone of health care system, and nursing practice need to be evidence based to ensure quality patient care.

Limited institutional resources are hindrances even when nurse want to modify their practices (Klassen et al. 2002). The researcher further stated that policies and procedures that support EBP are outdated. This may be so in KNH situations, which need to be validated among nurses working in medical and surgical wards, SOPC and MOPC.

Recent studies have found out that Registered Nurses (RN) are not well oriented with the application of EBP in a clinical environment (Pravikoff, Tanner, & Pierce, 2005). Kenyan registered nurses constitute larger percentage in practice (Nursing Council of Kenya). They are mandated to take charge of the nursing activities in diverse localities, thus ensuring that patient and client get the best possible care. In Africa, there is significant gap between research and practice (Shaibu 2006).

In a related study in U.S, Dysart and Tomlin (2002) conducted a study on application of EBP by nurses. The study indicates low application of EBP, with only 23.4% of the 1500 nurses surveyed. Worse still, only 15.9% of the total nurses surveyed made practice change in the last few months. This is not exceptional in Kenyan setting, as limited research in the field of factors influencing EBP application is recorded. Therefore there is need for exploration of EBP application in KNH. being largest referral and teaching hospital with large patient and nurses" population.

It is in this context that this study was conducted to establish factors influencing application of EBP in medical and surgical wards, SOPC and MOPC at KNH which is the largest teaching

hospital in Kenya and with largest patient capacity as well nursing staffs at any given time.

1.3 JUSTIFICATION OF THE STUDY

This study was conducted at a time when the need for EBP in clinical setting is high and the country is embracing health for all policy. EBP application is of paramount importance in Kenya as well as the Africa, where the burden of diseases is on increase. EBP application is particularly relevant due to inherent characteristics of the medical and surgical wards, such as, large number of patients, long stay in the wards, multiple disease conditions, multiple drug resistance on increase and diseases re-emerging. Given the critical role of these wards (medical and surgical) with respect to patients care, study on factors that influence nurses application of EBP is of paramount significance to the nursing and more specifically to the policy makers in the health sector.

Melnvk et al, (2004) in study on nurses' perceived knowledge, beliefs, skills, and needs regarding EBP found out among many factors; perceived lack of time due to heavy patient load is an influential factor in application of EBP. In the context of KNH where patient ratio to nurse is high, this may influence EBP application, therefore there is need to explore factors associated with application of EBP.

Emphasis has been made to bring Africa on board in the field of EBP as this will allow Africa an opportunity to engage in evidence translation of phenomena (Shaibu 2006). The researcher's argument is an indication that Africa need to embrace application of EBP for quality patient care.

In clinical practice setting emphasis on evidence based is on increase. Nurse educators are being urged to prepare graduates basing the practice on current knowledge, theory, and research. Such

graduate is expected to evaluate nursing care outcomes, participate in research, utilize research findings and shape the health care delivery system (Callister et al. 2005). This is an indication that the need for EBP in teaching institution will influence the outcome of the graduate in clinical settings so as to produce knowledgeable nurses who will translate knowledge to practice. In the Kenya situations the nursing council of Kenya has time and again emphasis the need for incorporation of aspects of HBP in the curricula and nursing practice (NCK, 2004). While there is public outcry over deteriorating health care, limited study has been done on EBP application in order to support and improve patient care outcomes. Therefore this study will contribute to the literature on EBP application and also may be used by policy makers to incorporate EBP in nursing care practice in order to provide quality evidenced based care.

1.4 OBJECTIVES

1.4.1 Broad Objective

- I. To establish factors that influence application of EBP by nurses in medical and surgical wards SOPC and MOPC at KNH

1.4.2 Specific Objective

- i. To determine application of EBP by the nurses in medical and surgical wards, SOPC and MOPC at KNH
- ii. To establish the relationship between EBP application and the nurses' characteristics, in medical and surgical wards, SOPC and MOPC at KNH.
- iii. To establish relationship between resource availability and EBP application

- iv. To identify approaches that will facilitate EBP application in nursing care, practices in the medical and surgical wards at KNH

1.5 RESEARCH HYPOTHESIS

- i. Availability of resource will influence the application of EBP in improving quality patient care outcome.
- ii. Nurses' qualification will influence application of EBP.

1.6 ASSUMPTION

The assumption of the study was that;

- i) Nurse in medical and surgical wards at KNH have some degree of knowledge of EBP and they also practice EBP.
- ii) Guidelines and resources are available for application of EBP.
- iii) Nurses in medical and surgical wards are representative of the population of nurses across KNH.

1.7 RESEARCH QUESTION

What are the factors that influence application of EBP among the nurses working in medical, surgical wards. SOPC and MOPC at KNH?

18 BENEFITS OF THE STUDY

The hallmark of EBP application is provision of quality patient care, therefore the findings of the study is expected to assist in improving care outcome especial in this time when infectious diseases occurrence are on increase. Since there is limited literature in the Kenyan setting on factors influencing EBP application, the research finding is expected to contribute to this field in order to improve patient care outcome. The study finding is also expected to guide policy makers in formulating policies that allow for incorporation of empirical results in the clinical pathways for nursing care of patients. The finding of the study is also expected to assist learning institutions to incorporate application of EBP in the curriculum so that students after graduating in nursing programs will be excellent users of EBP for decision making in clinical setting. The expected benefit to the nurses is motivation to continuity in research, which will lead to professional growth, and development.

1.9 THEORETICAL FRAMEWORK

Diffusion innovation theory

Diffusion is the "process by which an innovation is communicated through certain channels over a period of time among the members of a social system". An innovation is "an idea, practice, or object that is perceived to be new by an individual or other unit of adoption" Rogers (1995). In this research context the practice of evidence based practice will be viewed as an innovation. The study will adopt diffusion theory which has been used to focus on knowledge of research utilization (Rogers 1995). In the context of EBP application, the theory application will be guided by Rogers' five elements which are; (1) innovation characteristic. (2) the decision-

making process of practice or new ideas adoption (3) the characteristics of adopters (4) Innovation consequences, (5) communication channels used in the adoption process.

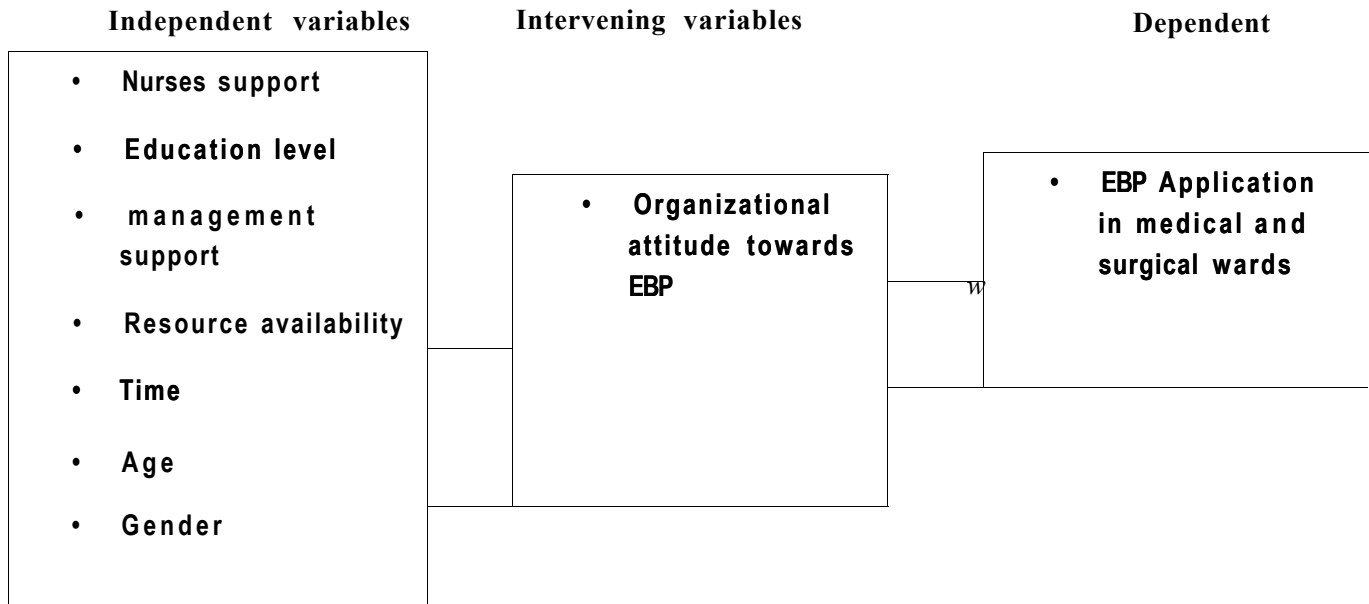
In the context of this study, three of the five elements of diffusion theory will be utilized in relation to the variables in the study to include:

- Innovations consequences- This is outcome variables or dependent variables that is influenced by independent and intervening variables. In this study context application of EBP will be viewed as innovation consequences.
- Characteristic of the adopters: Such characteristics are represented by nurses characteristics such as: age, gender, socio economic status, and level of education which is also independent variables. As well as colleagues and management support.
- Characteristics of the innovation: these are intervening variables- attitudes to EBP application by management.

The other determinant of the diffusion innovation theory that was utilized in the questionnaires development was the relative advantage of EBP over the current practice in improving patient care. Compatibility of EBP with existing workflow, policies and the complexity in understanding new research findings.

Therefore diffusion theory can be used as basis for adoption of EBP in order to restructure health care practices, policies formulation and intervention for quality care outcome in medical and surgical wards, MOPC and SOPC at KNH.

1 10 CONCEPTUAL FRAMEWORK



CHAPTER TWO

2 0 LITERATURE REVIEW

2.1 INTRODUCTION

EBP is research driven so that effective treatment for the specific problems is provided. Application of EBP is expected to have potentials of influencing nursing practice outcome, development of clinical pathways, protocols and clinical decision making.

There is increasing emphasis on evidence based nursing practice in order to give patient quality care. Delivering of quality care will depend on integration of best available evidence whereby nurse is required to integrate clinical expertise and patients" preference (Kruszewski, & Brough 2009). Demands in health care environment are continuously increasing, where nurse are expected to keep up with the trend to provide quality patient care based on evidence. This has been supported by research which state that new graduate nurses are continuously exposed to increasingly demanding and complex acute care clinical setting that require nurses to think effectively in order to provide quality patient care (Kautz et. al 2005 cited in Oja 2011). Such is the case in medical and surgical wards at KNII where large numbers of patients are acute and require the nurses to base the care on scientific evidence in order to improve care outcome.

Klassen et.al, (2002) suggested that performance of nursing procedure should be grounded in research. so that the care outcome can be validated i.e. nurses should ask what does the research find as important consideration in hand- washing, wound dressing and decontaminations? Such questions will therefore prompt the nurse to base her nursing care on the evidence not intuitions.

Institute of Medicine (IOM) which promotes evidence-based management practices (IOM, 2004). as well as evidence-based health policy decisions (IOM, 2002), recommends that EBP is here to stay and that it is more important to incorporate EBP into the practice and educate health care professionals on EBP (Greiner & Knebel. 2003; IOM. 2001 as cited in Singleton & Levin, 2008).

2 2 STEPS INVOLVED IN EVIDENCE BASED PRACTICES

Evidence-based practice is a guideline in approaching patient care that relies on scientific research and evidence more often than experience or intuition (Ferguson 2005). EBP is step by step guide that incorporates both scientific research findings, and patient history to provide the most comprehensive care possible in patient treatment. Application of EBP increased during the 1970s and 1980s in response to demand for more efficiency in patient care (Leighs, 2010).

There are about five steps involved in HBP application:

Step 1: Creation of the Question: - Identify and understand the medical problem, patient history and form a question. Review of the medical problem and the interventions that were already given.

Step 2: Gathering relevant Research: - The scientific research evidence that pertains to problem identified will be searched for. Information gathered has to have potential to solve identified problem.

Step 3: Analyze the Findings: - Critical analyze the collected research findings. Evaluate sources of information, types of research done and if the finding is recent. Validity and relevance of the

literature to the problem question.

Step 4: Implement Treatment: - Application of evidence to treat the patient. This step involves all the personnel's involved in the care of the patient to create treatment plan using research material obtained. At this point the importance of forming a solid medical question and gathering valid research sources is realized.

Step 5: Re-examine the Process: - The final step in EBP application is to review all the previous four steps. Evaluation of the EBP process is to determine whether or not the implementation was effective. Further research evidence search or modification of care plan if the treatment plan was not effective will be done.

2.3 APPLICATION OF EVIDENCE BASED PRACTICE

Nurses and midwives are the cornerstone of the health care delivery and therefore should be in front line in providing evidence for the care they provide as complexity in the health care increases with re-emerging disease patterns on increase. Critical thinking in nursing and basing decisions on sound evidence will enhance quality care of the patient. However, a study has found out that for many nurses, the practices are the same as were taught in nursing school (Klassen et al 2002). Nurses should be able to change existing nursing practice if not based on empirical findings. The value of empirical evidence is basic to nursing and nurses should aim to change practice paradigms direction to enhance quality patient care.

Research on evidence based nursing education; myth or reality by Ferguson & Day, (2005) question whether EBP has been applied to nursing education. This is because having the knowledge on EBP will improve the care given both by student and graduates. It is essential to

apply [* BP in the nursing care of the patient in 21st century, where there is shortage of resources and need for health care reform is emphasized. More so in Kenya and Africa where the poverty level is high and only few people can afford quality healthcare.

Application of EBP across health sector and profession is gaining momentum in the recent years and its' being globalized. However research by Muktar (2006) state that though nursing intervention has been under pressure to be evidence based some proportions of nursing interventions remains to be founded in tradition time.

In a related article Klassen et al (2002) suggested that importance of EBP application is being emphasized through use of research-based skills manuals into undergraduate and graduate education, in order to eliminate the tradition ways of doing nursing practice for EBP. This research findings emphasis need for more venture into the field of EBP application by the nurses in order to be abreast with current research findings in the care of the patient.

In the study on perception of evidence-based practice: Survey of Australian Occupational therapist, the researchers found that at clinical level EBP application meant integration of high quality research evidence with clinical expertise and patients' values (Bennett et al. 2003). This finding is important because the care provided ought to be evidence based as patients get more informed of their care.

Challenging health care environment, acute care setting calls for continuous critical thinking and decision making among nursing staffs. These should be based on research evidence in order to generate alternatives which will guide care practice (Ferguson & Day 2005). This is more

relevant in medical and surgical wards where demand for evidence based care is high due to acute care environment and multiple disease conditions.

HBP improves nursing practice which will be translated to better patient's outcomes, overcoming the gap between generation of research evidence and application of EBP in clinical setting (McCleary & Brown 2003).

Study on evidence based nursing education found out that holistic care involves a focus on client values that is essential to effective implementation of EBP (Ferguson & Day 2005). The researcher also argued that there is need to integrated EBP in nursing education, so that students are encouraged to practice in an evidence based manners.

Sackett et al (2000) suggested that it is imperative for all master's prepared nurses to become competent, active users of the best available evidence that informs clinical decision making. Nurses at masters level are ought to be critical thinkers and decision makers in order to provide quality nursing care to the patient. It is therefore important to examine, whether the level of education is an influential factor in EBP application.

2.4 FACTORS THAT INFLUENCE APPLICATION OF EVIDENCE BASED PRACTICE

The ultimate goal of nursing practice is to deliver high-quality nursing care and to improve patient care outcome. Nurses' effort to modify practices to EBP has been hampered by few institutional resources that would have facilitated the process or consolidated the most current information; and also in most hospitals the policies and the procedures are outdated (Dairymple et.al 2010). There is need to investigate whether such concerns are relevant to medical and

surgical ward. SOPC and MOPC in KNH, with respect to the factors that influence nurses application of EBP.

Research study in New Zealand by Cotteril-Walker (2011) found out that despite having analytical skills and decision making skills even at Masters Degree level, nurses encounter challenges in practice of EBP from colleagues and the managers. They are not able to move forwards in practice due to lack of role models in workplace and feeling powerlessness in application of research knowledge.

Although the demand for EBP competency in clinical setting among nurses is high, data suggests that RNs are not well prepared to practice EBP (Pravikoff, Tanner, & Pierce 2005). This emphasis need for more EBP oriented clinical practices, where nurses are more involve in the use of EBP strategies in clinical environment. Research findings also suggest that age is also a factor in application of EBP, whereby the younger the nurse the more likely that he/she value, conduct and apply research findings (Muktar 2006).

There is still a gap between research and practices in Africa as the continent lag behind since only fewer nurses are sufficiently prepared to conduct research, and funding too is major hindrance to conducting research (Shaibu. 2006).

Best available evidence is hallmark of quality patient care outcome. The uptake is often slow and uneven and reasons underlying the slow diffusion of evidence based guidelines remain to be identified (Dairymple et. al 2010). Such exemplifies need for EBP empirical research studies.

O'Callaghan (2001) cited in Muktar (2006) suggested that evidence based policies and healthcare decisions were given lip service and often nursing care is dominated by tradition.

opinion, common sense and intuition without proper attention to the available evidence.

Klassen et al (2002) found out that learnt information remain intransigent, and for many nurses any input that conflicts with their beliefs or that would require them alter their behaviours' will be resisted. Therefore why nurses have tendency to hold on to one way of performing nursing task need to be investigated if it has effect on application of EBP in medical and surgical wards at KNH.

Research study undertaken in the United Kingdom (UK) among nurses, midwives and healthcare visitors on their roles and development of protocol based care (PBC) which refers to use of documents, such as protocols, guidelines and care bundles to standardize healthcare and support evidence-based practice. It was found out that nurses' role was almost invisible. The conclusion made was that there was a dearth of literature on the contribution, experience and outcomes for nurses, midwives and health visitors of PBC (Debra and JoyRycroft, 2010). These findings are indication that nurses contribute little to the research and the reason need to be validated in clinical setting especial in the setting of medical and surgical wards at KNH.

Melnyk et al (2004) in study on nurses' perceived knowledge, beliefs, skills, and needs regarding EBP found out that the major influential factor in application of EBP are; 1) perceived lack of time due to heavy patient loads. 2) personal attitudes towards research, 3) difficulty in searching for and retrieving studies. 4) difficulty of reading and understanding of research material, 5) Lack of adequate appraisal skill for EBP and 6) lack of autonomy to practice. The research also highlighted lack of administrative support and lack of resources as other influential determinants of EBP application.

In U.S study done on factor related to evidence based practice among U.S Occupational therapy clinicians found out that to apply evidence based practices, therapists must be able to obtain current research pertinent to their practice and apply it in their clinical setting. The researchers also noted that the media used to access current research, such as journals, the internet and continuing education lectures, may be confusing, or inaccessible because of factors such as urban or rural location as well as practice setting (Dysart & Tomlin 2002)

In a related article Ilios & Davidson (2006). investigated evidence based practice among Australian physiotherapists, with particular attention to practice, skills and knowledge. The study involved use of questionnaire survey of 230 physiotherapists working in hospitals and private practice. 54% (124) completed and returned the survey instrument. Results of the study indicates that although at least 69.4% read research literature at least once a month (classified as frequently), a much smaller percentage use key clinical research databases such as PEDro (10.6%), Cochrane and Medline (15.3%) or Cinahl (26.6%).

It was also evident that application of EBP is directly related to level of training of physiotherapists, with higher level trained physiotherapist rating their EBP skills highly. Also, the use of EBP was relatively same for physiotherapists, whether they are in private practice or work in a hospital. In the finally analysis, research indicates that the Australian physiotherapists have positive attitudes towards use of EBP with the main barrier to application as being time required, access to journals, and lack of personal skills in searching.

McInerney & Suleman (2010) examined EBP among academic health care practitioners. The primary aim of the study was to determine use of "evidence" in teaching and potential barriers to application of EBP. Qualitative research design and structured questionnaire was utilized for the

survey. Results of the twenty three academic health practitioners indicates that 80% strongly agree to incorporating HBP in teaching, whereas 48% suggests that EBP is another dimension of clinical practice. The study concluded that lack of knowledge, access to research findings and lack of time as the main barriers to academic health practitioners' application of EBP in a learning environment.

Evidence based practice is emphasized and widely utilized among health practitioners. Beyond nursing, Mozafarpour et.al, (2010) studied use of evidence base (Evidence Base Medicine - I BM) among medical doctors in Iran. It was a cross-sectional study of 181 doctors across various medical specialties. Analysis and results of self administered questionnaires suggests that only 41% of the respondent use EBM, with a greater majority (70%) agreeing that EBM improves quality of health care services. Most respondent (74.3%) identified the main barrier to practicing EBM as lack of EBM training in academic curriculum.

Study on interrelationship among nurses on thinking skills, research knowledge, and evidence based practice found out that ability for nurses to think and understand research is essential to evidence based practice to bridge the gaps between education, research, and practice (Fonteyn,2005)

French (2005) while doing study on contextual factors influencing research use in nursing. observe that multiple contextual factors influencing decision making. Such factors are resources constraints, relationship with others, organizational complexity. In conclusion the researcher suggested that since evidence-based practice requires translating evidence to practice, it will require nurse specialist who will instigate, fuel and coordinate policy review through involvement of other professional and organizational.

From the review of the literature it is evident that there are many contextual factors that influence HBP application in clinical setting. It is also evident from the literature review that limited research was done in the field of nursing on factors that influence EBP application. This therefore suggests that there is need for investigating factors that influence application of EBP in providing quality care for the patient. This is particularly important to Kenya with ever increasing need for better health care both in urban and rural areas. Emphasizing significance of health care, in the Kenyan constitution 2010, health is one of the few functions devolved to the county government. This is because as accountability gets to the lower levels of governments, health care is best managed at the lower unit rather than from the centre, that is national government. It is an indication that health is a key function that impacts not only on well being, but also the fact that ill health (lack of wellness in the population) affects labour productivity and ultimately economic output as well as economic growth.

CHAPTER THREE

3 0 STUDY METHODOLOGY

3 1 STUDY DESIGN

This was a descriptive cross-sectional study that was conducted over a period of four weeks. The study aimed at establishing factors influencing application of EBP among nurses working in medical and surgical wards, SOPC and MOPC.

3.2 STUDY AREA

The study was carried out in medical and surgical wards, SOPC and MOPC at KNH. KNH is the largest referral and teaching hospital in Eastern and Central Africa. KNH has medical, surgical, obstetrics, pediatries, accident and emergency department (A&E) and several other specialized departments. The medical and surgical wards occupied from level four, five, seven and eight in the main hospital which constitute 17 wards including SOPC and MOPC which are on the ground floor. The medical and surgical wards, SOPC and MOPC were purposely selected because of the following inherent features common in these wards:- diversity of medical conditions, diversity of nursing tasks, and larger capacity of patient with lesser nurse ratio, which may be an influential factors in EBP application. Ideally the ratio of nurse to patient in such general ward is 1:6 (Nursing Council of Kenya, 2004). In these wards however, the ratio is much larger 1:30 and even more at times depending on the admission and other factors like shortage of staffnurses (CN. KNH. 2011).

3.3 STUDY POPULATION

The sample size for the study was 156 nurses, which comprises of all nurses working on full time in medical, surgical wards, SOPC and MOPC at KNH. At the end of data collection period the researcher managed to obtain a total of 144 respondents including the nurse in-charges who were subjected to in-depth interviews. The respondent has worked in the respective departments for at least a period of 6 months and above. Identification of study participant was from the list obtained from Chief Nurse Office (Table 1 and 2, pg. 27 and 28).

3.4 INCLUSION AND EXCLUSION CRITERIA

3.4.1 Inclusion Criteria

The study included those nurses who were:-

- Full time employees of KNH and working in medical and surgical wards. SOPC and MOPC.
- Had worked in medical and surgical wards, SOPC and MOPC for at least 6 months because they are familiar with the guidelines and procedures in the wards and may have applied EBP.
- Willing to participate in the study

3.4.2 Exclusion Criteria

Those who were being excluded from the study were those nurses:-

- With less than 6 months experiences in medical and surgical wards, SOPC and MOPC. This is because they (nurses) may not be familiar with procedures and may not have applied EBP.
- Who decline to consent participation in the study.
- On locum from other departments
- Not full time employee of **KNH**.
- Assistant chief nurses- because they do more administrative work than direct care of the patient.

3.5 **SAMPLING FRAME AND STUDY UNITS**

The list of the participating nurses from medical, surgical wards, SOPC and MOPC formed sampling frame and the individual nurses was forming sampling units. Stratification was done for all nurses in each ward for proper representation of all nurses in every ward (medical and surgical wards, SOPC and MOPC). Stratification was based on the proportionate number of nurses and they were randomly selected. Nurses working in medical and surgical wards who were on duty at the time of data collection and who meet inclusion criteria were included in the study. All cadres were included in the study.

3.6 SAMPLE SIZE DETERMINATION

The sample size was calculated using formula by Cochranes'(1963) cited in Cochran (1977)

$$n = \frac{Z^2 p(1-p)}{d^2}$$

n=the desired sample size

Z= is the standard normal deviate at the required confidence level set at 1.96 which corresponds to 95% confidence interval.

P= is the estimated proportion of nurses (target group) who apply EBP. Following the study by Dysart and Tomlin (2002). the proportion of the nurses that apply EBP were estimated at 23.4% (0.23) out of 1500 being studied. Therefore 0.23 will be used as the P value.

d= is the significance level at the confidence interval of 95% which is (0.05)

$$(1.96)^2 \times 0.23 \times (1-0.23) / (0.05)^2$$

$$(1.96)^2 \times 0.23 \times 0.77 / (0.05)^2$$

$$n = 272$$

Because the population is less than 10,000. the sample will be adjusted using second formula Fisherl 998)

n_i=is desired sample size when population are less than 10,000

n=is the sample obtained from the above formula being =272

n =number of the identified population being= 370

$n_f = n / (1 + n/N)$

$n_r = 272$

$1 + (272/370)$

Therefore, $n_f = 156$

= 156

The calculated sample size is 156. In total 156 nurses were sampled.

3.7 SAMPLING METHOD

KNH was purposely selected for being the largest hospital in Kenya and that the hospital employed the larger number of nurses at any given time. Medical and surgical wards and the MOPC and SOPC was purposely selected because of its inherent characteristics. The nurses in these wards were stratified accordingly, namely, 4A to D, 5A, B, SOPC and D, 7A to I) and 8A to D. MOPC. Simple random sampling per ward was done in order to be provided the questionnaires. Based on the determine sample size, proportionate allocation for each ward was determined (example given below of ward 4A)

3.8 PROPORTIONAL ALLOCATION OF NURSES PER WARD

Desired proportionate sampled size allocation was = $(n_i/N_2)n_r$,

Where n_i = number of nurses per ward

N_2 =number of nurses in all sample group

n_p = desired sampled size (as per fishers' 1998 formula is 156 as calculated above)

Therefore proportionate allocation was calculated for each ward, as generated in the table below.

For example. Ward 4A

$$(26/374)156= 11$$

Therefore 11 nurses were randomly selected from ward 4A and subjected to the questionnaires. This was done by randomly picking every 2nd nurse on duty roster, every shift and was willing to participate. The process was repeated for each ward, both surgical and medical, SOPC and MOPC until the desired sample size of 156 obtained. The researcher obtained a total of 144 nurses for the study inclusive of 14 nurse in-charges for in-depth interview. The results of all the calculation for the initially targeted respondent were stipulated in the tables below:

TABLE 1: MEDICAL WARDS

Wards	Total No. of nurses per ward	Sampled No. of nurses per ward
7A	21 (21/374)156=9	9
7B	23 (23/374)156=10	10
7C	21 (21/374)156=9	9
7D	22 (24/374)156=9	9
8 A	22 (22/374)156=9	9
8B	19 (19/374)156=8	8
8C	21 (23/374)156=8	8
8I)	24 (24/374)156=10	10
MOPC	21 (21/374)156=9	9
Total	194	81

Note- 156 is the total sampled size of all the nurses in both wards, including nurse manager in-charges of the wards

TABLE 2: SURGICAL WARDS

Wards	Total No. of nurses per ward	Sampled No. of nurse per ward
4A	26 (26/374)156=11	11
4B	21 (21/374)156=9	9
4C	24 (24/374)156=10	10
4D	26 (26/374)156=11	11
5A	26 (26/374)156=10	11
5B	20 (20/374)156=8	8
5D	23 (23/374)156=9	10
SOPC	13 (13/374)156=6	6
Total	176	75

3 9 DATA COLLECTION

Data was collected using self administered structured questionnaires (Appendix II). Out of the sampled size of 156 nurses who were targeted for the questionnaires the researcher managed to reach 130 nurses for the questionnaires and 14 nurse managers for the in-depth interview. A total of 144 respondents were reached at the end of data collection period. Nurse Managers were not included in the questionnaire to avoid duplication of work. In-depth interview guide (Appendix III) was used to guide the interview.

3 10 DATA COLLECTION PROTOCOL

Since the data collection instrument was self administered questionnaire, the process was done at the convenience of the nursing staffs. Nurses were requested to complete the questionnaire at their convenient time so as not to interfere with daily ward routine. Permission of the nurse manager was sorted and questionnaires distributed to the nurses after the morning report and were requested to complete during tea breaks, or lunch breaks. This was to minimize loss of the questionnaires. Both researcher and research assistants were available to assist with the questionnaires as necessary. Interview was also held at the time which was agreed upon in a quite environment.

3.11 STUDY VARIABLES

3.11.1 Independent variables

- Level of education/qualification and experience.
- Nurses support and Management support.

- Age and Gender
- Availability of research data and resources

3.11.2 Dependent variables/Outcome variable

- Application of EBP

Intervening variable

- Attitudes to EBP

3 12 STUDY INSTRUMENT

Self administered structured questionnaire (Appendix II) was used for data collection. The structured questionnaire has advantage of being economical in terms of time in data collection. The questionnaires were both open and closed ended type of questions. The questionnaire was divided into two parts; Part I: Socio demographic characteristic of the participants; Part II Factors that influence EBP application. In-depth interview was held with the nurse manager in-charges. Because of the administrative work they (nurse manager) perform on top of patient care, they may know and share information on factors that influence EBP application in medical, surgical wards, SOPC and MOPC.

3.13 PRE TESTING STUDY INSTRUMENT

Study instrument was pretested in burns unit at KNII. A total 20 nurse were given questionnaire. This was because of time constraint and the fact that the burn unit had some similar inherent

characteristic as medical and surgical at KNH. Pretesting was done to ensure reliability and that all information required for study were included in the study. Pretesting will give an estimate time needed to collect the data and helps in eliminating the ambiguous question before actual data collection.

3 14 TRAINING OF RESEARCHER ASSISTANTS

The two research assistants were registered nurses, one employee of KNH and the other master's student in first year were sorted. The selection of the two assistants was based on the fact that they had knowledge of research and were able to guide the participant. The principal researcher trained the two researcher assistants on use of the research tool, how to administer questionnaires, collection of complete and reliable information and to ensure the questionnaires was completed. Adherence to participants confidential and privacy were discussed. Principal researcher ensured research assistants were well conversant with all instructions in questionnaires and questions to minimize error during data collections.

3 15 DATA CODING, QUALITY CONTROL, ENTRY AND ANALYSIS

Data was entered into databases designed in MS Access. Data was cleaned and checked for completeness, followed by verification for validity of responses. The databases with a list of valid entries for closed ended (objective) questions and range checks for continuous variable entries to minimize errors during data entry. Coding was done at the data entry stage with all variables that were categorical being stored as coded data and ensuring that labels are attached to each code. Data cleaning was done on completion of data entry and any inconsistencies that was noted are resolved by re-examining the questionnaires. Quality control was observed through

verification of Questionnaires for completion immediately after each participant handed in the questionnaires and any missing information or clarification was sorted from the participant.

Analysis was done using Statistical Package for Social Sciences (SPSS) version 17 contained in personal computer (PC). Data was stored in both source records and computer databases accessible only to the authorized persons through out the study. Each question in the questionnaires was summarized and frequencies obtained. Statistical measures of central tendency and correlation was used in determining the relationship between study variables and outcome variables. The result was presented in form of tables, pie charts and graphs. The Chi Square determined association between independent and dependent variables, with statistical significance at $p < 0.05$. Multivariate logistic regression was used to adjust for any confounding factors and to adjust for possible intervening factors.

The main outcome of the study was reported as the percentage of nurses applying EBP in the medical and surgical wards, SOPC and MOPC at KNI I. Nurses' responses on factors influencing application of EBP was cross tabulated with the main outcome (EBP application). Next, chi square tests were conducted and the appropriate chi statistic reported along with its p-value to identify the factors showing statistically significant associations with EBP applications. Similar analysis was conducted between socio-demographic factors and EBP application to identify nurses' characteristics that influence their application of EBP. A cutoff value of $p = 0.05$ was used to determine statistical significance in all analysis conducted for this study. These results were presented as bivariate tables of EBP application versus each demographic factors and Likert scale response. Multivariable analysis was conducted using logistic regression models to explore independent associations between EBP application and the factors showing significant

association in the bivariate analysis.

The nurse managers' knowledge, role and audit processes regarding EBP were determined by analyzing data from in-depth interview. The data from in-depth interview was analyzed using qualitative methods and organized into main emerging themes on issues around EBP applications. The frequently identified approaches were reported in terms of perceived value in quality patient care outcome. The study results generated were presented in bar graphs, pie charts, and tables. Dummy tables for presenting study results were also included in appendix V.

3 16 MINIMIZATION OF BIAS

This was done through; Pre-testing of questionnaire to ensure all information required for the study was included. Restricting the study population to nurses with six months experience and who were full time employees of KNH. Training of research assistants was done on administration of questionnaire and ensuring all questionnaires were checked for completeness before coding of data.

3.17 ETHICAL CONSIDERATIONS

Ethical clearance was obtained from the University of Nairobi and Kenyatta National Hospital Ethics and Research Committee (UON/KNH-ERC-P.O Box 20723,00202, Nairobi) as well as Ministry of Science and Technology, and KNH chief executive officer (CEO)

The purpose of the study was explained to the participants by the researcher before consent was signed to participate in the study.

All information obtained was treated confidentially and was used for the purpose of the study only.

There was no compensation for participating in the study.

The author declares no conflict of interest in this study. It was being carried out purposely for academic achievement.

3 18 STUDY LIMITATIONS

Limited study on evidence based practice was done in Kenya, particularly on factors influencing EBP, therefore literature on EBP in the context of Kenya was not readily available. Literature on EBP was mostly obtained from developed countries particularly Australia and America. Time and the resources constraints has made the rescarcher to focus on general wards and its outpatients clinics as it may not be feasible to cover the wider hospital. Getting nurses to fill in the questionnaires was not easy due to shift work and busy ward schedules.

3.19 DELIMITATION

Since KNIT is the largest hospital in Kenya and employs large number of nurses at any given time the study findings may apply to some extent to nurses in the other hospitals, especial public hospital.

4.0 CHAPTER FOUR

4.1 RESEARCH FINDINGS

Introduction

The findings of the study are presented in this chapter. The study recruited a total of 144 nurses inclusive of 14 in-charges who were subjected to in-depth interviews. The participants were both from medical and surgical wards, SOPC and MOPC departments at KNH. Out of the 144 nurses, 12 were based in the outpatient clinics while all the remaining nurses were found within the wards. The analysis of the characteristics of the nurses showed the following:

Age

The age of the nurses ranged between 21 and 60 years. The average age was 39.7 years (SD \pm 8.4). The modal age group was 31 to 40 years with 69 (49.2%) nurses (Figure 1). The youngest and oldest age groups had 14 (10.8%) and 16 (12.3%) nurses, respectively.

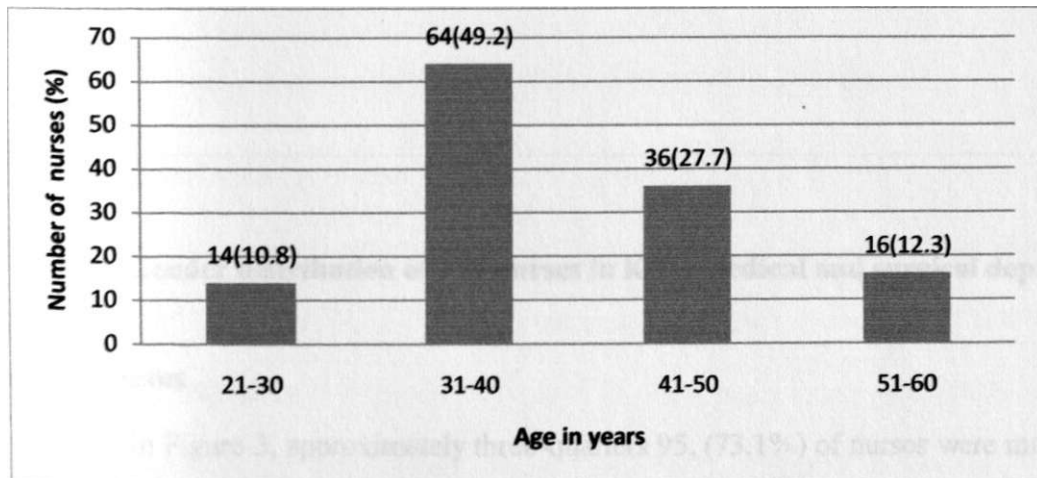


Figure 1: Age distribution of nurses at KNH medical and surgical departments

Gender

As shown in the figure 2 below most of the nurses in this study were female representing 92 (70.8%). The remaining 38 (29.2%) nurses were male. There was a statistically significant association between gender and age of nurses (Fisher's exact $p = 0.016$). All the sixteen nurses above 51 years of age were female. Female nurses accounted for 7 (50%), 46 (72%), and 23 (64%) of nurses aged 21 to 30 years, 31 to 40 years, and 41 to 50 years, respectively.

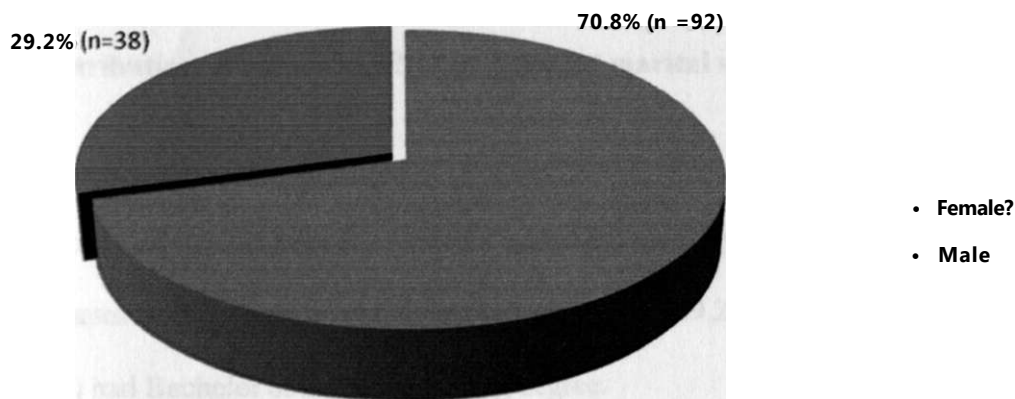


Figure 2: Gender distribution of 130 nurses in KNH medical and surgical departments

Marital status

As shown in Figure 3, approximately three-quarters 95, (73.1%) of nurses were married while 21 (16.2%) nurses were single. Those who were widowed 8, (6.2%) and divorced, 6 (4.6%).

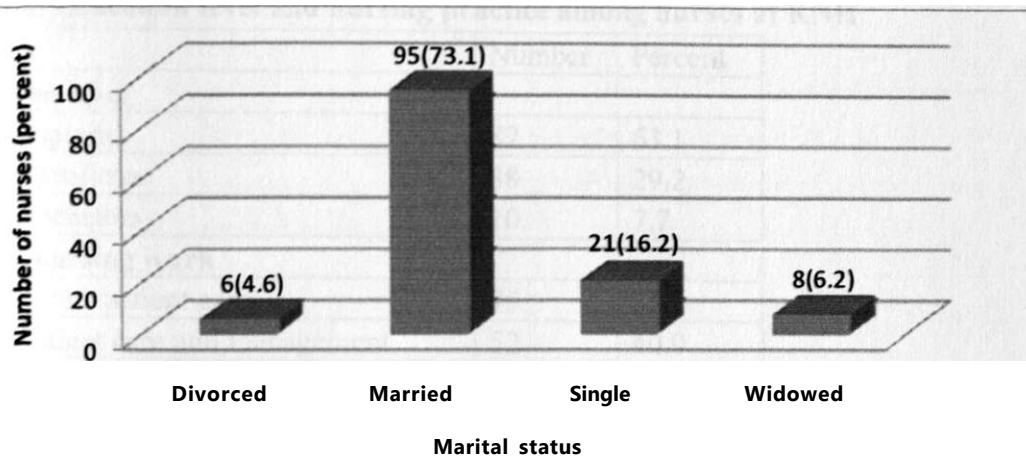


Figure 3: Distribution of nurses in KNH in different marital status

Education level and nursing practice

Table 4.1 shows the training level of nurses and their nursing experience. The majority, 82 (63.1%) of nurses had diploma level training in nursing, 38 (29.2%) had certificate qualifications and 10 (7.7%) had Bachelor of Science Nursing degree.

Duration in nursing profession or duration of practice in nursing

The duration of nursing practice varied among nurses from less than five year to 26 years. 47 (36.2%) nurses had practiced for a period of between 11 and 15 years, 35 (26.9%) had practiced for at least 15 years and 33 (25.4%) had nursing experience of between 6 and 10 years. More than half (57.7%) of the nurses were involved in direct patient care while 40% engaged in both direct patient care and management duties (Table 4.1). Majority of nurses, 75 (57.7%) were currently working in medical department and 55 (42.3%) worked within surgical department.

Table 4.1: Education level and nursing practice among nurses at KNH

	Number	Percent
Education level		
Diploma	82	63.1
Certificate	38	29.2
Bachelors	10	7.7
Type of nursing work		
Direct patient care	75	57.7
Patient care and management	52	40.0
Management	3	2.3
Area of practice		
Medical ward or clinic	75	57.7
Surgical ward or clinic	55	42.3
Duration of nursing practice		
0 to 5 years	15	11.5
6 to 10 years	33	25.4
11 to 15 years	47	36.2
Above 15 years	35	26.9
Total	130	100.0

Evidence based nursing practice

As shown in Figure 4, 39 (30%) of nurses reported they fully practiced **EBP** and the remaining 101 (70%) nurses reported either practicing evidence based nursing to some extent or not at all. Among the 101 (70%) who did not practice **EBP** fully, 23 (17.7%) nurses reported not practicing **EBP** at all while 68 (52.3%) reported that they somewhat practiced evidence based nursing (Figure 4).

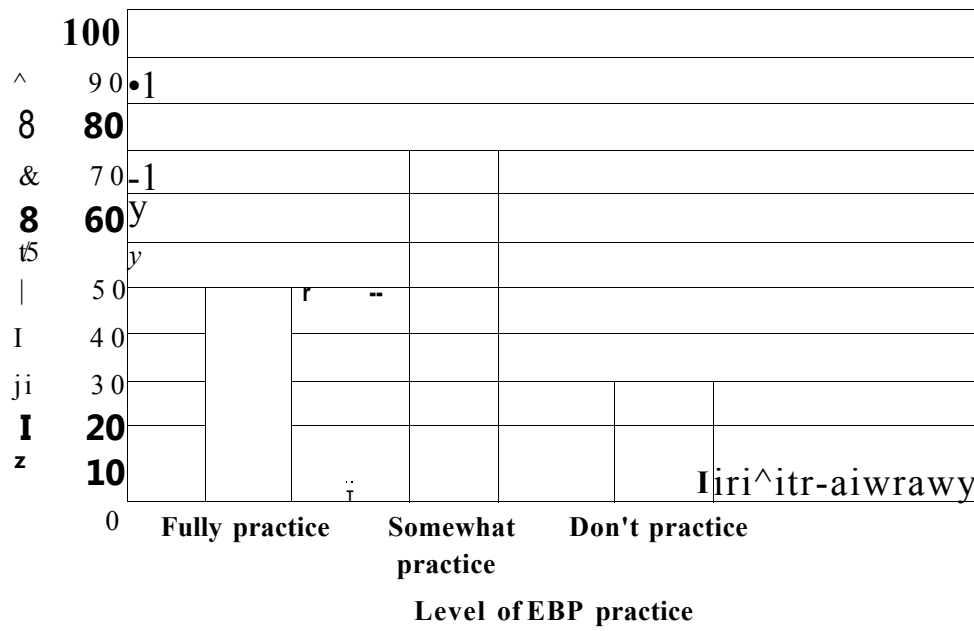


Figure 4: Reported application of evidence based nursing practice by nurses in medical and surgical departments in KNH

Demographic factors and EBP application

As shown in Table 4.2 below, application of EBP did not show significant associations with nurses age ($\chi^2 = 6.36, p = 0.095$), gender ($\chi^2 = 0.347, p = 0.556$) or marital status (Fisher's exact $p = 0.709$). Between 50% and 83% nurses in the different age groups did not fully practice EBP. Only 29 (32%) of female and 10 (26%) of male reported that they fully practiced EBP.

table 4.2: Demographic characteristics of nurses and association with EBP

	EBP practice			P - value
	Fully practice	Don't fully practice		
Age in years:				
21-30	5(36)	9(64)	6.36	0.095
31-40	20(31)	44(69)		
41-50	6(17)	30 (83)		
51-60	8(50)	8(50)		
Gender:				
Female	29 (32)	63(68)	0.347	0.556
Male	10(26)	28 (74)		
Marital status:				
Divorced	1(17)	5(83)		0.709*
Married	31 (33)	64 (67)		
Single	6(29)	15(71)		
Widowed	1 (13)	7(87)		

*Fisher's exact test

Nursing self-rating on critical reviewing EBP and their application of EBP

There was a statistically significant association between nurses self-rating of their ability to review EBP literature and their EBP application (Fisher's exact p = 0.04). The nurses with greater confident in reviewing literature were more likely to practice EBP with 15 (39%) of confident nurses, 21(31%) of fairly confident and 1(6%) of poorly confident nurses reporting that they fully practiced EBP (Figure 5).

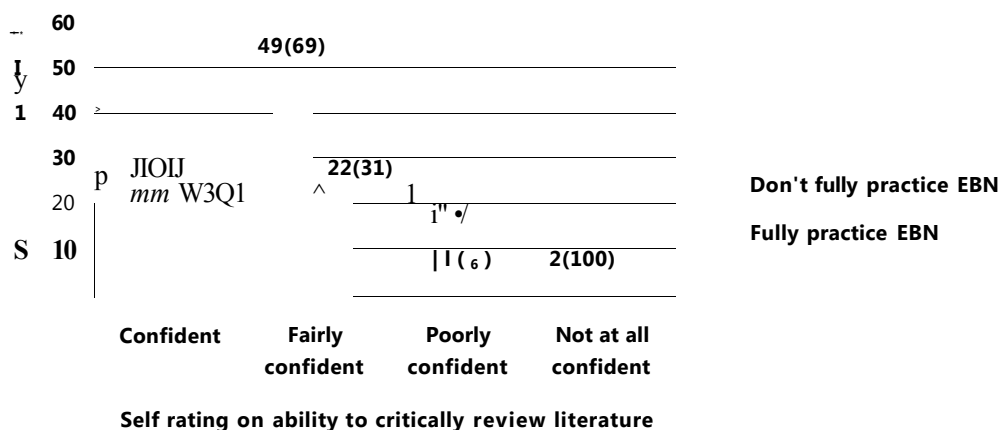


Figure 5: Nurses' self-rating on ability to critically review EBP literature

Guidance for nursing practice

Most nurses reported that their practice was commonly based either on hospital policy guidelines, 45 (34.6%) or ward routine, 45 (34.6%). However only 7 (5.4%) nurses reported research evidence guided practice.

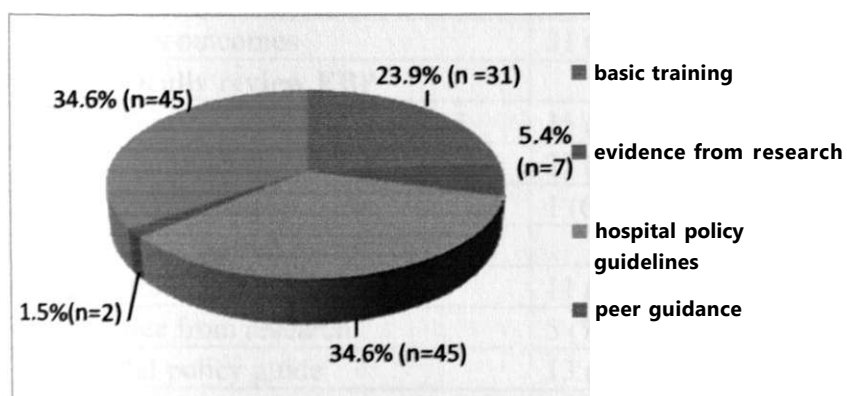


Figure 6: Sources of information guiding nursing practice among nurses in KNH

Nursing training, practice and EBP application

Table 4.3 shows that. EBP practice was statistically significantly associated with the level of nursing education (Fisher's exact $p = 0.031$). ability to critically review EBP literature (Fisher's exact $p = 0.04$) and the source of guidance for nursing practice (Fisher's exact $p = 0.028$). Perception of nurses on the impact of number of allocated patients per shift on EBP ($\chi^2 = 4.29$, $p = 0.038$) was as well statistically significant. Nurses with bachelor's degrees 6 (60%) were more likely to practice EBP than those with lower nursing qualifications. 5 (71%) of nurses whose practice was guided by evidence from research were fully practicing EBP compared to those 11 (36%) depending on basic training, hospital policy 13 (29%) or ward routine 9 (20%).

Table 4.3: Nursing training, practice and EBP application

EBP influence by:	EBP practice		χ^2	P value
	Fully practice	Don't fully practice		
Level of professional education				
Bachelors	6 (60)	4 (40)		0.031 *
Certificate	14(37)	24 (63)		
Diploma	19(23)	63 (77)		
Perceived EBP impact on patient care				
Does not improve outcomes	8(47)	9(53)	2.71	0.1
Improves outcomes	31 (27)	82 (73)		
Ability to critically review EBP				
Confident	15 (39)	23 (61)		0.04*
Fairly confident	22(31)	49 (69)		
Poorly confident	1 (6)	15(94)		
Nursing practice guided by:				
Basic training	11 (36)	20(64)		0.028*
Evidence from research	5(71)	2 (29)		
1 hospital policy guide	13 (29)	32(71)		
Peer guidance	1 (100)	0		
Ward routine	9(20)	36 (80)		
KBP affected by patient allocation				
No	8(53)	7(47)	4.29	0.038
Yes	31 (27)	83 (73)		

*Fisher's exact test

Computer use and EBP

Computer use at the workplace was rarely reported in this study. Only 2(1.5%) nurses, both working in direct patient care reported using computers at workplace (Figure 7). Computer use was not significantly associated with EBP in this study (Fisher's exact = 0.49).

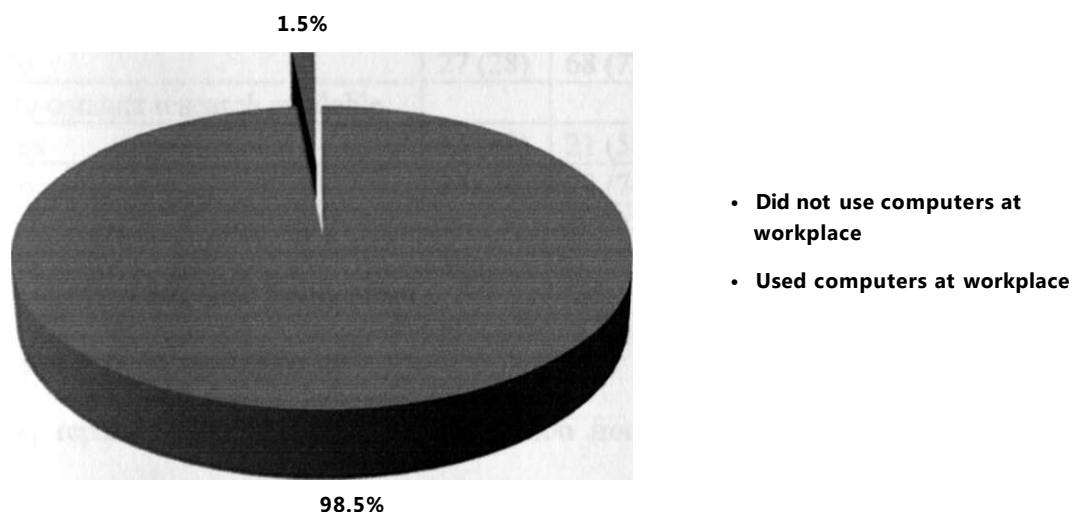


Figure 7: Reported computer use at workplace by nurses at KNH

Time availability and EBP application

Approximately one-quarter of nurses reported adequate time to access EBP material, attend conferences and adequate funding opportunities for research. Only 4(12%) who fully apply EBP agreed that they were given time to access research materials. 12 (34%) who fully practiced EBP were given time to attend to short courses and 15 (42%) had adequate research funding. Table 4.4 shows that EBP application was not significantly associated with frequency of course attendance ($\chi^2 = 0.419$, $p = 0.517$) or availability of research funds ($\chi^2 = 3.227$, $p = 0.072$).

Table 4.4: Reported availability of time and EBP application

	EBP practice		χ^2	P value
	Fully practice	Don't fully practice		
Time given to access research material				
Yes	4(12)	30(88)		0.008*
No	34(36)	60(64)		
Time given to attend short courses				
Yes	12(34)	23 (66)	0.419	0.517
No	27 (28)	68 (72)		
Funding to conduct research available				
Yes	15(42)	21 (58)	3.227	0.072
No	24 (26)	70 (74)		

Available support for EBP application

- **Support from management**

27 (20.8%) reported that they received recognition from ward managers for applying EBP.

Figure 8 shows that most 67 (52.3%) nurses reported that there was managerial support for enforcing EBP and that presence of managerial support always influences EBP application.

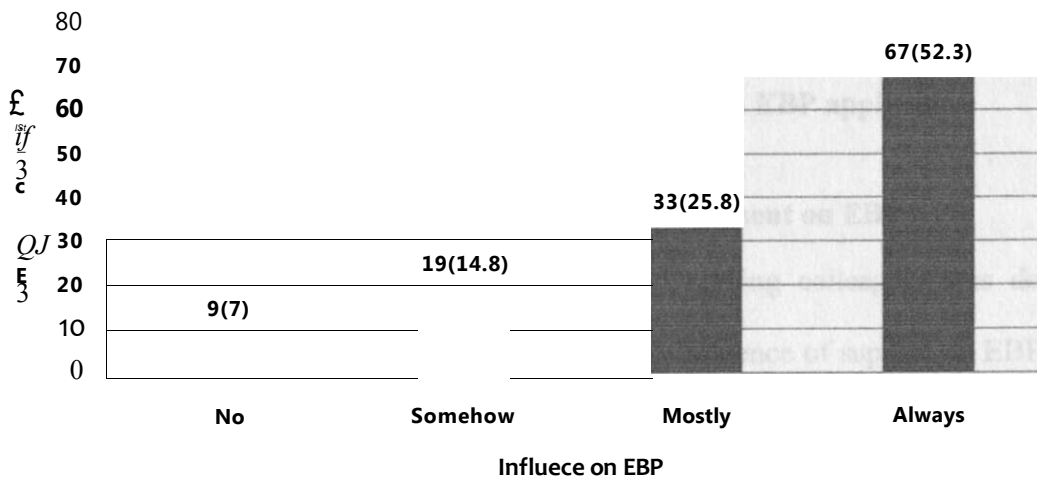


Figure 8: Nurses responses on management support for EBP

- **Support from colleagues and ward in-charges**

Asked to what extent the support received from colleagues influenced their application of EBP, majority of nurses 69 (53.1%) reported always (Figure 8). Similar responses were obtained when nurses were asked the extent to which support received from ward in-charges influenced their practice, 63 (48.5%) nurses responded always.

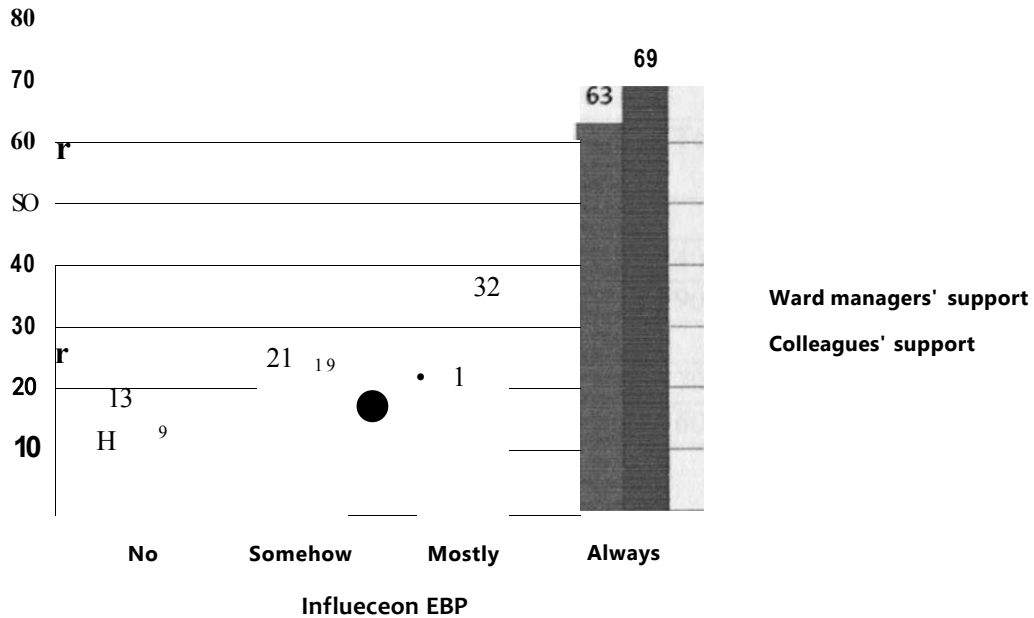


Figure 9: Influence of support from nursing colleagues on EBP application

Impact of support from nursing colleagues and management on EBP

Overall influence of support from management and nursing colleagues was determined by calculating a score (range 4-12) based on the reported influence of support on EBP application. Result of t-test showed that support from management and nursing colleagues did not differ significantly between nurses who fully practiced EBP (mean = 8.94) and those who did not fully practice EBP (mean = 9.57), t = 1.17, p = 0.246.

Research data availability and EBP

4 (30.8%) nurses reported that updated information on EBP was provided in the ward, and 70 (53.9%) indicated that research material had been made easily accessible. Table 4.5 shows that availability of research material was not significantly associated with EBP practice.

Table 4.5: Nurse reported access to research material and EBP practice

	EBP practice		Total	x ²	P value
	Fully practice	Don't fully practice			
Updated EBP information provided					
Yes	14(35)	26 (65)	40 (30.8)	0.688	0.407
No	25 (28)	65 (72)	90 (69.2)		
Research material easily accessible					
Yes	20(29)	50(71)	70 (53.8)	0.147	0.701
No	19(32)	41 (68)	60 (46.2)		

Nurses' attitudes towards EBP

Among the 130 (100%) nurses in the study 47 (36.4%) reported that personal attitudes towards research always influences EBP, 8 (6.2%) said attitudes did not influence EBP, 28 (21.7%) responded somewhat, and 46 (35.7%) responded mostly it influence. Nurses' responses to other attitude questions are shown in Table 4.6. Overall there was a significant association between nurses' attitudes toward EBP and their practice. Nurses who fully practiced EBP had more positive attitude based on their responses to items in Table 4.6 below (mean = 4.41) compared to those not fully practicing EBP (versus mean = 3.76). / = 3.34. p = 0.001.

table 4.6: Attitude of nurses at KNH towards EBP

	Number	Percent
Need to increase application of EBP in the nursing care of patient	125	96.2
EBP helps in making decision on the care plan	121	93.1
r BP has advantage over current practices	118	90.8
EBP not compatible with current practice in the ward	34	26.2
EBP too complex to be integrated to current practice	34	26.6
EBP undermines nursing profession by being overly scientific	36	27.7
EBP makes no difference to current care provided	27	20.8

Nurses' knowledge on HHP

table 4.7: Nurses' responses on influence of knowledge factor on EBP

Influencing factors	Level of influence on EBP			
	Does not influence	Somehow influence	Mostly influence	Always influence
Ability to search for and retrieving studies	6.3	21.1	32	40.6
Reading and understanding of research material	11.6	16.3	31	41.1
Appraisal skill for EBP	10.9	19.4	31	38.8
Autonomy to practice EBP	10.3	27.8	27	34.9
Know ledge of EBP regularly updated	8.9	16.1	33.1	41.9

Most nurses thought that EBP knowledge always influenced EBP practice. As shown in Table 4.7. 41.1% said reading and understanding research material always influenced EBP application. In addition 40.6% reported that ability to search and retrieve studies always influenced EBP. Appraisal skills, autonomy and regularly updating EBP knowledge were also commonly reported to influence EBP application.

Ability to translate research material into treatment plans

Those nurses who do not fully apply EBP 21 (70%) reported that they were able to translate research material into useful treatment plans. There was no significant difference in EBP

application among nurses who were able to translate research into care plan and those who could not translate research into treatment plans ($p = 0.999$)

table 4.8: Ability to translate research material into treatment plans

	EBP practice		χ^2	p value
	Fully practice	Don't fully practice		
Able to translate research into practice				
Yes	9(30)	21 (70)	0.00001	0.999
No	30(30)	70(70)		

Multivariable analysis

Results of the multivariable logistic regression of factors significantly associated with EBP application are presented in Table 4.9.

The factors that were significantly and independently associated with EBP application after adjusting for possible confounders were nursing education ($p = 0.029$), ability to critically review EBP literature ($p = 0.021$) and attitudes towards EBP ($p = 0.007$). Nurses with negative attitude were less likely to practice EBP (Odds Ratio = 0.49, 95% CI 0.30 to 0.83).

Nurses report that they were poorly or fairly confident in their ability to critically review EBP literature were less likely to fully practice EBP compared to nurses who report that they were confident they could critically review literature. Nurses with bachelors' degree were more likely to practice EBP than certificate and diploma holders.

Table 4.9: Logistic regression of nurses' age, gender and factors associated with EBP application

	Odds ratio	95% confidence interval		Z	P value
Age					
21-30 years	1.00				0.073
31-40 years	0.17	0.02	1.47	-1.61	
41-50 years	0.07	0.01	0.85	-2.09	
51-60 years	0.37	0.02	7.60	-0.65	
Experience					
0-5 years	1.00				0.1
6-10 years	24.83	1.29	479.31	2.13	
11-15 years	29.26	1.38	619.88	2.17	
Above 15 years	17.85	0.57	558.23	1.64	
Nursing training					
Certificate	1.00	.	.	.	0.029
Diploma	0.31	0.08	1.14	-1.76	
Bachelors	6.00	0.33	109.78	1.21	
Ability to review EBP					
Confident	1.00	.	.	.	0.021
Poorly confident	0.06	0.01	0.75	-2.18	
Fairly confident	0.75	0.23	2.38	-0.49	
Guide for practice					
Basic training	1.00	.	.	.	0.451
Evidence from research	5.77	0.53	62.86	1.44	
Hospital policy guidelines	1.59	0.42	6.10	0.68	
Ward routine	1.13	0.29	4.42	0.17	
Research fund availability	1.94	0.65	5.83	1.18	0.24
Attitude towards EBP	0.49	0.30	0.83	-2.69	0.007

ke\ informant interviews on EBP

in-depth interviews were conducted with fourteen ward managers whose characteristics are presented in Table 4.10 below to determine their knowledge on EBP and the extent of EBP application in the wards. The participants were all Senior Nursing officers (n = 13) with the exception of one Nursing officer I who was acting as the unit in-charge. Approximately two-thirds (64.3%) had a diploma and the remaining 35.7% had a higher national diploma in nursing. The length of managerial experience for 50% of participants was between 5 and 10 years.

One nursing in-charge indicated she did not understand EBP. The remaining gave appropriate definitions including scientifically sound, rational practice applied in patient care.

Table 4.10: Characteristic of nurse managers interviewed on EBP at KNH

	Frequency (%)
Ward manager's designation	
Senior Nursing Officer	13 (92.9)
Nursing Officer I	1 (7.1)
Level of education	
Diploma	9(64.3)
Higher diploma	5(35.7)
Experience as nurse manager	
Less than 5 years	3(21.4)
5 to 10 years	7 (50)
Above 10 years	4(28.6)

3 (21.4%) nurse in-charges reported that their units had guidelines on EBP application and the remaining nurses (n = 11) did not have a written formal EBP guidelines in their units. The available guidelines covered the following areas: TB, diabetes care, surgical care and general nursing (NCK guidelines). In all these three units with EBP guidelines, the in-charges reported

That guidelines were communicated to staff through ward meetings. In one of the units the guidelines were kept in staff common areas and in another ward availability of guidelines were documented in ward records with other ward equipment.

HBP application was done in 9 (64.3%) out of the 14 units. The nurse in-charges roles in application of EBP included supervision of care, availing updates to staff, and promoting use of guidelines.

Four nurse in-charges reported that HBP application was done in their units. There was no record of the evaluation criterion. The frequency of informal evaluation was not reported in 2 (14.3%) units, was done monthly in the third unit and quarterly in the remaining unit. Evaluation outcome was recorded in patients files. Over 90% of the nurse in-charges reported that the main hindrances in application of EBP were lack of resources such as materials and equipments for providing patient care, staff shortages and time constraints. One respondent stated that ['with over 100 patients in the ward and only two nurses on duty, there is no moment to give quality patient care.' worse still there is nothing to work with']. Overall the nurse managers interviewed agreed that availability of resource is corner stone in provision of quality patient care. A member reported that "if resource such as material for wound dressing is available and there are enough nurses to do the work, it will improve quality outcome for patient' thus nurses moral and attitudes towards work.

Most of the respondents agreed that the approaches to EBP application are as follows;

- Availing resource one respondent said that 'sometime we may have the information on EBP but there is no resource to apply, for example dressing material'

- Realizing EBP has advantage over the current practices- one respondent stated that 'application of EBP will reduce the patients long stay in the ward'
- Accessibility to research material- by availing computers with internet connections in the ward (at least one computer per ward). Currently there are no computers available in these wards.
- Regularly updating staff on the latest research evidence related to conditions in the ward- by the training and development personnel.
- Provision of clear guidelines on EBP application and formal evaluation criteria after implementation.

CHAPTER FIVE:

5.0 DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Discussion

Overall the ability to review HBP literature, nurse education (qualification) and nurses* attitudes : > EBP application are the main factors that are identified as having significant relationship to EBP application. As the health care services moves towards EBP applications these factors should be given outmost attention in order to achieve quality patient care. The reported factors that had association with EBP among the nurses sampled were analyzed using descriptive statistics and logistic regressions.

Demographic characteristic and EBP application

According to Hicks (1995) as documented in Endrawes (2000), age difference play a role in nurses" attitudes towards use of EBP; that younger nurses are better in valuing, conducting and use of research finding. However, results in this study contradict this finding; in that age of a nurse is not significantly associated with application of EBP. There may be other factors such as cultural and country variables not captured in this study that may explain differences in findings of these two studies. As with other demographic factors, such as gender, marital status had no influence on application of EBP

Nurses training background and EBP application

The descriptive analysis revealed that nurse training background is associated with EBP application. In particular, nurses with degree qualification (Bachelor of Science Nursing) are more likely to practice EBP nursing. This finding is consistent with prior research studies. For example, Varnell et al. (2008) documents evidence of strong positive relationship between nurses' education and attitudes towards evidence based practice. In addition, and consistent with finding in this research, Guillaume et al. (2009) conducted cross sectional survey of 855 nurses in 87 hospitals in England and found that nurses with masters qualifications are better placed to implement evidence based practice. With fewer nurses' having degree qualifications and none with masters, this then may justify one reason for low application of EBP in medical, and surgical wards at KNI I.

Availability of time, workload and EBP application

Among the nurses who utilized EBP, time available to access research material is an important factor, compared to time used to attend short courses. Though funding may be a useful factor, time appears to be a major constraint in exploring knowledge base and applicability of EBP concept in the workplace. Research findings by Penz and Bassendowski (2006), on evidence-based nursing in clinical practice supports findings in this study, that time is a constraint to application of EBP. Upton (1999) also documents clinical workloads as a major constraint to EBP application in clinical setting. In KNH setting, this is quite relevant due to heavy work load, for example patient to nurse ratio is so high (40:1). when ideal number is meant to be 1:5 (WHO 2001). This fact meant that nurses have limited time to blend their practice with research knowledge.

support from management and colleagues and EBP application

Support from management and nursing colleagues was an important factor that explains nurses' application of EBP. In a study of registered nurses in a hospital in the US, Thiel and Ghosh (2008) report that, majority of nurses (72.5%) relied on colleagues and peers in implementing evidence based nursing practice. In a related study by Hart, Eaton, & Buckner (2008), nurses also rated their managers, senior nursing administrators, and staff nurses higher than hospital administration in supporting changes to practice based on research, this research finding is in line with this study finding where nurses rated colleagues support high in obtaining EBP materials. Therefore collegial support is an important variable as consistent with this research finding. In developing country like Kenya, more so in public hospitals where access to research material is limited due to accessibility and affordability many nurses relied on colleagues for latest research information.

Nurses' attitude, EBP Knowledge and EBP application

Nurses' attitude towards EBP was significantly associated with application of EBP. Nurses who fully practiced EBP had positive attitude to EBP compared to nurses who did not fully applied EBP. This has been supported by Hart, Eaton, & Buckner (2008) in the study on Effectiveness of a Computer-Based Educational Program on nurses' knowledge, attitude, and skill level related to EBP. In the study the authors found that although nurses have positive attitudes about using research to support best nursing practice, the knowledge gaps and skills in retrieving research publications, evaluating the evidence, and incorporating the evidence into practice remain an obstacle. This is quite evident in KNH clinical settings where the low application of EBP is evident as attributed by knowledge and limited resources gap.

As is plausible, nurses' EBP knowledge always influenced EBP practice. Ability to read and understand research findings to a large extent explains nursing practice of evidence based patients care. About 40% of nurses indicated knowledge on ability to search and retrieve research studies. Varnell et. al (2008) conducted study which recruited 49 nurses for study as "EBP champions". The nurses were on eight weeks programs to evaluate the effectiveness of an accelerated educational program on the attitudes toward and implementation of EBP. The study concluded that nurses who attended the program and gain knowledge had the potential to significantly improve beliefs and attitudes about EBP. This study also suggested that administrative support and collaboration between academia are essential for successful intervention. With some caution one can conclude that this finding is applicable in our KNH clinical settings.

Logistic regression analysis of nurses' age, gender and factors associated with EBP application

Nurses were classified into two categories: those who practiced EBP and those who do not. Results of the logistic regression analysis indicate that nurse training, ability to critically review evidence based literature, and attitudes towards evidence based practice influence application of EBP.

Nurse personal attitude towards evidence based practice ($P=0.007$) is the most significant factor explaining application of EBP in patients care. Although attitude is an important variable, research indicates that there are other important variables that influence nurses' attitude towards evidence based nursing practice. For instance, Upton and Upton (2005) documents that national policy initiatives has positive effect on nurses attitudes towards EBP. whereas, Dugdall &

Watson (2009) present evidence of nurses qualifications (degree or no degree) impacting on nurses' attitude to application of EBP in clinical environment.

Effective EBP education requires more than just a comprehension of skills and knowledge approach. Nurse educators' plays great role is creating positive students attitudes towards EBP in their learning through generating an enthusiasm about EBP concepts and helping in diminishing the commonly found negative attitudes many nurses have about research. According to Johnston & Fineout-Overholt, (2005) this is achieved through questioning nurses' practice, developing a sense of "uncertainty" about the effectiveness of traditional practices, then generating burning clinical question, that leads nurses to search for literature. This finding will be applicable and of relevance to KNH situation where this study finding have noted that nurses' attitudes influence EBP application and that nurses with negative attitude are less likely to apply EBP in their practice.

Nurses training defined as the academic qualifications (certificate, diploma and degree) also explain nurses' utilization of evidence based practice in the work place. Consistent with the finding by this research. Dugdall & Watson (2009) provide strong ($p < 0.001$) evidence of the relationship between nurses training (qualifications) and application of evidence based practice. According to Dugdall & Watson, there are statistically significant differences in attitudes between nurses with first degree qualification and those without first degree towards use of evidence based practice in clinical environment.

This finding has further been supported by Rhodes (1988) who stated that education is linked to decision making, with nurses who are prepared at higher level of education found to have willingness to make better decision when it come to patient care. The finding have relevance in the setting of KMI where there are less graduates nurses who may have ability to critically **review** and enforce application of EBP.

Melnyk. et al. (2004) revealed that health care systems need to implement interventions that not only increase nurses' EBP knowledge and skills, but also strengthen their beliefs about the benefit of evidence-based care. The author further suggested that, this is done through EBP mentors who will accelerate a more rapid shift toward evidence-based nursing practice. This suggestion will be of value in KNH clinical setting where nurses are overwhelmed with heavy workload impacting on EBP practices.

In another related study by McInerney & Suleman, (2010) it was found that if students are exposed to learning opportunities that will include searching for latest research information and critical appraisal, it will have impact towards their attitudes to EBP application in clinical setting.

The source of guidance also had statistically significant influence to EBP application. Nursing services have been given lip services and most decisions based upon tradition, hospital guidelines, opinion, common sense and intuition without proper guidance from research evidence (O'Callaghan. 2001), Therefore the findings in this study is not surprising, that nursing practices are either based on basic training or hospital guidelines with very little guidance from research evidence. The author further stated that the gap between the research guiding clinical practice, and actual practice persist because more research arc being done by academicians than nurses in clinical setting. This is an eye opener for nurses in clinical setting to be involved in

researches in collaboration with academicians to strengthen research work in clinical settings in order to improve quality care outcome.

Accessibility to research material was greatly hampered because of lack of computers at work place with majority of nurses who are working in direct patient care having no access to computer at work place. Computer availability in work station is a necessity with current technology explosion, for quick reference and retrieval of research materials. Patricia et al (2008) agreed that computer-based education is an effective approach that can be used by nurse leaders in health care organizations to educate and engage nurses in EBP initiatives and research utilization. Therefore installation and use of computer in the KNH setting is an important factor in order to access latest EBP materials.

WARD MANAGERS' KNOWLEDGE AND PRACTICE

Nurse managers understanding of EBP

Nurses" have professional obligation to patient and the society to provide care that is constantly reviewed, researched and validated. On this note, therefore in-charges have responsibility to direct and guide nurses in provision of best care that are evidence based.

According to the responses from in-depth interviews over 93% of the respondent reported that. HBP is scientifically sound, rational driven practices aiming at individualized quality patient outcome. One in-charge further stated that "EBP application has to be documented and evaluated continuously". Varnell et. al. (2008) supported this assertion stating that EBP is a process of using best available evidence in the context of individualized needs and values to direct clinical decision making with the goal of improving outcomes.

Guidelines on EBP

Clinical practices guidelines are statements that are systematical developed to assist both practitioner and patient on the decision for appropriate and specific care for particular clinical circumstances. The issues on guidelines use is not a new phenomenon. It was there even during ancient time. The aspect that is new is emphasis on systematic, evidence based guidelines, structures and incentives that will support and the manner of evaluation (US department of health, ND, 2004).

According to the respondents there was no definite answer as to why there were no guidelines on EBP. with one respondent affirming that "they were not provided". She further stated that ("even if she had the best research evidence, there were no resource to work with".

The in-charges who had the manual in the ward, commented that "the communication are done during morning report and through report book which is accessible to staff".

Nurse managers role on EBP application

Ideally in the developed world, clinical nurse managers (CNM) are the in-charges of a unit and are mandated to assist nurses to gain the knowledge and skills related to evidence utilization in order to promote positive patient outcomes. According to Goudreau et al. (2003) cited in Melnyk et al. (2004), CNM fulfill such professional mandate through their expertise "at bridging the gap between what is common clinical practice and the state of current science through translation of research into action. On the contrary this is not the case in KNII clinical setting where the in-charges have lower level of educational qualifications and have no access to EBP materials. One respondent revealed that 'she ensures wound dressings are not done routinely, rather she assess

for infection and granulation'. She further support her argument that "this is in accordance to research information gathered from seminars she attended".

Worldwide nurse managers face ongoing difficulties in making a reality of EBP and in their role as advocates for EBP implementation. These difficulties are attributed to limited resources in the face of economic challenges worldwide. Wilkinson et al (2011). in their study on An Exploration of the Roles of Nurse Managers in Evidence-Based Practice Implementation, revealed that role of nurse manager in facilitating evidence-based practice is under-articulated, largely passive and currently limited by competing demands from lack of resources in relation to the needs of patient.

Elsewhere Gifford et al (2007), conducted study on Managerial leadership for nurses' use of research evidence criteria. The study was both quantitative and qualitative. Three activities found in quantitative results revealed that nurse managers use of research are being influenced by: managerial support, policy revisions, and auditing. Qualitative studies showed organizational issues such as barriers to managers' abilities to affect research use. role modeling and valuing research use will affect EBP application. The study concluded that for nurse managers roles to be effective, they needed to play both facilitative and regulatory roles in order to influence research use. This finding is consistent with the findings in this research whereby the nurse managers' attributed the low application of EBP to managerial support in terms of resource provision.

Benefits of EBP application and Evaluation

According to the respondent the benefit of EBP application is short stay for the patient, and knowledge gains for the nurse. One respondent further stated that "EBP is facts supported thus can be justified and EBP instills sense of responsibility for the person who does the care". Most

respondent said that "there were no formal evaluation criteria, and the only record kept are in patient files". The respondent further stated that the most important benefit of the study were , reduction in mortality and morbidity among patient and to the nurses are motivation to continue in research, which will lead to professional growth, and development.

According to study done by Stetler, & Caramanica, (2007) the evaluation of EBP application provides suggestive internal evidence regarding potential benefits of one component of a long-term. valued EBP initiative. Evaluation also raised questions regarding structural aspects of the initiative, identified barriers to progress, it provides information for dialogue and planning. However no formal evaluation is being done on EBP application in this study finding and the manager stated that the only records of the EBP applied are kept in patient files.

Hindrances to EBP application

Resource availability plays a great role in facilitating application of EBP. This aspect of resource availability came out greatest in descriptive analysis, whereby over 90% of the respondent stating that lack of the resources such as manpower, equipments and time availability are the main hindrance to application of EBP. French (2005) supported the finding by stating that resource constraints are one of the factors influencing decision making in EBP application. One respondent further commented that "diagnostic procedures, that is, laboratory test takes long". When asked how this can be a hindrance' she added ["in case of mycobacterium tuberculosis", starting treatment early will have reduce chances of spread of bacteria but laboratory test takes long"]. Another one lamented ["even simple material like pens are not available, leave alone expensive dressing material like "unitulle"). The study has found out that nurses' level of education plays an important role in application of EBP. Therefore the study has concluded that;

: here is a significant relationship between nurse qualifications and application of EBP
P < .029). Therefore **the** hypothesis that there is relationship between nurse qualifications and
EBP application is accepted.

5.2 CONCLUSION

Most of the **respondent** hoped that the research findings will be of benefits to the patients. This research has brought **to** the fore some of the factors that are of interest in EBP application.

1. It has been noted that application of EBP was associated with nurses' level of education, with nurse with degree better placed in reviewing and application of EBP than nurses with lower level of education. As the health care services moves towards embracing EBP applications this factor should be given outmost attention in order to achieve quality patient care.
2. Most of the nurses reported that their care practices are either guided by basic training or hospital policy, with research guidance rated lowest. This has been attributed to lack of research material and accessibility, e.g no computer to access research materials
3. Majority of the nurses agreed that EBP has advantage over current practices and EBP will help in making decision on the care plan, though resources are constraint to practice.
4. Most of the nurses agreed that EBP knowledge always influences EBP application, with majority similarly concurring that reading and interpreting is as well any influential factor in EBP application.
5. In most of the wards there was no clear formal guideline on EBP. and there were no clear criteria for evaluation of EBP application.
6. On positive note nurses have rated collegial support highly in obtaining research materials. In developing country like Kenya, where in public hospitals access to research material is limited due to accessibility and affordability many nurses relied on colleagues for latest research information.

5 RESEARCH RECOMMENDATIONS

There is need for KNH Management to design and develop staff work model that takes into consideration factors, such as, patient to nurse ratio, balance between routine duties and time for research and training. This will improve nurses' workloads, care practices hence application of EBP as well as attitudes to EBP.

2. There is need to develop more nurse graduates and meantime expose nurses more to research courses and undertaking formal research courses on how to improve patient care is critical. This will improve both quality care outcome and nurse research knowledge.
3. Management should establish competitive means for nursing staff to conduct research through provision of incentives and effort recognitions in order to boost nurses attitudes to research and ability to review literature.
4. KNH management should institute a committee of expert to develop clinical guideline on EBP. The guidelines should be reviewed every five years and updated regularly when new evidence on the practices is discovered. This is in line with the finding in the study that there was no clear guideline in medical and surgical departments, which was assumed to be representative of all other departments in KNH.
5. Computer training courses for the nurses and at least availing one computer per ward and internet connected in order to access research materials and updated knowledge on current research findings. On these note ward in-charges should provide more support on the latest update information on evidence based practices and encourage their nurses to base their practices on evidence.
6. Management should establish and support "**nurse research peer group**" which conduct research in clinical areas and share findings on latest evidence based practices (at least

one nurse per ward). An EBP mentor per ward who document research and educate nurses on benefits of EBP application is also recommended.

Given that evidence based nursing practice is embraced globally as an approach to impact positive outcome on patients care, there is need to establish a dedicated and well funded research centre. The research centre will serve as research knowledge hub that promotes application of research findings in clinical environments. This will also be helpful in realization of one of the key Millennium Development Goals: Health for all.

Areas for further research include:

1. Establish postgraduate nurse's role in bridging the gap in routine practices and evidence based practices in clinical environment.
2. Management role in incorporating research findings into clinical practices."Do management share research findings with the nurses at the ward level".

TIME FRAME

Month	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept/Oct/Nov
Activity i											
Concept Paper Development											
Proposal writing											
Forward Proposal for Discussion and Approval (Supervisors)											
Refining of final Proposal and forwarding to KNII-MRC											
Data Collection											
Data Processing and Analysis											
Report Writing											
Draft Report presentation and Correction											
final Report presentation and Submission											
Thesis Defense											

in IK.FT

Component	Activity Description	Item	Unit of Measurement	Unit Cost (KSH)	Total Cost
Literature Review	Personal literature search and transport and use of modem airtime	Browse for literatures Journals articles, dissertations, books	25days	@ 300	7500
	Cyber Cafe Services	Surfing for 2.5hours daily	30 days	@ 220	16500
	Stationeries	Foolscaps	2.5 reams	@ 500	1250
		A4 notebooks	2	@ 100	200
		Proposal Typing	3 drafts	@ 500	1500
		Photocopy charges	200 pages	@ 2	400
		Proposal printing	3 drafts	@ 500	1500
Subtotal	-	-	-	-	28,850
Research	Questionnaires	Photocopying	200 copies	@20	4000
	Data collection	Sustenance	30 days	@ 600	18,000
		2 Research assistants sustenance	30 days	Each @ 500	30,000
		Data Processing and analysis	-	-	8.500
Subtotal	-	-	-	-	60,500
Reports	Draft reports	Typing, printing	150 pages	@ 10	1500
		Photocopying	5 draft copies	@400	2,000
	Final reports	Correction and printing	150 pages	@ 10	1500
		Photocopying	6 draft copies	@400	2,400
		Binding	6 copies	@500	3,000
		Sustenance	30 days	@250	7500
Subtotal	-	-	-	-	17,900
	Contingencies				12450
Grand Total					119,700

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APPENDIX I: RESPONDENT'S CONSENT FORM

A: Introduction

My names are **Talaso Dulacha Barako** a postgraduate student at the **University of Nairobi**. I am conducting research on **Factors influencing Application of evidence based practice among nurses working in medical and surgical wards, SOPC and MOPC at Kenyatta National Hospital**. I am requesting you to participate in this study because you are one of the nurses working in Kenyatta National Hospital.

B: Procedure

If you agree to be in this study the following will occur;

1. You will respond to a questionnaire and your participation will take about 30 minutes
2. Your will be requested to participate in indepth interviews

C: Risks/Discomforts

- I. Participation in this research may involve personal information but your records will be handled as confidentially as possible. No names will be used in any report from this study.

D): Benefits

There will be no direct benefit to you from participating in this study. However, your participation and the research findings will assist to improve the quality of the care of our patient.

E: Consent

Participation in this research is voluntary. You are free to decline to be in this study, or to withdraw at any point. Your decision as to whether or not to participate in this study will have no influence in your medical care in this hospital.

Volunteer Agreement

I have read the consent form and or explained to, describing the nature of the study and the benefits. I have had a chance to ask all questions regarding this study. I voluntarily agree to participate.

Date Signature of the Participant

Date Signature of the Person obtaining Consent

Contact

In case of any questions or clarifications the research assistant will help you. If you have further questions, feel free to contact the principal researcher, **Talaso Dulacha Barako** (School of Nursing Sciences. University of Nairobi, Mobile 0722790680) or the Secretary to ERC, I oN/KNII at the following address: University of Nairobi, College of Health Sciences. P.O. Box 30197. GPO 00100. Tel No. 2726300(HXT 44102), Nairobi.

Thanks

Talaso Dulacha Barako (Principal Investigator)

APPENDIX II: QUESTIONNAIRES FOR NURSES

FAC 10RS IM LI FACING APPLICATION OF EBP AMONG NURSES WORKING IN MEDIC AL AND SI RGICAL WARDS, SOPC and MOPC AT KNH

Instructions;

- 1 This questionnaire consists of two parts. Please attempt all questions
- 2 Please do not write your name on the questionnaires.
- 3 Pick (\) the most appropriate response and score appropriately.

Questionnaire No— Ward No. Date

1) PART ONE

A. Sociodemographic data

1. Age: please indicate;

- 21-30 •
- 31-40 n z \
- 41-50 • •
- 51-60

2. Gender:

- Male
- Female •

3. Marital status,

- Single _
- Married
- Divorced/Separated: |
- Widowed: |

4. What is the highest Level of Education you attained?

- Nursing certificate
- Nursing Diploma r ~ ~
- Undergraduate Bachelor degree |
- Masters in nursing
- Doctorate in nursing

5. How long have you been practicing nursing since you first graduated?

- | | |
|------------|----------|
| 0-5 | 6 months |
| 6-10 | 1 year |
| 11-15 | 2 years |
| 16-20 | 3 years |
| 21-25 | 4 years |
| 26 & above | 5 years |

6. What type of work do you perform daily:

- | | |
|---------------------|------------|
| Direct patient care | Management |
| Both | |

7. Factor that may influence EBP application among nurses working in medical and surgical at KM!

7. Does the number of patients, allocated to you per shift affect your practice of EBP?

- a. Yes b. No.

If yes how does it affect, please state

8. To what extent is your nursing practice evidence-based?

- a. Full practice b. somewhat practice c. Don't practice

9. What guides your nursing practices?

- a) Evidence from research
- b) hospital policy guidelines
- c) ward routine
- d) peer guidance
- e) basic training

10. Do you base your documentation of nursing care on EBP guidelines?

- a. Yes
- b. No

If no, why please state

11. Do you use computer at work place, to access EBP materials?

- a. Yes
- b. No.

If not, please, state reason

12. How will you rate yourself in ability to critically review literatures on EBP?

- a. Confident(4-5) 1 1
- b. Fairly confident(3-point) | Z _ Z |
- c. Poorly confident(1-2-point)
- d. Not confident at all(0)

13. Will application of EBP improve patient care outcomes?

- a. Yes
- b. No

If yes, how please state

C. Score appropriately for the following statements

Statements	Yes	No
14. EBP places burden on current practices		
15. Updated Information on EBP provided in the ward		
16. EBP places unnecessary demand on nursing care of patient		

17. Need to increase application of EBP in the nursing care of patient		
IX. EBP helps in making decision on the care plan		
19. EBP has advantage over current practices		
20. EBP not compatible with current practice in the ward		
21. EBP too complex to be integrated to current practice		
22. Time given to access research materials		
23. Time given to attend short course, conferences.		
24. Research material easily accessible		
25. Able to translate research material to useful treatment plan.		
26. EBP undermine nursing profession by being overly scientific		
27. Funding to conduct research available		
28. EBP make no different to current care provided		
29. Effort recognized after application of EBP		

I). Using the following 4-point scale, rate the extent to which the following factors will influence application of EBP in your nursing practice in your ward: 1 - Does not influence 2 - Some how influence 3-Mostly influence 4-Always influence

Explanation of the (RA TING scale) for the level of support for the factors that may influence EBP application among nurses working in medical and surgical wards.

- 1 Does not influence - The factor have no influence on EBP application
- 2 Some how influence - limited influence on EBP application

3 **Mostly influence** - influence EBP application

4 **Always influence-** strong influence on EBP application

Code of influencing factors	Factors that influence application of EBP	1	2	3	4
030	lack of time due to heavy patient loads				
031	Personal attitudes towards research.				
032	Ability to search for and retrieving studies.				
033	Reading and understanding of research material				
034	Appraisal skill for EBP				
035	Autonomy to practice EBP				
036	Knowledge of EBP regularly updated				
037	Ward managers' support for EBP				
038	Colleagues support for EBP				
039	Management support for enforcing EBP				

FART TWO

APPENDIX III: INDEPTH INTERVIEW GUIDES FOR NURSE MANAGERS IN-CHARGES OF THE WARDS

Interviewer **Date**

Name of the institution

Position of the respondent

Section A: Sociodemographic.s data

1. Ward
2. Designation
3. Level of Education
4. Year of experience as nurse manager

Section B: Knowledge of Practice

1. What do you understand EBP is?
2. In this unit do you have guideline on EBP application? If yes what aspect does it cover? If not why not? (request to view the guideline if available)
3. How is the guideline communicated to staff?
4. Is EBP application done in your ward?
5. What are your roles in application of EBP?
6. What are some of the benefits of EBP application?
7. Is the evaluation of EBP application done? How often is it done? What criterion is used? When was it evaluated last? (request to view evaluation report if available)
8. What are the current hindrances in application of EBP? How can these be a hindrance?

Any comment please

THANK YOU FOR YOUR PARTICIPATION, YOUR RESPONSE IS COMPLETELY CONFIDENTIAL.

APPENDIX V: DUMMY TABLES PRESENTING PROPOSED STUDY ANALYSIS
Result table 1: Basic characteristics of nurses working in medical and surgical wards, SOPC and MOPC in KNH

	Frequency (n)	Percent (%)
Gender		
Male		
Female		
Age		
21-30 years		
31-40 years		
41 -50 years		
51 -60 years		
Nursing experience		
0-5 years		
6-10 years		
11-15 years		
16-20 years		
21-25 years		
26 and above		

Result table 2: Application of evidence based practice by nurses in medical, surgical, SOPC and MOPC in KNH

	Number of nurses (n)	Percent (%)
EBP application		
Yes		
No		
Total		

Result table 3: Chi square tests of association between EBP application and nurses' characteristics in medical, surgical, SOPC and MOPC at KNH

	Nurses applying EBP		P value
	Yes, n (%)	No, n (%)	
Gender			
Male			
Female			
Age			
21-30 years			
31 -40 years			
41-50 years			
51 -60 years			

Result table 4: Chi square tests association between EBP application and factors influencing practice*

	Nurses applying EBP		P value
	Yes, n (%)	No, n (%)	
Patient workload			
No influence			
Some influence			
Mostly influence			
Always influence			
Personal attitudes			
Perceived lack of time			
Lack of autonomy to practice			
Lack of administrative support			
Lack of resources			
Difficulty in searching for and retrieving study materials			

*For brevity the levels of variables listed in this table are not shown but variables have only two applicable levels namely yes or no

Result table 5: Multivariate analysis of factors associated with EBP application

Factor influencing EBP	Regression coefficient	Standard error	95% confidence interval	P value
Age				
Experience				
Gender				
Patient workload				

**APPENDIX VI: LETTER TO THE UNIVERSITY OF NAIROBI-KENYA I I A
NATIONAL HOSPITAL ETHICS COMMITTEE**

Talaso Dulacha Barako
School of Nursing Sciences,
College of Health Sciences,
University of Nairobi.

10th May, 2011

The Chairperson,
UoN-KNI Ethics Committee.
P.O. Box 20723, 00202,
Nairobi.

Dear Sir/Madam.

Re: REQUEST TO BE ALLOWED TO CONDUCT RESEARCH

I hereby apply for the above. I am a postgraduate student at the University of Nairobi pursuing Master of Science degree in Nursing Education. I am preparing to conduct research as part of the requirements for the award of the degree. The study will be conducted in medical and surgical wards at Kenyatta National Hospital. My research topic is **"Factors influencing application of evidence based practice among nurses working in medical and surgical wards at Kenyatta National Hospital (KNH)**

I would be very grateful for your consideration.

Thank you,

Signature: Talaso Dulacha Barako: Contact: Mobile;
0722790680: E-mail: talasodb@yahoo.com.au

**APPENDIX VII: LETTER TO THE CHIEF EXECUTIVE OFFICER(CEO),
KENYATTA NATIONAL HOSPITAL**

**Talaso Dulacha Barako
School of Nursing Sciences,
College of Health Sciences,
University of Nairobi.**

10th May, 2011

**The Chief Executive Officer,
Kenya National Hospital
P.O. Box 20723, 00202,
Nairobi.**

Dear Sir/Madam,

Re: REQUEST TO BE ALLOWED TO CONDUCT RESEARCH

I hereby apply for the above. I am a postgraduate student at the University of Nairobi pursuing Master of Science degree in Nursing Education. I am preparing to conduct research as part of the requirements for the award of the degree. The study will be conducted among the nurses working in medical and surgical wards at the Kenya National Hospital. My research topic is "Factors influencing application of evidence based practice among nurses working in medical and surgical wards at Kenya National Hospital (KMI)

I would be very grateful for your consideration.

Thank you.

Signature:

Talaso Dulacha Barako: Contact: Mobile: 0722 790680 talasodh-f@yahoo.com.au

APPENDIX VIII: LETTER TO THE MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

Talaso Dulacha Barako
School of Nursing Sciences,
College of Health Sciences,
University of Nairobi.

30th June 2011

The Permanent Secretary.
Ministry of Education, Science and Technology,
P.O. Box 30623, 00100,
Nairobi.

Dear Sir/Madam.

RE: REQUEST TO BE ALLOWED TO CONDUCT RESEARCH

I hereby apply for the above. I am a postgraduate student at the University of Nairobi pursuing Master of Science degree in Nursing Education. I am preparing to conduct research as part of the requirements for the award of the degree. The study will be conducted in Kenyatta National Hospital. My research title is "**Factors influencing application of evidence based practice among nurses working in medical and surgical wards at Kenyatta National Hospital (KNH)**"

I would be very grateful for your consideration.

Thank you.

Signature:.....**Talaso Dulacha Barako**: Contact: Mobile; 0722790680; E-mail: [talasodb </ yahoo.com.au](mailto:talasodb@yahoo.com.au)

**APPENDIX VIII: RESEARCH AUTHORIZATION LETTER FROM NATIONAL
COUNCIL FOR SCIENCE AND TECHNOLOGY**

REPUBLIC OF KENYA



NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Tel: +254 20-241 149, 22 1310?
E-mail: info@ncst.go.ke

> vx . 54.020-7:13? >5 318245. 31824*
With replyng please quote

PO Box 30623 00100
NAIROBI KENYA
Website: www.ncst.go.ke

Our Ref:

N(SI/RR1/12/1/MF.D-011/135

13th September, 2011

[also Dulacha Barako
University of Nairobi
P. O. Box 30197
NAIROBI

RE: RESEARCH VI THORI/VTION

following your application for authorisation to carry out research on
' *Factors influencing application of evidence based practice among
nurses working in medical surgical wards, SOPC Si MOPC at
Kenyatta National Hospital* I am pleased to inform you that you have
been authorized to undertake research at **kenyatta National Hospital,
Nairobi** for a period ending 31 December, 2011.

You are advised to report to **the Director, Kenyatta National Hospital**
before embarking on the research project.

On completion of the research, you are expected to submit **one hard
copy and one soft copy** of the research report thesis to our office.

A handwritten signature in black ink, appearing to read 'P. N. Nyakundi', written over a light-colored background.

M
P. N./NYAKUNDI
FOR: SECRETARY/CEO

Copies to:

The Director
Kenyatta National Hospital
NAIROBI

APPENDIX IX: LETTER OF APPROVAL FROM KNH ETHICS AND RESEARCH COMMITTEE



KENYATTA NATIONAL HOSPITAL
Hospital Rd. along Ngong Rd
P. O. Box 20723, Nairobi.
Tel: 726300-9
Fax: 725272
Telegrams MEDSUP", Nairobi
Email: KNHolan@KenHtealthnptnrrj
3rd August 2011

Ref KNH-ERC/ A/194

Talaso Dulacha Barako
School of Nursing Sciences
University of Nairobi

Dear Talaso

Research proposal: "Factors influencing application of evidence based practice among Nurses
(P^o183/5%o 1T) 6d'03' 3nd SUR9'Cal WardS' S0PC and M0PC at Kenyatta National Hospital"

This is to inform you that the **KNH/UON-Ethics & Research Committee has reviewed and proved your above revised research proposal**. The approval periods are 3rd August 2011 to 2nd August 2012.

You will be required to request for a renewal of the approval if you intend to continue with the study beyond the deadline given. Clearance for export of biological specimens must also be obtained from KNH/UON-Ethics & Research Committee for each batch.

On behalf of the Committee, I wish you a fruitful research and look forward to receiving a summary of the research findings upon completion of the study.

This information will form part of the data base that will be consulted in future when processing related research study so as to minimize chances of study duplication

Yours sincerely

PROF AN GUANTAI
SECRETARY. KNH/UON-ERC

c c The Deputy Director CS, KNH
The Director, School of Nursing Sciences. UON
The HOD, Records. KNH
Supervisors Dr. Margaret Chege, School of Nursing Sciences. UON
Dr. Sabina Wakasiaka. School of Nursing Sciences. UON
Dr. Lilian A. Omondi. School of Nursing Sciences, UON