

**EXPLORING THE PERCEPTIONS OF REGISTERED
NURSES TOWARDS EVIDENCED-BASED PRACTICE IN
GENERAL HOSPITAL MINNA, NIGER STATE, NIGERIA**

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MASTER IN NURSING (NURSING RESEARCH)**

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DECLARATION

I, Adamu Aliyu, hereby declare that this dissertation titled „Exploring the Perceptions of Registered Nurses towards Evidenced-Based Practice in General Hospital Minna Niger State, Nigeria“ is my original work. It has never been submitted for other purposes or at any other University. All the sources used in this work are acknowledged by means of referencing.

Signature

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Date

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DEDICATION

In memory of Alhaji JG Muhammad Muye, the pioneer principal of Niger State School of Nursing Bida, for his contribution to nursing in Nigeria

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I thank Allah Suhanahu wa Ta'ala, the Giver of favours for all His favours that He bestowed on me.

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ABSTRACT

Aim: The aim of the study was to explore the perceptions of registered nurses towards evidenced-based practice.

Objectives: The objectives of the study were to explore and describe registered nurses' perceived levels of knowledge, perceived attitudes towards, perceived application and perceived barriers to evidence-based practice.

Method: A quantitative descriptive design was used for the study. Convenience sampling was used to select a sample of 150 registered nurses working in General Hospital Minna, Niger state Nigeria. Questionnaires (150) were administered to the sample, of which 133 were returned.

The data obtained was analysed using SPSS, Version 20. Descriptive statistics were used to summarise and describe the characteristics of the respondents, while correlation analysis and T-tests (inferential statistics) were used to establish the relationships of the study variables and the respondents' demographic characteristics.

Results: The results showed that the respondents had positive perceived knowledge, attitude and practice of EBP. It also showed that inability to understand statistical terms used in research articles rated the highest perceived barrier to EBP (61.7%, n=82).

There was a weak positive correlation between the age of the respondents and their knowledge of EBP, a positive correlation between age and the attitudes of the respondents and a negative correlation between the age of the respondents and their perceived practice of EBP. The results also showed that there was a negative correlation between level of knowledge and level of education, a negative correlation between nurses' attitudes and level of education as well as a mild positive correlation between level of education and EBP. However, there was a weak positive correlation between knowledge and years of experience, a weak negative correlation between attitude of registered nurses and their years of practice and a positive, correlation between years of practice as a registered nurses and practice of EBP. The mean knowledge of junior and senior nurses revealed a significant difference.

Conclusion: Although the registered nurses expressed positive perception of EBP, certain barriers hindered their adoption. It is therefore necessary for the hospital management to design training programmes and provide the needed facilities to facilitate full adoption of EBP by nurses.

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CHAPTER ONE

INTRODUCTION AND BACKGROUND

1.1 Introduction

The dynamism of the health care profession has necessitated the investment of high quality research, which has resulted in a growth of health care literature aimed toward improving patient outcomes (Bonner and Sando, 2008; Majid et al., 2011). Modern and more effective medicines, medical equipment and therapeutic measures have been developed based on evidence with the aim of helping health care professionals to deliver health care (Chaboyer et al., 2004; Majid et al., 2011). These authors as well as others (Heckenberry et al., 2006; Sherriff et al., 2007) maintain that health care practitioners are embracing new methods of interventions that are based on sound research and best credence. Evidence-based practice (EBP) is one such technique and is quickly gaining popularity to effectively handle clinical issues and provide better patient care (Heckenberry et al., 2006; Majid et al., 2011). With the abundance of literature on EBP, nurses and other health care providers are embracing EBP (Bonner and Sando, 2008; Heckenberry et al., 2006; Sherriff et al., 2007).

Changes in the disease profile among the African population have been documented (FMOHN, 2007; FRON, 2013; UNAIDS, 2013). HIV and AIDS, in particular, have reshaped the health profile of the world at large and Africa in particular (FRON, 2013; UNAIDS, 2013). These may be associated with urbanization and behavioural changes, such as smoking, as well as epidemiological transition (Agomuoh et al., 2006; Mensah, 2008; FRON, 2013; UNAIDS, 2013). These changes have complicated health care financing in Africa generally and Nigeria in particular (Babayemi, 2012). In Nigeria, this is manifest in the increase of payment of fees by health care consumers and the need for more health manpower and infrastructure development on the part of the government (Agbedia, 2012; Babayemi, 2012). The increased burden of health care demands new approaches to care by nurses, which may be achieved through EBP (Scott and McSherry, 2009; Rycroft-Malone, 2006).

The evolution of EBP in nursing is influenced internationally by both government and health care organizations (Glacken and Chaney, 2004; ICN, 2012; Parahoo, 2000).

Having considered the advantages of EBP, governments all over the world are advocating for its use, with the aim of providing care to their citizens that is based on available evidence and not on common tradition (De Pedro-Gómez et al., 2012; Glacken and Chaney, 2004; Parahoo, 2000; Mensah, 2008). Health organisations, both local and international, have answered this call. The International Council of Nursing (ICN) has taken the position that nurses must be actively involved in nursing research and use the findings thereof to ensure that their practices are based on evidence (ICN, 2012).

The government of Nigeria spends a huge sum of money annually to ensure delivery of evidence-based health care to its citizens (Agbedia, 2012; Idang et al., 2012). This is evident in various national health programmes aimed at strengthening the health care sector, enhancing the provision of effective, efficient, quality and affordable health care to Nigerians (Agbedia, 2012; Idang et al., 2012; Obansa and Orimisan, 2013). The federal government recognized the unacceptable health situation in Nigeria and saw the need to invest in reforming the health system. This is manifest in programmes such as the National Economic Empowerment and Development Strategy (NEEDS), high spending in malaria and HIV/AIDS prevention and management, the establishment of the national health insurance scheme, as well as development of health infrastructure and manpower (Ajovi, 2010; FMoH, 2004; FRON, 2013; Obansa and Orimisan, 2013).

To ensure its contribution and support to the federal government in quality health care provision, the Nursing and Midwifery Council of Nigeria, a parastatal of the federal government of Nigeria, stated clearly that nurses must provide care using current evidence based principles and practices to ensure the delivery of quality health care services to the Nigerian health consumers (Bethabile and Simeon, 2011; N&MCN, 2012). However, in spite of the huge financial investment, studies conducted to assess the prospects and challenges of health care financing in Nigeria found that Nigerian health sector is still performing far below expectation (Ajovi, 2010; Babayemi, 2012; Obansa and Orimisan, 2013), with the country recording second and fourth highest global prevalence of HIV/AIDS and Tuberculosis (TB), respectively, as well as bearing the high burden of other diseases (Obansa and Orimisan, 2013).

Similarly, findings have shown that most Nigerian nurses are still unfamiliar with research and practice based on best evidence (Agbedia, 2012; Uneke et al., 2010). This, according to Agbedia (2012), could be attributed to the educational preparation of nursing students that does not allow for questioning and logical reasoning. Moreover, according to (McInerney and Suleman, 2010; McInerney, 2004), a similar situation exists in South Africa, the country recognized as leading the health and educational infrastructure in the African continent, as the application of EBP among its health care providers, including nurses, is in its infancy . This may be due to poor understanding of EBP and the lack of information in accomplishing it. Another factor may be the educational preparation of nurses, such as the enrolled nurses, who are exposed to little research and evidence-based theory (Bethabile and Simeon, 2011).

1.2 Background of the study

Although the origin of EBP can be traced to medicine (Chaboyer et al., 2004; Sackett et al., 2000), other healthcare professions, including nurses, have also embraced the concept, which is evident in the abundance of literature on EBP (Edmond et al., 2006; Hamlin, 2007; Satterfield et al., 2009; Scott and McSherry, 2009). Interestingly, there is currently a global shift towards an evidence-based approach within the health-care sector (Bartelt et al., 2011; Berland et al., 2012; Bonner and Sando, 2008; Boström et al., 2009a; Breimaier et al., 2011; Brown et al., 2010; Brown et al., 2009; Chaboyer et al., 2004). This approach moves decision making away from been based on custom, tradition, authority, opinion or ritual, rather placing the emphasis on identifying the best available research evidence and integrating it with clinical expertise, patient input and existing resources (Lipp, 2005; Mantzoukas, 2008).

Sackett et al. (2000), defined EBP as the conscientious, explicit and judicious use of current best evidence in making decisions about care of individual patients, integrating individual expertise with the best available external clinical evidence from systematic review. This outlines the need to examine the effectiveness of evidence before applying it to the care of patients. It also indicates the need to individualize the care of patients based on evidence. This definition, however, fails to spell how to determine the best evidence. Furthermore, it does not acknowledge the broader

health care needs of individuals and non-clinical sources of evidence that might be applicable, such as qualitative research evidence and the opinion and experience of experts. This stimulated arguments by researchers such as Nolan (2005), who argued that EBP should include concepts such as clients preferences as well as the experience of the professional. Interestingly, Rycroft-Malone et al. (2004) acknowledged Nolan's argument by stating that EBP is „a decision making on the care delivery to patients, which is based on current identified and validated research evidence, consumers' preferences, experts opinions and societal expectations"" (Rycroft-Malone et al., 2004).

Nurses, as primary care givers, are always challenged to keep abreast of health initiatives to deliver care that meet the best standards as identified through research. Nursing therefore adapted the definition of EBP placing greater focus on client participation, clinical judgement and taking consideration of the necessary resources (Maaskant et al., 2013; Pravikoff et al., 2005; Van Achterberg et al., 2008). Thus, evidence-based nursing (EBN) is the process through which nurses make clinical decisions based on available research evidence, integrating their own clinical expertise and patient preference within the context of available resources (Maaskant et al., 2013; Pravikoff et al., 2005; Van Achterberg et al., 2008). Patient preferences are unique and must be assessed directly from the patients and their significant others. Therefore, incorporating their preferences may reveal wide variations that may require unique interventions (Ferguson and Day, 2007).

EBP and research utilization (RU) have been used synonymously in literature. Even though the terms overlap, they differ in their meaning. While RU involves practical application of research findings, EBP is a broader concept that encompasses numerous activities (Maaskant et al., 2013; Pravikoff et al., 2005; Van Achterberg et al., 2008). EBP involves identifying a clinical problem, searching for the best evidence, critically appraising the evidence, synthesizing the evidence, applying the evidence and evaluating the outcomes (Maaskant et al., 2013; Van Achterberg et al., 2008). Additionally, consideration must be given to the patients' preferences and values to guide the practice (Maaskant et al., 2013; Pravikoff et al., 2005; Van Achterberg et al., 2008). The overlapping of the two concepts thus integrates research findings (major source of evidence) and other sources of evidence (Brown

et al., 2010; Lipp, 2005). Nurses must therefore know how to perform these activities to be able to deliver care based on EBP (Breimaier et al., 2011; Chan et al., 2011b).

It is pertinent to mention that globally, EBP is gaining more acceptance and popularity in health care professions, including nursing (Bonner and Sando, 2008; Yip Wai et al., 2013). The establishment of the Cochrane library, which provides systematic reviews in its data base, and the availability of evidence-based nursing journals and EBN centres in different countries are evidence of this (Hutchinson and Johnston, 2004). These provide sources for current evidence for effective health care delivery (Chaboyer et al., 2004).

The African continent is not left out of the move towards the new trend in the health care sector, EBP. This is evident in the abundant literature on and advocating for EBP from the continent (Agbedia, 2012; Fawole et al., 2008; Idang et al., 2012; McInerney and Suleman, 2010; Nwagwu, 2008; Ofi et al., 2008; Oladapo and Fawole, 2007) . However, despite the abundance of literature, there is still a debate about the application of EBP in Africa, which has stimulated research studies to assess the level of EBP applications in health care delivery in Africa, including Nigeria. Although the researcher has only found a few studies on Nigeria, these show evidence that EBP adoption is still slow (Agbedia, 2012; Fawole et al., 2008; Ofi et al., 2008; Oladapo and Fawole, 2007).

1.3 The significance of EBP in the nursing profession

Globally, there is a strong advocacy for EBP in nursing and an increased awareness of the significance of linking practice with evidence (Ayandiran et al., 2013; Berland et al., 2012; Brown et al., 2009; Chaboyer et al., 2004). There have therefore been concerted on-going efforts to move away from ritualistic care procedures and to replace them with clinical practices built on scientific research evidence (Berland et al., 2012; Chaboyer et al., 2004). Underpinning this new evidence-based culture is the assumption that if care is based on sound empirical evidence, then it is more likely to be cost effective, appropriate and justifiable, especially in a cash strapped economy (Berland et al., 2012; Chaboyer et al., 2004). Although there is the debate on whether nurses are knowledgeable of and/or inculcate EBP into their nursing practices (Bonner and Sando, 2008), the application of EBP is necessitated by the

developments in health care and the nursing profession must therefore recognize the role of sound evidence in its practice (Scott and McSherry, 2009; Rycroft-Malone, 2006).

If the nursing profession embraces the clinical decision making approach of EBP with passion (Ferguson and Day, 2007), nurses will be capable of producing high-quality care to patients (Adib-Hajbaghery, 2007; Bartelt et al., 2011; Boström et al., 2009b; Breimaier et al., 2011). To demonstrate this, maternal mortality is still high in African countries generally and Nigeria in particular, but an evidenced-based reproductive health care initiative which is aimed at reducing maternal mortality has shown good results (Fawole et al., 2008). Training care providers to adopt an evidenced-based approach to their care has led to a little reduction in mortality.

The public's increasingly easy access to information due to improvement in information technology, the need for increased productivity in delivering services, the increase in research information and government emphasis on scrutiny and accountability justify the need to base care on available evidence (Agbedia, 2012; Rycroft-Malone, 2006). EBP will not only empower nurses in their decision making processes (Bartelt et al., 2011), but can also provide them with a scientifically proven critical appraising method for effective health care delivery to specific populations (Bartelt et al., 2011; Loera, 2006; Olade, 2004). In addition, EBP allows transparency, ensures best practice and avoidance of errors that are related to routine or habitual practice and ensures provision of high quality, knowledge based and cost effective health care (Bartelt et al., 2011; Mantzoukas, 2008). EBP allows nurses to use latest research findings, keep pace with current health care practices and contribute to their organizations as well as their patients (Bartelt et al., 2011).

There are several examples of how research-based knowledge, if applied into the practice of nursing, can improve the quality of care and alleviate patients' pain and suffering. A good example was in a study to translate the best available evidence for nurses to improve the practices of oral care (Chan et al., 2011a), which indicates that nurses knowledge and practices towards oral care practices were improved due to EBP intervention. The findings also revealed that the nurses' use of evidence-based recommendations resulted in improved oral care of the patients. Similarly, a group of

researchers applied EBP to come up with a framework to change the traditional approach of infant feeding with an evidenced-based approach. The study shows evidence that consideration of the individual infant and the family as active participants in the infant's feeding were associated with positive outcomes (Sables-Baus and Zuk, 2012).

Despite the advantages, access to appropriate high-quality information that is research based has often eluded nurses (Carlson and Plonczynski, 2008). Considering this, researchers have tried to focus on nurses' knowledge, skills and attitudes with regard to EBP and have developed models to assist nurses in appraising research findings to improve their practice (Hutchinson and Johnston, 2004). The two most widely used models are the Stetler Model of Research Utilization to Facilitate EBP and the IOWA Model of Evidence-based Practice to Promote Quality of Care (Hutchinson and Johnston, 2004). However, even in spite of these, the paradigm shift to EBP is still slow (Boström et al., 2009b; Squires et al., 2011b). Consequently, the gap between research and practice can be devastating for the patient.

Several studies in different parts of the world reveal various challenges to EBP among nurses, ranging from misconceptions about EBP, time, organizational cultures and lack of authority to change practices, poor knowledge, lack of experience of research and statistics, lack of mentorship and leadership support, as well as absence of needed resources (Bostrom et al., 2008; Brown et al., 2010; Brown et al., 2009; Chan et al., 2011b; Ferguson and Day, 2007; Gerrish et al., 2007; Gifford et al., 2007; Maaskant et al., 2013; McInerney and Suleman, 2010; Parahoo, 2000). Consequently, the integration of EBP into the health care system has been weak and is associated with poor treatment outcomes (Agbedia, 2012; Uneke et al., 2010).

Conversely, organizational and leadership support; higher educational status; availability of time; mentorship; and positive attitudes were found to enhance EBP among nurses (Bostrom et al., 2008; Brown et al., 2010; Brown et al., 2009; Chan et al., 2011b; Ferguson and Day, 2007; Gerrish et al., 2007; Gifford et al., 2007; McInerney and Suleman, 2010; Parahoo, 2000). In terms of the organizational

atmosphere, studies such as (Adib-Hajbaghery, 2007; Ajovi, 2010; Boström et al., 2009a; Brown et al., 2009; Ferguson and Day, 2007) revealed that a conducive environment that supports staff and provides adequate time and infrastructure contributes to the uptake of EBP. Similarly, it has been reported that nurses' positive attitudes towards EBP lead to its application in nursing care (Breimaier et al., 2011; Majid et al., 2011; Ofi et al., 2008; Ubbink et al., 2011; Yip Wai et al., 2013). This implies that nurses with positive attitude towards EBP are more likely to base their practice on evidence-based principles (Breimaier et al., 2011; Majid et al., 2011; Ofi et al., 2008; Ubbink et al., 2011; Yip Wai et al., 2013).

When having to make clinical decisions, nurses have historically relied on their own experiences and on the opinions of experts (Benner et al., 2009; Majid et al., 2011). However, these approaches to decision making in nursing practice may be outdated, unsafe and associated with therapeutic errors (Schmidt & Brown, 2009). Thus, the use of EBP in decision making becomes necessary if nurses are to provide quality care.

1.4 Evidence-based nursing practice in Nigeria

Globally, nursing practice is adopting new approaches, such as the emergence of new theories of practice and the utilization of evidence-based practice (Parahoo, 2006; Heckenberry et al., 2006; Majid et al., 2011). This development in health care demands that nurses, as primary care providers and professionals, be competent and able to practice based on evidence to meet the challenges of health care in the dynamic world (Agbedia, 2012; Ayandiran et al., 2013; ICN, 2012; Ofi et al., 2008; Ojo, 2010). Like most African countries, the nursing care approaches in practice in most Nigerian health institutions are case nursing, functional nursing, primary care nursing and team nursing, with the functional approach being the most common (Agbedia, 2012; Uneke et al., 2010). As this care approach is not evidence-based, it has a negative impact on the quality of care rendered to clients (Agbedia, 2012). In addition, Agbedia (2012) and Ojo (2010) observed that the educational level of most nurses in Nigeria has a bearing on their understanding and utilization of current concepts in nursing, such as evidenced-based practice. Most of the nurses are diploma holders with only few holding university degrees (Agbedia, 2012). The

situation is further exacerbated by the acute shortage of nurses (Agbedia, 2012). There is therefore an urgent need to establish a culture which supports questioning of clinical practices at all levels of health care service in Nigeria.

Filani (2004) noted the lack of nursing generated data to improve nursing practice in Nigeria and suggested that nurses' lack of contribution to the knowledge base is mainly attributable to few opportunities of career progression and their lack of skill to conduct and appraise research. However, there is not enough empirical data to support this claim. Ofi et al. (2008) asserted that subjective reports and observations indicate that the involvement of nurses in research vary from passive observers, through passive data collectors, passive consumers of research reports to active producers of professional nursing research. Although the need for improvement in nursing education to produce evidenced based nurses is recognized in Nigeria (Agbedia, 2012; Ayandiran et al., 2013), the nursing institution which produces the largest number of nurses in Nigeria is still slow in its progression (Ayandiran et al., 2013). The basic programme offered by this institution need serious improvement to be able to build nurses that are adequately prepared to appreciate evidenced-based practices (Ayandiran et al., 2013; Uneke et al., 2010). With the gradual establishment of nursing programmes in the nation's universities, it is expected that more critical thinking nurses will be produced (Agbedia, 2012; Ayandiran et al., 2013).

1.5 Statement of the problem

The fast changing health care system calls for nurses to possess increasing knowledge, clinical competency and greater autonomy in clinical judgment (Agbedia, 2012; Grove et al., 2013; Ofi et al., 2008). In addition, modern technologies and society's increasing awareness of health and self-care intensify the need for nurses to provide care based on evidence (Agbedia, 2012; Ofi et al., 2008).

Regrettably, this is challenging as most nurses in Nigeria lack proper understanding of evidence- based practice and do not utilize the most current concepts in nursing which are designed to improve the quality of care rendered by nurses worldwide (Agbedia, 2012). In addition, the involvement of Nigerian nurses in research activities is not widely studied and documented (Ofi et al., 2008; Agbedia, 2012; Bartelt et al.,

2011; ICN, 2012; Rycroft-Malone, 2006). Thus a gap exists between credible research findings and translation of those findings into practice. Consequently, there has only been a slow improvement in the quality of care rendered by registered nurses in the nation's hospitals (Agbedia, 2012; Uneke et al., 2010). Although there is enough evidence to support the use of EBP, it is not understood why there is inconsistency in its application. It is therefore important to explore registered nurses' perceptions towards EBP.

This descriptive study aims to explore registered nurses' perceptions towards EBP in a selected general hospital in Minna, Niger state, Nigeria.

1.6 Purpose of the study

The purpose of this study is to explore and describe the perceptions of registered nurses towards EBP in a selected hospital in Minna, Niger state, Nigeria.

1.7 Objectives of the study

The objectives of this study are:

1. to explore and describe registered nurses' perceived levels of knowledge of evidence-based practice;
2. to explore and describe registered nurses' perceived attitudes towards evidence-based practice;
3. to explore and describe registered nurses' perceived engagement in evidence-based practices; and
4. to explore and describe registered nurses' perceived barriers to evidence-based practice.

1.8 Research questions

1. What are the registered nurses' levels of knowledge of evidence-based practice?
2. What are the registered nurses' attitudes towards evidence-based practice?

3. How do the registered nurses" perceive their engagement in evidence-based practice?
4. What do the registered nurses perceive as barriers to evidence-based practice?

1.9 Hypotheses for the study

1. There is no significant difference between senior and junior nurses" knowledge of evidence-based practice;
2. There is no significant correlation between the educational level of registered nurses and their knowledge of evidence-based practice;
3. There is no significant correlation between the age of registered nurses and their knowledge of evidence-based practice;
4. There is no significant relationship between knowledge, attitude and practice of evidence-based practice among registered nurses
5. There is no correlation between relationship between knowledge, attitudes and practices of EBP with the gender of the respondents.
6. There is no correlation between relationship between knowledge, attitudes and practices of EBP with the designation of the respondents.

1.10 Significance of the study

This study has significance to various aspects of nursing as described below:

Significance to nursing practice: Patients admitted into hospitals are expected to receive care that is safe, effective, qualitative and based on evidence-based decision-making processes (Agbedia, 2012; Bartelt et al., 2011; Ofi et al., 2008; ICN, 2012; Rycroft-Malone, 2006). As nurses spend more time with patients than other health care providers and are more involved in their care, they need to be more conversant with EBP. Unfortunately, a gap exists between theory and practice based on evidence. Hence the present study is necessary in order to describe the perceptions of nurses regarding the use of research in clinical practice.

This is also important as a measure to evaluate the uptake and effectiveness of research-based knowledge for designing and evaluating intervention effectiveness in the efforts to improve patient and organizational outcomes (Squires et al., 2011b). Several factors contribute to nurses' knowledge, attitudes and practices of EBP. By exploring nurses' perceptions of EBP, the researcher may gain an insight into the current perceptions of EBP among registered nurses and make recommendations that may improve the adoption of EBP by them. The findings of this study may also help clarify relevant issues, and modify misguided attitudes and practices about evidence-based nursing practice among nurses in Niger state, Nigeria. Further, the finding of the study may make nurses take more responsibility in using EBP to deliver quality health care to its consumers.

Significance to nursing research: Like other professions, a specialized body of knowledge helps define nursing as a profession (Hutchinson and Johnston, 2004). This study may contribute to the knowledge base of nursing generally, but more particularly with respect to EBP, which is still in its infancy in developing nations. This is true considering that the knowledge base is growing rapidly in the 21st century and the focus for research is developing scientific knowledge that facilitates nursing to implement practices based on evidence (Hutchinson and Johnston, 2004).

Significance to nursing management: Although several systematic reviews and guidelines are available to guide nurse managers, the application of EBP in practical settings is still insignificant. In order to provide evidence-based care, there is a need to understand the dissemination and implementation of research findings and the factors that impact research use (Boström et al., 2009a). The findings of this study may give an insight to stakeholders in nursing on the need for EBP. The study may provide a wider perspective on the existing knowledge and practices of registered nurses in relation to EBP at the General Hospital Minna, Nigeria. This may validate or provide supporting evidence needed for the development of practice guidelines in the nursing units for nurse managers.

1.11 Operational definition of terms

Evidence-based practice is the "conscientious, explicit and judicious use of current best evidence in making decisions about care of individual patients, integrating

individual clinical expertise with the best available external clinical evidence from systematic research” (Sackett et al., 2000). In this study, EBP refers to nurses’ ability to appraise and utilize findings based on evidence in nursing practice.

General hospital: In Nigeria, a general hospital is a secondary health care facility that receives referrals from primary health care and sends referrals to tertiary health facilities. In this study, a general hospital refers to General Hospital Minna, a public secondary level health care facility that is owned by Niger state government.

Perceived knowledge: Knowledge is defined as information whose validity has been established through tests of proof (Zack, 1999). In this study, perceived knowledge is what registered nurses feel they understand about EBP.

Perceived attitudes: Attitude is the way in which an individual thinks and/or feels towards somebody or something and can be both positive and negative (Okoronkwo, 2003). In this study, perceived attitude refers to way registered nurses believe they feel about EBP.

Perceived practices: A practice is the repetition of the same activity (Pope, 2003). Perceived practice in this study refers to the EBP activities that registered nurses feel that they perform.

Registered nurse : “A registered nurse is a person who has received authorized education, acquired specialized skills and attitudes and is registered and licensed by a regulatory body (in Nigeria, NMCN), to provide promotive, preventive, restorative and rehabilitative care to individuals, families and communities independently and in collaboration with other members of the health team” (NMCN, 2009). In this study, a registered nurse is any person who is registered by the Nursing Council of Nigeria and has a current licence to practice as a nurse.

1.12 Theoretical framework

The theoretical framework (conceptual framework) is the main idea that the researcher holds about the phenomenon of interest which may or may not be written (Maxwell, 1998). The theoretical framework is the primary conception or model of what is out there that the researcher plans to study and what is on-going with such

conceptions (Maxwell, 1998). Miles and Huberman (1994) see a conceptual framework as a written product that explains either in narrative or graphical form the phenomenon to be studied; that is, the key factors, the concepts or variables as well as their relationships

There are several theories on how knowledge gets disseminated and utilized (De Pedro-Gómez et al., 2012; Polit and Beck, 2004), but Roger's Diffusion of Innovation theory is the most noteworthy of them all and has influenced several researches in the field of nursing (Polit and Beck, 2004; Sahin, 2006). This theory describes the process of taking and communicating new knowledge to members of an organization through certain channels and has therefore been adopted for this study. The theory served as a spotlight to illuminate the phenomena being studied, thus shedding light on relationships that might not be noticed or misunderstood (Maxwell, 1998).

The Diffusion of Innovations Theory postulates that the diffusion of knowledge is an evolutionary process through which an innovation is communicated over time to the members of a social system (Rogers, 1995). There are four main elements that underpin the process and influence the way and the extent of adoption of the innovation. The main elements are as follows:

1. Innovation: An innovation is an idea or practice that an individual perceives as new that can result in changes if adopted. The decision about the adoption of the innovation is strongly influenced by the nature of the innovation (Rogers, 1995). According to Rogers, the innovation may have been developed for a very long time, but will still remain an innovation for the individuals if they perceive it as new. Thus, the newness attributes of the adoption are more related to the first three aspects of the diffusion innovation process; that is knowledge, persuasion and decision (Rogers, 1995).

2. Communication channels: These are the medium through which individuals communicate with one another to have a mutual understanding of the innovation. These channels may include face to face communication or mass media, such as newspapers, articles, radio, televisions or internet (Rogers, 1995). The effectiveness of communication is dependent on the shared beliefs, expectations and values of the sender and the receiver of the information.

3. Time: Rogers asserts that knowledge occurs in the process of diffusion over time. He also asserted that varying amounts of time elapse between the creation of the innovation and its dissemination as well as between the awareness of the innovation and the decision whether or not to accept and use it (Rogers, 1995).

4. Social system: The social system is a set of inter-related units that are jointly engaged in problem solving to achieve a common goal. The author believes that the occurrence of diffusion is influenced within the social system by variations in norms and receptivity of the innovation (Rogers, 1995).

1.12.1 The Innovation-Decision Process

Rogers described the innovation-decision process as an activity involving information seeking and information processing where the individual is moved to reduce indecision about the advantages and the disadvantages of the innovation. The author characterised the process of Innovation-Decision into five steps namely: (1) knowledge; (2) persuasion; (3) decision; (4) implementation; and (5) confirmation. These are depicted in Figure 1.1 below.

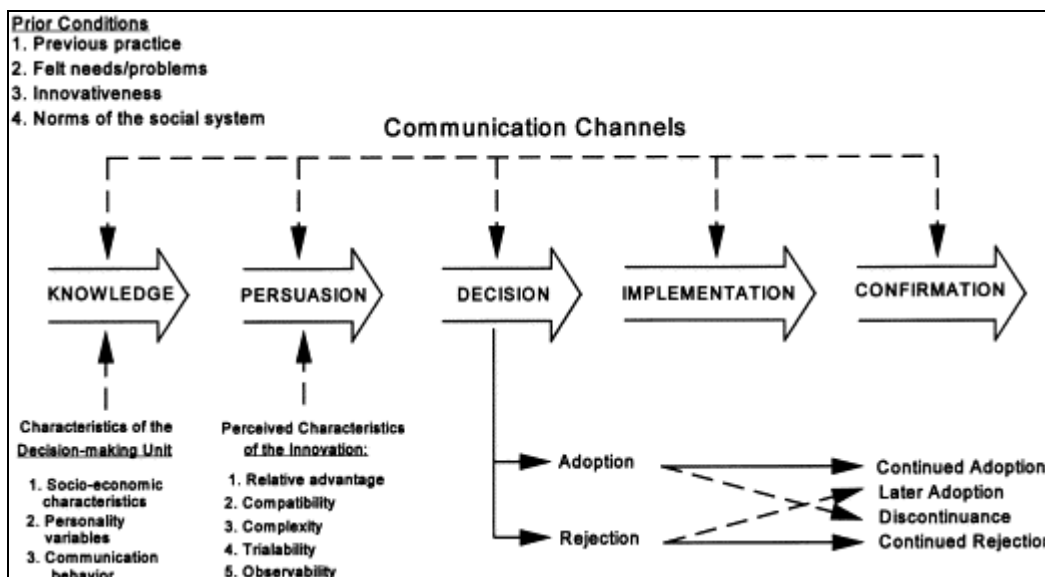


Figure 1.1: A model of Roger's Diffusion of Innovation: Rogers (1995)

Knowledge: At this stage, the individual or group become aware of an innovation and seeks to acquire more information about it in order to know more about it and how it functions.

Persuasion: The individual's attitude is shaped after acquiring knowledge about the innovation (Rogers, 1995). During the persuasion stage, the individual forms either a negative or positive attitude towards the innovation. Factors such as reinforcements from colleagues or peers, organizational support and the degree of uncertainty about the innovation have great influence on the decision path (Rogers, 1995).

Decision: In the decision stage, the individual chooses to accept or to refuse (reject) the innovation (Rogers, 1995).

Implementation: During this stage, the individual changes his/her behaviour by translating the actual innovation into practice (Rogers, 1995).

Confirmation: In the last stage, the innovation is evaluated for effectiveness. The continuation or discontinuation of the innovation is determined by the type of support the individual receives from the organization, peers or colleagues (Rogers, 1995).

1.12.2 Application of Roger's Diffusion of Innovation to this study

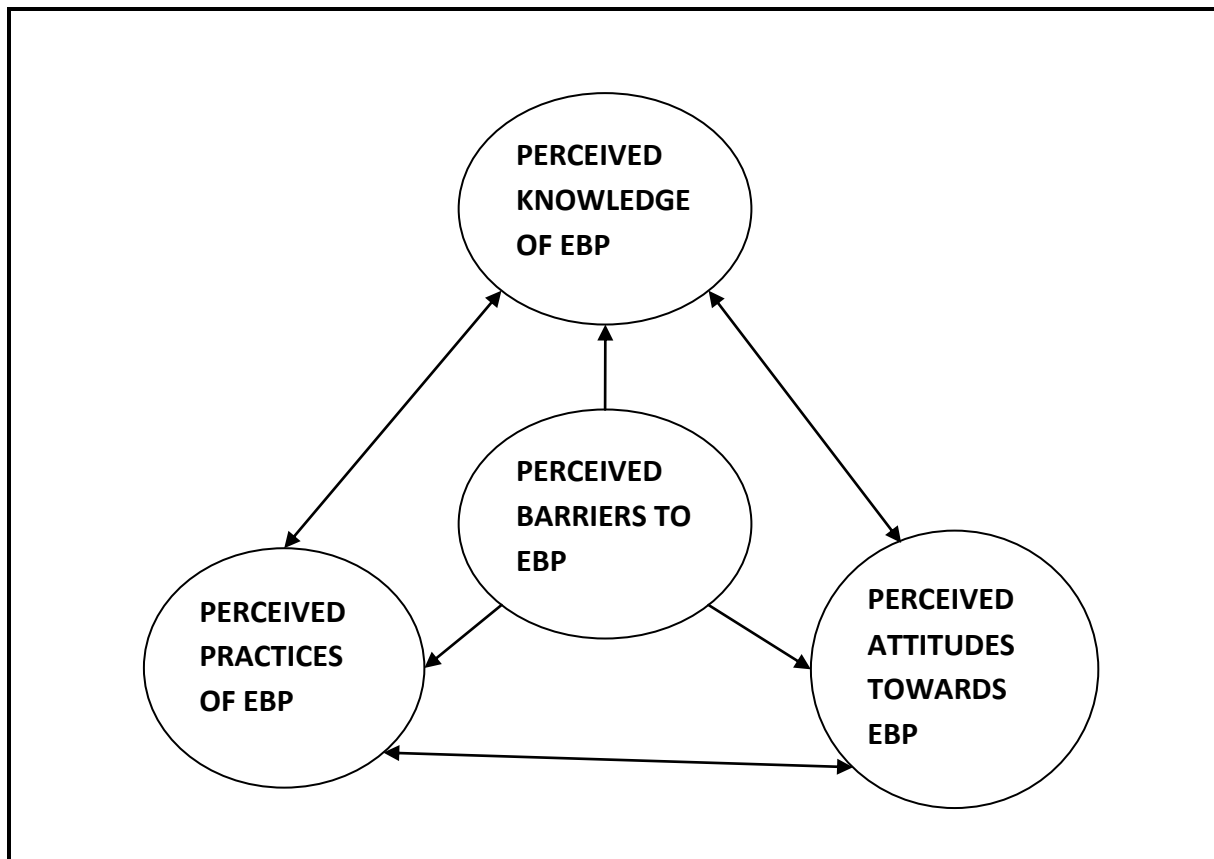


Figure 1.2: Schematic presentation of the theoretical framework for the study

Based on Roger's Diffusion of Innovation theory, the nurse is the adopter and EBP is the innovation in the case of this study. The nurse may acquire or pass the knowledge through communication channels, such as journal articles, clinical meetings and peer interaction. In the case of this study, the health care setting is the social system. As described by Rogers, the characteristics of the adopter and the practice setting such as the system norms influence the rate and extent of adoption. Therefore, the characteristics of the nurse, such as research and statistical skills can influence their knowledge, attitudes and /or practice of EBP. Similarly, the hospital setting (organisation), the nature of the innovation (EBP) and the communication channels are also among the factors that may affect the degree and extent of the adoption of EBP by the nurse. If the hospital management provides ample time, support and needed resources to the nurses, there is the likelihood that they will adopt EBP. The innovation (EBP) may be complex, difficult, simple and/or perceived as undesired by the nurses. These further influence their perception towards it.

Nurses in Minna General Hospital may have personal as well as organisational (practice setting) characteristics that may affect their adoption of EBP.

Rogers also proposed that the concepts in the model are related to one another and determine whether an innovation is adopted or not. Figure 1.2 above depicts the interrelationships of the concepts as derived from Rogers's Diffusion of Innovation theory. The two ways arrows show how each of the concepts are interrelated. If any of the concepts is lacking or poor, the adoption of the innovation may be poor or unfavourable. Thus, when an individual or group perceives having knowledge about a phenomenon, he/she becomes persuaded to perceive the phenomenon as positive. Although the degree of other factors such as peers and organization influences the perceived opinion and belief about the phenomenon. These further makes the individual to engage in activities perceived as taking part in such activity. And with support the individual continues with the activities. As illustrated in the schematic representation of the conceptual framework above, when the adopter, in the case of this study the nurse, perceives having the knowledge of the innovation (EBP), the individual develops positive attitudes towards EBP. The nurse with perceived positive attitudes towards EBP is likely to put the knowledge into practice. However, perceived barriers to seeking knowledge and implementation can prevent the nurse from having knowledge of EBP and/or prevent the development of positive attitudes, as well as the practice of EBP.

1.13 Organisation of the chapters in the dissertation

The dissertation is organised as follows:

Chapter One: This chapter describes the trends in evidence-based practice, the significance of the study to nursing, the research problem, research questions and the objectives of the study. It also describes the significance of the study and the theoretical framework underpinning the study.

Chapter Two: This chapter presents the review of literature in evidenced-based practice in the field of nursing and other health professions.

Chapter Three: The research methodology employed in the study is described in this chapter. This includes the research paradigm, research design, setting for the

study, the population for the study, sample and sampling technique, instrument for data collection, validity and reliability of the instrument, procedure for data collection, ethical considerations, data analysis, data management and method of disseminating the findings of the study.

Chapter Four: This chapter features the analysis and interpretations of the findings in the study.

Chapter Five: The last chapter presents a discussion of the findings of the study, the conclusions and the limitations of the study, as well as recommendations for further study.

1.14 Summary and conclusion

This chapter presented the introduction to the study, the background for the study, an overview of EBP, what constitutes evidence-based practice, the significance of EBP in the nursing profession, the statement of the problem, the purpose of the study, the significance of the study, objectives of the study, research questions, definition of terms and the theoretical framework underpinning the study.

In conclusion, this chapter has pointed out the debate on EBP among health care professionals in the globe and within Africa. The need for the application of EBP in patient care has, however, dominated the debate. Hence, there is considerable demand for nurses to incorporate EBP into their routine nursing practice.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a discussion of the literature that was reviewed in relation to the aims of this study. The review of literature enables researchers to establish familiarity with the existing body of knowledge related to the study to summarise what is known about the phenomenon of interest and to guide the current study (Grove et al., 2013). To source materials for this study, a search of the published literatures on EBP research articles was conducted using several databases, including Cumulative Index to Nursing and Allied Health Literature (CINAHL), Academic Search Premier, Educational Resource Information Centre (ERIC) and EBSCO. Published journal articles between 2000 and 2013 were used for this review, with most of the articles dated between 2008 and 2013.

The following keywords were used during the literature search: evidenced-based practice, evidenced-based nursing practice, evidence for practice, quantitative research, evidence, evidenced-based nursing, evidenced based medicine etc. The search was however restricted to English language articles. Relevant textbooks were also used by the researcher to supplement the electronic search.

The literature is reviewed under the following headings:

- An overview of the origin of evidence-based practice;
- The development of the concept of evidence-based practice in the nursing profession;
- The concept of evidence-based nursing;
- Nurses' knowledge of evidence-based practice;
- Nurses' attitudes towards evidence-based nursing;
- Nurses' application of evidence-based practice; and
- Nurses perceived barriers to evidence-based practice.

2.2 An overview of the origin of evidence-based practice

The origin of EBP in medicine can be traced back as early as 1972, Dr Cochrane, an epidemiologist, challenged the persistent high incidence of mortality among low birth weight infants despite the availability of evidence that the administration of corticosteroid to women during preterm labour could prevent (Chaboyer et al., 2004; Pope, 2003). Cochrane challenged the medical profession for not having systematic reviews from which sound clinical decisions could be sourced. This led to the establishment of the Cochrane collaboration in 1992 to provide health care practitioners with systematic reviews to serve as a basis for well informed decisions about health care (Chaboyer et al., 2004). In the same year, the first paper was presented that discussed evidenced based medicine as the new medical order. The paper emphasised that physicians need to appraise and utilize findings from research to guide their professional decision making. It expressed caution on complete reliance on pathology, intuition and clinical experience, arguing that although they are important, they may be misleading. The paper incorporated understanding and sensitivity to the emotional needs of patients (Charles and Fan, 2007).

In the early 1990s, health literature pertaining to evidence-based practice was dominated by medicine and to a lesser extent nursing and other healthcare professions (Edmond et al., 2006; Hamlin, 2007; Satterfield et al., 2009; Scott and McSherry, 2009). There is now an abundance of literature on EBP by such health care professionals, including nurses (Edmond et al., 2006; Hamlin, 2007; Satterfield et al., 2009; Scott and McSherry, 2009). The practice in health care has now shifted from the traditional approach to evidenced-based practice (Ayandiran et al., 2013; Berland et al., 2012). The basic feature of this approach is the shift from health care decisions being based on custom, tradition, authority and/or opinion to emphasis on using the best available evidence from research with integration of experience, patients' values and available resources (Maaskant et al., 2013; Mantzoukas, 2008; Yip Wai et al., 2013).

Studies have shown that nurses are increasingly recognising the role of EBP in their nursing practice (Brown et al., 2010; Chan et al., 2011b) and are as familiar with the term EBP/EBN as other health related professionals. According to Ferguson and Day (2007), nursing has embraced EBP as a result of the recognition and the increased emphasis on patient values and preference. To follow this approach, however, nurses must be able to locate evidence, evaluate it and integrate it with clinical judgment and patient preferences to determine the most clinically effective solutions to health problems (Maaskant et al., 2013; Sherriff et al., 2007; Yip Wai et al., 2013). This can be a challenge in some hospital settings as the nurse needs adequate and relevant information concerning the phenomenon, which in turn requires efficient access to that type of information (Ferguson and Day, 2007; Maaskant et al., 2013; Ozsoy and Ardahan, 2008; Ubbink et al., 2011).

2.3 Development of evidence-based practice in the nursing profession

The EBP movement in nursing has given rise to considerable debate, with both loyal, enthusiastic advocates and cynics, who urge caution and a balanced approach to health care practice (Chan et al., 2011b; DeVon et al., 2013; Knops et al., 2009; Melnyk et al., 2004; Sherriff et al., 2007; Turan et al., 2006). Those who advocate for EBP assert that it offers answers to sustaining high health care quality in our current cost-constrained environment. Their view is that a rational approach is needed to provide the best possible care to the most people, with the most cost-effective use of resources (Chan et al., 2011b; Melnyk et al., 2004; Sherriff et al., 2007). Critics on the other hand are of the view that the advantages of EBP are exaggerated and that individual clinical judgments and patient inputs are being devalued (DeVon et al., 2013; Knops et al., 2009; Turan et al., 2006). Although the process of integrating patients values with available evidence and clinical judgement may be difficult to some nurses as a result of low experiential knowledge and low clinical judgement ability (Agbedia, 2012; Ferguson and Day, 2005), EBP has demonstrated highly effective care to clients and their family (Chaboyer et al., 2004; DeVon et al., 2013).

There is no consensus about the origin of EBP in nursing among scholars of nursing. While some scholars argue that it developed concurrently with evidence based medicine (EBM), others argue that evidence based practice in nursing originated

from EBM (Titler et al., 2001). However, Florence Nightingale is often seen by nurses as the first nurse researcher, and she based her nursing practice on evidence (Rane, 2005). The research she conducted in the 1850s on morbidity and mortality among the soldiers during the Crimean War involved a scientific process and the application of recommendations based on the study findings led to changes in the environment for sick people including cleanliness, ventilation, clean water and adequate diet (Rane, 2005). Despite this long history, nursing only published its first evidence-based practice journal, *Evidence-Based Nursing*, in 1998 (Melnyk, 1999).

Although EBP has been discussed in the nursing literature for over two decades (Hutchinson, 2004), researchers are arguing that the nursing practice is still largely influenced by tradition, intuition and own experience rather than empirical evidence (Berland et al., 2012; Stetler et al., 2006; Ubbink et al., 2011). This is a source of concern considering the increasing emphasis on the significance of evidence based practice (Ayandiran et al., 2013; Berland et al., 2012; Squires et al., 2011a). Literature continues to point out that the progress of research and its appraisal in nursing has been rather slow (Berland et al., 2012; Boström et al., 2006; Eccles et al., 2005; Grol and Grimshaw, 2003; Heckenberry et al., 2006; Ubbink et al., 2011). Kirby (2004) suggests that this may be associated with lack of a well-developed research infrastructure and inadequate educational preparation of nurses. Furthermore, this becomes more complex due to lack of support from nurse leaders (Bartelt et al., 2011; Bostrom et al., 2008; Kajermo et al., 2008).

The position has been changing over the last three decades, with a good number of nurses conducting and leading researches (Edmond et al., 2006; Hamlin, 2007; Satterfield et al., 2009; Scott and McSherry, 2009; Rane, 2005). Their contribution to research is evident in the plethora of literature on different types of research that has been carried out by nurses, which plays an important role in evidence based practice (Chan et al., 2011b; Sables-Baus and Zuk, 2012). However, the publication of randomized controlled trials (RCTs) studies and RCT meta-analysis in nursing are still relatively low (Mantzoukas, 2008). Moreover, the evidence hierarchies are sensibly applied only to certain types of questions, such as questions about the effectiveness of interventions. Many other clinical questions of importance to nurses can best be answered with rich descriptive and qualitative data from level IV and V

studies. Another issue is that there are still clinical practice questions for which there are relatively little research data. In such situations, the nurse would will have to draw on other sources (Mantzoukas, 2008; Ozsoy and Ardahan, 2008; Rycroft-Malone et al., 2004; Ubbink et al., 2011).

Although the idea that informed nursing knowledge and nursing research supports nurses in evidence-based practice (Ferguson and Day, 2007), EBP is still a challenge to nurses given that most of them learned about research from a traditional perspective (Krainovich-Miller et al., 2009), which makes teaching research to nurses a special challenge (Agbedia, 2012; Evans, 2006). In spite of this, nurse researchers, often in the academia, have contributed greatly in nursing research. These researchers have studied various aspects of nursing and clients' responses to their health through the adoption of theories from non-nursing disciplines (Ferguson and Day, 2007). Rivers et al. (in (Burney et al., 2012) found that mortality among patients with septic shock decreased in the group assigned to early goal-directed therapy (30.5%) as compared to the group assigned to the institutional standard therapy (46.5%). The early goal-directed therapy recommends strategies such as conducting blood culture before antibiotic therapy and early initiation of antibiotics. This example serves as evidence that EPB improves the quality of care of patients (Burney et al., 2012).

2.4 Concept of evidenced-based nursing

Evidence-based nursing (EBN) is an approach that combines the best scientific evidence from nursing and nursing related research with the clinical perspectives of nurses in performing a full range of patient care activities that are pertinent to the nursing profession (McPheeters and Lohr, 1999). Another researcher, (Flemming, 1998), described EBN as a process employed by the nurse to integrate the use of best evidence, clinical expertise and patient preference to plan care and as well as evaluating the performance through a process of self-reflection or peer assessment. EBN allows nurses to scrutinize their professional practices through challenging their personal bias and incorporating the best available evidence into their clinical decisions while honouring patients' perspectives for care (Brown et al., 2010; Lipp, 2005).

EBN offers nurses with clinically active way ways to apply research findings to bridge the gap between nursing research and clinical practice. This is important because a professional nursing practice cannot be limited to only building a research data base, but needs translation into clinical care with the consideration of the individual patients' needs (Chaboyer et al., 2004; Ubbink et al., 2011). EBP involves making clinical decisions on the basis of the best possible evidence. Although the best evidence usually comes from rigorous research, EBP also uses other sources of credible information (Ozsoy and Ardahan, 2008; Rycroft-Malone et al., 2004; Ubbink et al., 2011), which may include experience and opinions of higher professional authorities. Health care providers should therefore endeavour to use other sources in addition to the findings of rigorous research to be able to use the best available evidence in their practice (Lipp, 2005).

2.5 Nurses' knowledge of evidence-based practice

The nurse carries personal responsibility and accountability for nursing practice and for maintaining competence by continual learning and being active in developing a core of research-based professional knowledge that supports evidence-based practice (Ayandiran et al., 2013; Berland et al., 2012; ICN, 2012). It could be said that for this single reason, nurses should be adept at identifying clinically relevant questions and have the knowledge and skills to determine the best approach for patient management (Breimaier et al., 2011; Gibbins, 2008). It is therefore not surprising that the importance of understanding and using research as an essential step in the process of EBP is well documented in nursing literatures (Chan et al., 2011b; Sables-Baus and Zuk, 2012).

In exploring nurses' levels of knowledge with respect to evidence-based practice, researchers have documented various sources of knowledge. Studies by Berland et al. (2012); Bertulis (2008); Rane (2005) and Thompson et al. (2005) found that for their daily practice, nurses typically use knowledge acquired from school, from experiences during practice and from their professional colleagues. Similarly, in their studies, Berland et al. (2012); Bertulis (2008); Bethabile and Simeon (2011) and Thompson et al. (2005) revealed that most nurses practices in making clinical decisions about the patient are determined by the instructions of physicians rather

than the use of available evidence. The dominant role of the physician in the health care institutions does not only impede EBP uptake, but can also lead to poor quality care in the health industry (Berland et al., 2012; Bertulis, 2008; De Pedro-Gómez et al., 2012). This may explain why nurses find it difficult to implement EBP even although they agree with the concept (Berland et al., 2012; Van Achterberg et al., 2008).

Some studies have shown that most nurses are not comfortable with the term EBP and have difficulty defining or expressing an understanding of the concept (Berland et al., 2012; Koehn and Lehman, 2008). In a similar study to determine the readiness of US nurses for EBP, nurses expressed lack of value for and knowledge about research much less EBP, which is a more technical term (Berland et al., 2012; Pravikoff et al., 2005). One may then conclude that the view of using the understanding and application of EBP in determining promotion of nurses, appointment of nurse leaders (Agbedia, 2012; Chan et al., 2011b) and increasing their payment (Chan et al., 2011b) may be a welcome idea. This is because positive attitudes, knowledge and skills in appraising research findings are necessary for nurses to be able to implement EBP in clinical practice (Scott and McSherry, 2009; Van Achterberg et al., 2008). Additionally, the translation of evidence into practice requires the ability to ask focused clinical questions, locate relevant evidence, appraising the evidence and putting the evidence into practice while integrating patient's values and evaluating the process (Scott and McSherry, 2009; Shaneyfelt et al., 2006).

Some findings showed that nurses generally lack basic knowledge of EBP. For example, in their studies of evidenced based practice among nurses, Burney et al. (2012) and Chan et al. (2011b) found knowledge about EBP to be overwhelmingly lacking among their participants. Similarly, while a good number of nurses reported lacking knowledge of identifying appropriate research designs (Chan et al., 2011b; Pravikoff et al., 2005), others reported lack of skills for conducting research, which is an important element of EBP (Burney et al., 2012; Chan et al., 2011b; Pravikoff et al., 2005; Ubbink et al., 2011; Bonner and Sando, 2008), thus creating a gap between knowledge and practice. However, Ofi et al. (2008) found that a good number of the nurses studied expressed good research and EBP skills. A study by

Sherriff et al., 2007) found that nurses did integrate research findings into practice, while other studies (Bartelt et al., 2011; Maaskant et al., 2013; Pravikoff et al., 2005) found that nurses indicated that they and their colleagues did not integrate research findings into practice and lacked knowledge of generating relevant information through electronic data bases such as the CINAHL and Medline. This is considered important as background knowledge of research conduct is necessary for the integration of evidence into daily clinical nursing practice.

It is important to note that some studies showed that nurses expressed high levels of knowledge regarding EBP (Bartelt et al., 2011). The different findings show that although many nurses may not be able to monitor, review their practice, formulate a research question (Boström et al., 2009a; Yip Wai et al., 2013) or identify sources of evidence (Ozsoy and Ardahan, 2008; Ubbink et al., 2011), others expressed high levels of knowledge of EBP (Bartelt et al., 2011). This may be due to the years of experience and educational levels that vary among nursing staff. In studies conducted by Bartelt et al. (2011) and Bonner and Sando (2008), the nurses knowledge of research was found to be statistically significant and associated with high nursing ranks, with senior nurses having more knowledge than their junior colleagues. The studies also showed significant relationships between knowledge of EBP and nurses' attitudes and practice.

Other findings have also revealed that educational qualifications play a role in nurses' understanding of EBP. Education equips individuals with knowledge and skills to render care to individuals and the community in complex situations and settings (Agbedia, 2012; Ayandiran et al., 2013; Bethabile and Simeon, 2011). This can be seen in several studies (Bonner and Sando, 2008; Estabrooks et al., 2003; Hutchinson and Johnston, 2004; Kajermo et al., 2008; Melnyk et al., 2008), which concluded that nurses who received lessons in research during their undergraduate training or have higher educational qualification are more likely to appreciate research designs, the use of empirical studies in journals, statistical analysis and ethical research. Also of note is the organizational atmosphere. If the organizational atmosphere is friendly, individuals will be eager and willing to update their knowledge on research and may be more willing to incorporate evidence into practice (Chan et al., 2011b; De Pedro-Gómez et al., 2012; Turan et al., 2006).

In their study of nurses in Southern Nigeria, Ofi et al. (2008) found that although there has been an improvement in nurses' involvement in research and application have, there are still remarkable gaps in research knowledge and experience, which requires urgent attention. Findings by Uneke et al. (2010) indicated that most care providers in Nigerian health institutions are not highly knowledgeable about research and its findings. The authors added that even those who are responsible for the health policies of the country have little or no knowledge of sound evidence, which has a negative consequence on the health of individuals.

2.6 Nurses' attitudes towards evidence-based practice

Although the pace of nurses' acceptance and implementation of EBP has been slow, several studies on nurses' views of EBP indicated that nurses consider it to be a positive development and important in providing better patient care (Upton and Upton, 2006; Ayandiran et al., 2013; Boström et al., 2009a; Majid et al., 2011; Squires et al., 2011b). Findings have also shown that positive attitudes towards EBP are associated with several factors, including high professional rank (Bonner and Sando, 2008; Knops et al., 2009). Although Boström et al. (2006) did not find significant differences of attitude between groups of nurses, they suggest that senior nurses, especially at managerial level, are more likely to have positive attitudes towards the use of evidence than junior nurses (Bonner and Sando, 2008; Knops et al., 2009). Similarly, older nurses, those with tertiary qualification and those working in higher ranked positions are more likely to have higher positive attitudes towards EBP (Heckenberry et al., 2006; Knops et al., 2009).

A study conducted in Turkey to assess the challenges of the adoption of evidence-based maternity practice (Turan et al., 2006) found that providers had negative attitudes towards EBP. The participants not only believed that EBP would violate privacy, but would also cause conflict between providers and patients' family. In a related study on EBP, Knops et al. (2009) assessed the attitudes of surgical nurses and surgeons with respect to EBP. The findings revealed that the surgeons had positive attitudes towards EBP and a good understanding of EBP terminology, believing that research findings are useful in daily practice and can improve patient care. The surgical nurses, on the other hand, were reported to have only moderate

attitudes towards EBP and were not as familiar with EBP terminology as their surgical counterparts. However, the findings of the study revealed no correlation between age, sex or work experience and attitudes towards EBP (Knops et al., 2009).

In a study of implementing clinical research in the high acuity setting of an emergency department, DeVon et al. (2013) found that some emergency nurses expressed concerns that conducting research interfered with or had the potential to interfere with the provision of patient care (DeVon et al., 2013). This is of concern and may be attributable to the fact that most nurses do not regard information seeking as part of the culture of the job (Bertulis, 2008).

Nurses with positive attitudes towards EBP may be more tolerant of critiquing their practices (Majid et al., 2011; Yip Wai et al., 2013) as well as being more likely to believe that EBP is useful in nursing care (Breimaier et al., 2011; Ofi et al., 2008; Ubbink et al., 2011). Although many researchers have found that nurses prefer to use the traditional approach (Berland et al., 2012; Bertulis, 2008; Carlson, 2009; Krainovich-Miller et al., 2009; Rane, 2005; Thompson et al., 2005), others have found that although the majority of nurses had positive attitudes towards EBP, they felt that the heavy work load in the work place would hamper them in coping with the demands of EBP (Breimaier et al., 2011; Majid et al., 2011). These studies also found that participants believed that time and mentoring could facilitate their understanding and application of EBP. A similar finding is seen in Sherriff et al. (2007), who indicated that nurses agree with the idea that EBP has the potential to improve patient care as seen in many international literatures. In addition, (Chan et al., 2011b) concluded that nurses are motivated and interested in understanding research findings and integrating them into practice.

2.7 Nurses' perceived engagement in evidence-based practice

Introducing evidence and clinical guidelines into routine daily practice may be associated with difficulties (Grol and Grimshaw, 2003). It is therefore not surprising that available data shows that many patients do not receive appropriate care, or receive unnecessary or harmful care. Although many approaches claim to offer

solutions to these problems; the most effective and efficient approach was not clear (Grol and Grimshaw, 2003).

However, in this 21st century, the implementation of EBP by health professionals is seen as a basic approach that does not only maximize professional satisfaction but also enhances better patient care outcomes (Koehn and Lehman, 2008; Mallory, 2010; Mantzoukas, 2008; Melnyk et al., 2008). As such, the increase in nurses' involvement in clinical decision making warrants them to note the significance of using best evidence to make a justifiable clinical decision (Mantzoukas, 2008). But in a study of application of EBP, findings have shown that only a small proportion of health care practitioners, including nurses, use this approach in their clinical practice (Melnyk et al., 2008; Milner et al., 2005).

A culture that embraces research and evidence-based practice is a „hallmark of professional nursing“ and is imperative when providing quality health care (N&MCN, 2012). Nurse clinicians are therefore increasingly expected to incorporate the best available evidence into their practice, to participate in research teams and to plan and conduct their own research projects. However, nurses across all practice areas have identified difficulties with being actively involved in research (Milner et al., 2005) and, getting them to adopt new practices may not be easy and may take a long time (Guldbrandsson, 2008; Koehn and Lehman, 2008; Turan et al., 2006).

Although all nurses do not need to conduct research, they need to know how to apply research findings in their practice (Heckenberry et al., 2006). However, some studies have shown that this is not the case and the reality is that most care providers do not use EBP in their daily practice (Bartelt et al., 2011; Berland et al., 2012; Knops et al., 2009). The findings of Boström et al. (2006) and Eccles et al. (2005) show that research finding uptake into practice and the implementation of EBP by health care professionals has been slow and inconsistent. Furthermore, most nurses are not conscious of the importance of updating their professional knowledge (Berland et al., 2012; Breimaier et al., 2011). There is consequently a gap between what is known and what is practiced, with most practices being based on routine clinical practice (Bartelt et al., 2011; Berland et al., 2012; Knops et al., 2009) .

The findings of other studies regarding nurses' use of evidence-based practices have been inconsistent (Carlson, 2009). For example, some studies have shown that the majority of nurses do not engage in research related activities (Bonner and Sando, 2008; Boström et al., 2009a; Thompson et al., 2005). Others have found that nearly half of the nurses indicated that they would like to engage in research activities, but lack the skill and time (Bonner and Sando, 2008; O'Donnell, 2004). Results from some studies showed that few of the nurses formulate questions and search databases (Bartelt et al., 2011; Boström et al., 2009a; Chan et al., 2011b), while others found more nurses indicating that they critically appraised and implemented the evidence (Bartelt et al., 2011; Boström et al., 2009a). In the studies by Berland et al. (2012) and Knops et al. (2009), most of the nurses self-reported that they hardly apply research-based knowledge in their clinical decisions. In a study in Turkey assessing EBP in maternity, Turan et al. (2006) documented that most of the practices were not based on EBP. The researchers added that most of the providers, particularly those at lower levels, were unaware of the existence of research evidence and based their care on the more traditional approach in the belief that they were not empowered to change practices.

The practice of EBP involves a number of activities, which include the ability to formulate clear questions, track down the evidence, critically appraise the literature, integrate the evidence in practice and measure the outcomes (Boström et al., 2009a; Majid et al., 2011; Yip Wai et al., 2013). However, in order for EBP to be consistently implemented in health care organisations, a culture of best practice needs to be established, in which all nursing professionals, regardless of educational preparation, have an important role in advancing evidence-based culture (Melnik et al., 2008). There is also the need for professionals to formulate guidelines for the implementation of EBP (Heckenberry et al., 2006), witness others using EBP (Knops et al., 2009; Krainovich-Miller et al., 2009), increase awareness and positive attitudes towards EBP (Chan et al., 2011b; Sherriff et al., 2007) and be constantly involved in EBP activities (Knops et al., 2009). In addition, relevant stake holders, such as nurse leaders, researchers and educators, must become involved in achieving successful implementation of EBP (Ferguson and Day, 2007; Frasure, 2008; O'Donnell, 2004).

There is also the need for mentoring and support from nurse managers and professional colleagues who are conversant with EBP and creating time to enable nurses acquire skills on its implementation (Agbedia, 2012; Bostrom et al., 2008; O'Donnell, 2004). Accessibility of research findings, which are user-friendly and located close to person's workplace, is also seen to be important (Bostrom et al., 2008). Although studies have found that nurses are seen to be using research findings to varying extents in clinical practice (Boström et al., 2009b; Estabrooks et al., 2007), it is important to note that their research orientation and utilization are complex phenomena, with distinct patterns internationally (Heckenberry et al., 2006).

2.8 Perceived barriers to evidence based practice

In order to bridge the gap between what is known and what is done, a common strategy is to identify the barriers to knowing and/or implementation and then use appropriate interventions to control the barriers (Bostrom et al., 2008). The literature review highlighted several factors that have been identified by researchers as being barriers to the uptake of EBP (Bostrom et al., 2008; Boström et al., 2009a; Breimaier et al., 2011).

Inadequate manpower and resources are both major challenges in most health care institutions (Bartelt et al., 2011), with many studies specifically documenting the shortage of nursing personnel in health care institutions (Agbedia, 2012). The nurse patient ratios, as well as lack of available beds often result in stressful working conditions and inappropriate job allocation (Bartelt et al., 2011; Agbedia, 2012). The situation may become more complex when implementing EBP as it creates additional demands on nurses to search for and appraise evidence to be used in clinical decisions of their patients (Obansa and Orimisan, 2013). This suggests that nurses face different barriers to other professionals in the health care sector that affect changing their practices to be evidence-based (Bostrom et al., 2008). To bridge this gap, the best approach would be to identify their particular barriers in order to generate possible solutions (Bostrom et al., 2008; Boström et al., 2009a; Breimaier et al., 2011).

Many studies on the barriers to the implementation of EBP among nurses identified both personal and organizational barriers (Adib-Hajbaghery, 2007; Bartelt et al.,

2011; Bonner and Sando, 2008; Chan et al., 2011b; Pravikoff et al., 2005). The personal barriers to EBP include inability to formulate clinical questions, lack of skills or knowledge to search for relevant evidence or to evaluate the evidence and integrate it into clinical decisions (Pravikoff et al., 2005), poor computer skills, poor statistical knowledge (Bertulis, 2008; Thompson et al., 2006), lack of authority and lack of understanding data bases (Bertulis, 2008). Complex statistical information and dense research jargon also pose barriers to knowledge diffusion to most practicing nurses (Breimaier et al., 2011; Knops et al., 2009; Maaskant et al., 2013; Majid et al., 2011; Ofi et al., 2008; Sherriff et al., 2007). This is of great concern for an effective evidence-based practice, which requires the ability to frame searchable questions, finding and appraising relevant research evidence and acting on that evidence (Sackett et al., 2000). The lack of these skills may result in a tendency to select information sources on the basis of convenience rather than quality (Bertulis, 2008).

Studies have also found that many clinical nurses are constrained in the use of research evidence in practice by their educational preparation and research skills. Many have not received any formal instruction in research and may therefore lack the skills to judge the merits of a study (Boström et al., 2009b; Majid et al., 2011). Nurses' attitudes toward research and their drive to engage in EBP have constantly been identified as potential barriers. Studies have found that the more positive the attitude, the more likely the nurse is to use research in practice (Chan et al., 2011b; Majid et al., 2011; Sherriff et al., 2007; Ubbink et al., 2011; Yip Wai et al., 2013).

Other barriers that nurses attribute to the uptake of EBP are isolation from other colleagues who are knowledgeable about EBP to enable them acquire the skills, inadequate facility for implementation (Bostrom et al., 2008), lack of computer skills and lack of computer access, difficulty in understanding the relevant literature, which is academic in nature, and difficulty in sourcing, research reports and articles (Bartelt et al., 2011; Bostrom et al., 2008; Boström et al., 2009b; Koehn and Lehman, 2008; Maaskant et al., 2013; Majid et al., 2011). The level of individual nurse's knowledge, the structure of the health care system, lack of self-confidence and the traditional physician dominant health care approach also affect the use of EBN (Adib-Hajbaghery, 2007; Cotterill-Walker, 2012). (Hicks, 1997) argues that the lack

of confidence in nurses is associated with the history of the profession as nurses are predominantly women who have not been adequately prepared, either educationally or psychologically, for the academic task of research. This is the case in Nigeria, where nurses are not exposed to academic research during their training, which hinders their awareness and utilization of EBP (Agbedia, 2012).

Interestingly, in contrast to the above studies, Bartelt et al. (2011) found that not having had a background in research knowledge did not cause barrier for the uptake of EBP among nurses. The participants in that study were exposed to a series of EBP educational sessions and computers were readily available for use throughout the institution (Bartelt et al., 2011). It is therefore pertinent to acknowledge the role of education and training in relation to the implementation of EBP (O'Donnell, 2004; Sherriff et al., 2007).

Organizational climate and support are critical in the adoption of EBP (Adib-Hajbaghery, 2007; Heckenberry et al., 2006; Rapp et al., 2008). Many of the major impediments to using research in practice stem from the organizations that train and employ nurses. Organizations resist change, perhaps to an even greater extent than individuals, unless there is a strong organizational perception that there is something fundamentally wrong with the status quo (Adib-Hajbaghery, 2007; Heckenberry et al., 2006; Rapp et al., 2008). Inadequate or lack of library materials, Internet access and time are major organizational barriers in EBP (Bertulis, 2008; Knops et al., 2009; O'Donnell, 2004).

Insufficient time is one of the greatest reported barriers to implement new ideas (Adib-Hajbaghery, 2007; Bartelt et al., 2011; Bostrom et al., 2008; DeVon et al., 2013; Hutchinson and Johnston, 2004; Kajermo et al., 2008; McInerney and Suleman, 2010). Nurses experience a continual challenge with time and it is crucial that they have adequate time available for them to successfully implement EBP into their professional practices (Bartelt et al., 2011; Chan et al., 2011b; Sherriff et al., 2007). Difficulty in accessing relevant literature on EBP has also been documented as a factor that hampers the integration of EBP among nurses, particularly for nurses who work in small, rural and remote facilities. Nurses also find it difficult to deal with

the enormous amount of literature on health issues, published from different sources (Majid et al., 2011).

Other organizational factors that affect nurses' uptake of EBP include distance from the hospital, local staffing levels, face-to-face support and educational opportunities that can facilitate (Heckenberry et al., 2006). Workload, due to staff shortage and increased patient burden (Heckenberry et al., 2006; Upton and Upton, 2006), and the confidence to express opinions, and challenge and question practice complicate EBP barriers for nurses (Cotterill-Walker, 2012). Staff shortages, in particular, not only pose a challenge to EBP uptake, but also result in an inappropriate staff mix, which may consequently lead to hazardous working conditions (ICN, 2006).

The challenge for nursing is to equip practitioners to read, critically review and appropriately implement research-based studies and other evidence for practice (Sherriff et al., 2007; Hutchinson and Johnston, 2004; Kajermo et al., 2008). There is need for nursing leaders, decision makers, clinicians and administrators to appreciate the need to reduce organizational barriers that hinder the adoption of EBP (Bartelt et al., 2011; Gifford et al., 2007; Heckenberry et al., 2006; Hutchinson and Johnston, 2004; Kajermo et al., 2008) as such supports has been seen to be necessary if EBP is to be effective (Gifford et al., 2007; Heckenberry et al., 2006; Hutchinson and Johnston, 2004; Kajermo et al., 2008). Evidenced-based training, the allocation of resources, provision of adequate time and incentives to undertake EBP (Rapp et al., 2008; Estabrooks et al., 2003; Hutchinson and Johnston, 2004; Kajermo et al., 2008), support and encouragement are vital in the adoption and successful implementation of EPB (Bostrom et al., 2008; Sherriff et al., 2007; Estabrooks et al., 2003; Hutchinson and Johnston, 2004; Kajermo et al., 2008) .

2.9 Conclusion

The aim of the study was to explore and describe the perception of registered nurses towards evidence-based practice. The researcher conducted a review of relevant literature to enable him gain insight into the phenomenon of interest. Therefore, this chapter highlighted the types of literature used for this study, the data bases consulted and the search terms used by the researcher. Referring to previous research, the chapter also presented a discussion on the concept of EBP, the origin

of EBP, nurses' knowledge of EBP, nurses' attitudes towards EBP, current nursing practices and nurses' perceived barriers to evidence-based practice

CHAPTER THREE

RESEARCH METHODS

3.1 Introduction

Research methodology is the details of the procedures of data collection, analysis and writing (Creswell, 1994). The selection of methods and their application are always dependent on a number of factors, which include the purpose and objectives of the study, the nature of the phenomenon under investigation, the underlying theory or expectations of the researcher, the intended audience and the experience of the researcher (Creswell, 1994).

Therefore, this chapter presents a discussion on the research paradigm which guided the decision on the study methodology, the research design, the population for the study, the sample and sampling technique, the instrument for data collection and the procedure for the collection of data. The chapter also features the procedure for data management and ethical procedures undertaken by the researcher for the study.

The purpose of this study was to explore the perceptions of registered nurses regarding evidenced based practice in General Hospital Minna, Niger state, Nigeria. The research methodology for this study was guided by the objectives of the study, which were:

1. to explore and describe registered nurses' perceived levels of knowledge of evidence-based practice;
2. to explore and describe registered nurses' perceived attitudes towards evidence-based practice;
3. to explore and describe registered nurses' perceived engagement in evidence-based practices; and
4. to explore and describe registered nurses' perceptions of barriers to evidence-based practice.

It is pertinent to mention here that researchers differ in their philosophical underpinnings, beliefs and ways of interacting and viewing their surroundings, which influences their choice of which methodology to employ to conduct their studies. This belief system is often referred to as a paradigm. The researcher will therefore give an account of the belief system (paradigm) that influenced his choice of research methodology in this study.

3.2 The research paradigm for the study

Paradigms are described as patterns of beliefs and practices used by researchers to regulate their disciplinary enquiry in order to accomplish their goals (Weaver and Olson, 2006). A paradigm is a whole system of thinking, an overall philosophical framework of how scientific knowledge is produced. A paradigm includes the main assumptions, the questions to be answered in the investigation, the research technique to be used and the basic principles behind their use (Weaver and Olson, 2006). Paradigms are important to scientific communities because they answer the discipline's most important questions and shape the way scientists conduct research (Monti and Tingen, 1999). They provide scientists with a general orientation to phenomena, a way of organizing perceptions, criteria for selecting problems, guidelines for investigations and methods and limitations on possible solutions to the question (Monti and Tingen, 1999).

Paradigms are made up of various components, namely: Ontology, Epistemology, Axiology, Rhetoric and Methodology (Creswell, 1994). Ontology deals with philosophical claims about what knowledge is, epistemology deals with how reality is known, axiology deals with the value that goes into it, rhetoric deals with how it is written, while the methodology deals with how the knowledge is studied (Creswell, 1994). Crotty (in Creswell, 1994) gave four examples of paradigm questions that explain what informs the decision to conduct a study and informs the choice of approach. These questions are: the ontological question (what is the nature of reality?), the epistemological question (what is the nature of knowledge, the relationship between the researcher and the subjects and how is knowledge generated?), the methodological question (how can the researcher go about to

obtain the desired knowledge?) and the method question (what methods procedures or techniques are to be used?)

The approaches of addressing these questions are discussed below in line with the paradigm that will underpin this study.

There are two dominant paradigms in nursing research which are the positivist paradigm and interpretivist paradigm. It is pertinent to mention that the positivist paradigm is aligned to quantitative research (Monti and Tingen, 1999) and therefore of interest in this study. Thus, researcher proposes to study the perceptions of registered nurses towards EBP within a positivist paradigm.

3.3 The positivist paradigm

The purpose of science is to discover laws or products in order to be able to explain and predict events in the world. Theories describing reality in formal language could be verified or disproved by observation of objects in the world. Thus, science resulted in a product, a theory, that could be used to describe, predict, and prescribe (Monti and Tingen, 1999). The positivist researcher views science as value free and the world as objective. He sees reality as a whole, but understands the whole when studied in parts (Creswell, 1994). Methods such as observations and experiments are used by the positivist researchers to collect facts which enable them to develop laws and theories (Creswell, 1994).

In addressing the ontological question (what is the nature of reality?), the positivist researcher believes in the existence of an objective reality which can be understood, controlled and predicted by means of cause and effects. The researchers' role is to predict and control natural phenomena as they occur. In addressing the epistemological question (what is the nature of knowledge, how is knowledge generated and what is the relationship between the researcher (knower) and what can be known?), the positivist sees the researcher as detached from the objects being studied. The objects are studied objectively without the researcher and the object influencing one another. In relation to the methodological question that is how the researcher goes about knowing the desired knowledge; the positivist emulates the physical scientist. The researcher is free of bias and subjects the stated

questions or hypothesis to empirical testing in order to verify them. The researcher remains detached, neutral and objective as he or she measures aspects of social life, examines evidence and/or replicates the research of others (Creswell, 1994). The methods question regarding the methods and techniques that can be used is addressed by the positivist through the use of measuring instruments, such as the questionnaire and observation (Creswell, 1994).

The positivist paradigm is therefore essential if nursing science is to substantiate claims regarding nursing care and the responses of clients in health and illness situations, provide explanatory models, and test and generate theory (Monti and Tingen, 1999). Pertinent to this, the researcher conducted this study within the positivist paradigm, which enabled him to objectively study registered nurses perceptions of EBP in General Hospital Minna, Niger state, Nigeria.

3.4 The research design

The research design is the overall plan used by the researcher to obtain answers to the object being studied and for handling some of the difficulties encountered during the research process (Hutchinson and Johnston, 2004; Polit and Beck, 2004). The research design serves as a blue print to the researcher in planning and implementing the study to control factors that can affect its validity and reliability (Burns and Grove, 2009). The research design for this study was an explorative descriptive design. Exploratory descriptive research investigates the full nature of the phenomenon, the manner in which it is manifested, and other factors to which it is related (Polit and Beck, 2004).

Also, for this study, a quantitative approach was used. A quantitative approach employs deductive reasoning to generate hunches that are tested in the real world (Polit and Beck, 2004) and typically moves in systematic manner from problem identification through the concepts, designs, data collection to the solution (Polit and Beck, 2004). Quantitative researchers are aligned to the positivist paradigm and therefore gather empirical evidence which is inclined to objective reality that can be obtained through the senses (Houser, 2008; Polit and Beck, 2004). The quantitative

researcher, as a positivist purist, employs cause and effect thinking, use of hypotheses and questions, measurements, observations, experiments and surveys to collect data and use methods such as statistics for interpretation (Creswell, 1994; Houser, 2008; Polit and Beck, 2004).

By using this approach, the researcher will gain more insight into the perceptions of registered nurses regarding EBP in General Hospital Minna. The researcher will then accurately describe the findings.

3.5 Setting for the study

The setting for this study was General Hospital Minna. The hospital is located in Minna, the capital of Niger state, Nigeria. It is a secondary health care facility owned by the state government. The hospital is a public facility that serves Minna community. It provides acute, chronic, outpatient and in-patient services, as well as acute trauma services. It also has an Intensive Care Unit (ICU) for the provision of intensive care to clients in need. Other wards and units in the hospital include: male surgical (A ward), male medical (B ward), female surgical, female medical, paediatric ward (medical and surgical) gynae ward, antenatal ward, post-natal ward, accident and emergency unit, operating theatre, ear, nose and throat (ENT) ward, HIV clinic (heart to heart), ophthalmic clinic and outpatient clinic.

General hospital Minna serves as a referral centre for cases from the primary health care facilities as well as other secondary facilities within the state. It provides services to both public and private clients. The hospital is also one of the accredited centres for the National Health Insurance Scheme (NHIS) and therefore provides services to those who are registered under NHIS in the hospital.

The hospital is largest in the state and has capacity for 300 beds with total nursing staff of 322 distributed in different wards and units of the hospital. The researcher believes that the large number of nursing staff in the hospital and its location make it an appropriate setting for this study.

3.6 Population for the study

A population is the entire set of subjects that is of interest to the researcher (Houser, 2008; Polit and Beck, 2004). It is the group which the researcher would like to generalize the findings of a study (Houser, 2008; Polit and Beck, 2004). The members of the population who meet the sampling or inclusion criteria are referred to as the target population and those whom the researcher has reasonable access to are referred to as the accessible population (Burns and Grove, 2009; Polit and Beck, 2004).

The population for this study was the 322 registered nurses working in General Hospital Minna, Niger state, Nigeria. The target population for the study was 300 registered nurses who met the sampling criteria.

3.7 Inclusion and exclusion criteria

To be included in the study, potential participants had to meet the following criteria;

- be a general nurse working in General Hospital Minna;
- be currently registered with the Nursing and Midwifery Council of Nigeria; and
- have worked as a general nurse for not less than two years.

Those who did not have a current licence to practice as a registered nurse and had been employed for less than two years at the time of this study were excluded from the study.

The researcher will generalize the findings of this study to the nurses working in General Hospital Minna, Niger State, Nigeria.

3.8 Sample and sampling technique

Purposive sampling was applied in this study, which is a type of non-probability sampling. Although not every element in non-probability sampling has an equal chance of being included in the sample (Hutchinson and Johnston, 2004; Houser, 2008; Polit and Beck, 2004), it allows the researcher to select study participants consciously based on the inclusion and exclusion criteria (Grove et al., 2013). For

this study therefore the researcher purposively drew the sample from the different sections of the nursing units ensuring that all ranks were represented proportionately and based on the inclusion criteria for the study.

The sample size for this study was 150 (50% of the target population) registered nurses working in General Hospital Minna. This sample was based on the resources and time available to the researcher as well as the belief of the researcher that the sample was large enough to be representative of the target population. The sample was drawn from all the units of the hospital so that a cross sectional idea of the perceptions of the general nurses on EBP could be explored. To select samples from each of the 24 units of the hospital, the researcher allocated numbers to participants based on the proportion of nurses in each unit, thus borrowing an element of quota sampling. According to (Charles and Fan, 2007; Parahoo, 2006), this approach of using more than one sampling technique in a single study is usual in modern research.

3.9 Instrument for data collection

Evidence for a study in the positivist paradigm is gathered according to a specified plan, using formal instruments to collect needed information, which is usually quantitative, that is, numeric (Polit and Beck, 2004).

The data for this study was collected using a structured questionnaire. The researcher adopted and combined aspects of two questionnaires, namely: Adopting Evidence-Based Practice in Clinical Decision Making: Nurses Perceptions, Knowledge and Barriers (Majid et al., 2011) and the Evidence-Based Practice Questionnaire (Upton and Upton, 2006). The first questionnaire, Adopting Evidence-Based Practice in Clinical Decision Making: Nurses Perceptions, Knowledge and Barriers, was developed by a team from the Information Studies Faculty of the Nanyang Technological University and nursing representatives from the National University Hospital, all in Singapore. The instrument was used to collect data from registered nurses working in two hospitals in Singapore. The second questionnaire, Evidence-Based Practice (Upton and Upton, 2006) was purposely developed in Wales to have a self-report instrument that can measure EBP and can be used to enhance the implementation of EPB among nurses. The researcher only adopted the

tools on perceived attitudes, practices and perceived barriers from the former and the tools on perceived knowledge/skills of EBP from the latter.

The questionnaire consisted of five sections, A – E, all presented in the form of a 5 point Likert scale. Section A consisted of 5 items about the demographic characteristics of the respondents. Demographic characteristics (variables) are attributes of the subjects that were measured during the study and used to describe the sample (Burns and Grove, 2009). The items on demographic characteristics of this study were developed by the researcher to capture the personal and professional characteristics of the registered nurses. Personal demographics were age and gender. Professional demographics included were highest nursing qualification attained, designation (professional ranks), name of ward/unit and number of years practicing as a nurse. This information will provide a good understanding of the characteristics of the nurses working in the study setting (Burns and Grove, 2009). Section B of the questionnaire consisted of 15 questions about the respondents' perceived knowledge of evidence-based nursing, Sections C, D and E consisted of 5, 9 and 9 questions about the respondents' perceived attitudes, perceived practices and perceived barriers towards EBP, respectively. Where the statements on the 5-point Likert-scale were positively stated, agreeing indicated favourable response, which attracted a higher score. The scores assigned to the scale were: Strongly Agree (5), Agree (4), Disagree (3), Strongly Disagree (2) and Undecided (1). The final outcomes of the scores were determined based on the sum of all of the items. However, the second through to the fifteenth item in the second section of the questionnaire were rated differently as poor, fair, good, very good and excellent. Higher scores in the scale indicated greater perceived knowledge, attitudes, practices and perceived barriers of EBP and vice versa.

The researcher also presented the questionnaire to the supervisor to solicit the advice of an expert.

3.9.1 Validity and reliability

Validity is a fundamental consideration in instrument development or adoption and refers to the extent to which an instrument accurately measures the attribute it is supposed to measure (Kumar, 2005; Polit and Beck, 2004). It determines the extent

to which an instrument reflects the abstract construct that the researcher is investigating (Burns and Grove, 2009). It was therefore necessary for the researcher in this study to establish the validity of the instruments adopted.

Although there are different ways through which the validity of an instrument can be assessed, such as criterion, content and construct validity (Burns and Grove, 2009), content validity was used in this study. Content validity is the ability of the items on an instrument to represent all the major content of the construct being measured (Burns and Grove, 2009).

When the researcher adopted the two instruments, the concern was whether the items they contained were representative of the general perceptions of the registered nurses (validity) which the researcher intended to measure. The researcher therefore consulted the supervisor, an expert in nursing research, to evaluate the content of the questionnaire. The researcher also used content validity to assess the validity of the instruments that he adopted, which enabled the researcher to ensure that all the elements of the theoretical constructs were covered in the instrument.

Instrument reliability is the ability of an instrument to consistently provide the same results in repeated measurements or occasions (Burns and Grove, 2009; Polit and Beck, 2004). Furthermore, it plays a great role in the choice of an instrument to be used in a study (Burns and Grove, 2009). Instrument reliability in a study is a major criterion for assessing its quality and adequacy (Burns and Grove, 2009; Polit and Beck, 2004). Reliability exists in degrees and expressed as a form of correlation coefficient, with 1.00 indicating perfect reliability and 0.00 indicating lack of reliability (Burns and Grove, 2009). The lowest acceptable reliability coefficient for an existing instrument is 0.80 (80% reliable) and for new instrument 0.70 that is 70% reliable (Burns and Grove, 2009).

The assessment of the reliability of an instrument can be done in different ways depending on the nature of the instrument and on the aspect of reliability under consideration (Polit and Beck, 2004). Three major aspects that are considered are: stability, internal consistency and equivalence (Burns and Grove, 2009; Polit and Beck, 2004). For this study the researcher employed internal consistency.

3.9.2 Internal consistency

Internal consistency examines the extent to which all the items in the instrument measure all the constructs. That is to say the instrument designed to measure an attribute should be composed of items that measure only that attribute (Burns and Grove, 2009; Polit and Beck, 2004). A statistical analysis, Cronbach's alpha coefficient, was used to establish the internal consistency. Instruments that have items with Cronbach's alpha coefficient values of between 0.8 - 1 is considered to measure the attributes of the constructs.

The questionnaires adopted by the researcher for this study had been previously used. The first questionnaire, „Adopting Evidence-Based Practice in Clinical Decision Making: Nurses Perceptions, Knowledge and Barriers“ was assessed by its authors to be valid and reliable. The Cronbach's α of different sections of the questionnaire were between 0.681 - 0.954 (Majid et al., 2011).

The Evidence-based Practice questionnaire (EBPQ) was developed to assess health workers practices, attitudes and knowledge/skills towards EBP (Upton and Upton, 2006). Internal consistency was used to establish the reliability of the instrument. The entire questionnaire had Cronbach's α of 0.87. Specifically the Cronbach's α for practice of EBP was 0.85, attitude subscale Cronbach's α 0.79 and Cronbach's α 0.91 for the knowledge/skills subscale (Upton and Upton, 2006). The validity of the instrument was established through construct validity. The correlation coefficient of the instrument ranged from 0.3-0.4 ($P < 0.001$) suggesting moderate, but positive relationships (Upton and Upton, 2006).

3.9.3 Pilot testing

A pilot study was conducted to ensure understandability and comprehensibility, as well as the validity and the reliability of the modified instrument. The merged questionnaire was pilot-tested with 20 registered nurses in a similar hospital. Reliability for each of the four sections of the questionnaire was tested using SPSS version 20. The sections with their respective Cronbach's α are shown in Table 3.1 below:

Table 3.1: Cronbach's alpha of the instrument

Section	Attribute	Cronbach's α
1	Perceived Knowledge on EBP	0.885
2	Perceived attitudes towards EBP	0.900
3	Perceived practices toward EBP	0.871
4	Perceived barriers to implementing EBP	0.869

The reliability analysis of all sections was suggestive of good internal consistency, giving the acceptable range of 0.700 to 0.800.

The results indicated good reliability, implying that all items appeared to be worthy of retention. All items also correlated with the total scale to a good degree. As such, all the research questions could be answered by the items in the questionnaire.

Table 3.2: Content validity of the study instrument

RESEARCH OBJECTIVES	THEORETICAL CONSTRUCTS	ITEMS IN QUESTIONNAIRE	CONTRIBUTING QUESTIONNAIRE
1. To explore general nurses' perceived level of knowledge of evidenced-based practice	Knowledge (perceived Knowledge)	1 (first questionnaire) 2-15 (second questionnaire)	(Upton and Upton, 2006) (Majid et al., 2011)
2. To explore general nurses' perceived attitudes towards evidenced-based practice	Persuasion (perceived attitude)	16-20 (first questionnaire)	(Upton and Upton, 2006)
3. To explore general nurses' perceived practices towards evidenced-based practice	Decision and Implementation (perceived practices)	21-29 (first questionnaire)	(Upton and Upton, 2006)
4. To explore the	Confirmation	30-38	(Upton and Upton,

3.10 Procedure for data collection

The data was collected within a period of four weeks with the help of two research assistants. The four weeks duration allowed those nurses who had not been on duty at the beginning of data collection to participate when they resumed to their duty posts.

The respondents were approached during less busy periods and given the questionnaires, which were accompanied by an information sheet that explained the purpose of the study to the respondents and how the questions should be responded to. Most of the nurses filled in the questionnaires immediately and returned them on the spot. The researcher made multiple visits during the different shifts to administer the instrument to nurses on different shifts. Boxes were provided in the offices of the head nurses for the respondents who were busy at the time of the instrument administration. Completed questionnaires were dropped into the boxes and were collected thereafter by the researcher.

3.11 Ethical considerations

In accordance with the rules of the University of KwaZulu-Natal, the researcher sent the proposal to the UKZN Ethical Committee and applied for ethical approval. The committee gave full approval for the study with reference number HSS/1228/013M (see Appendix 1).

The researcher also sought permission from Niger State Health Services Management Board (by means of a letter) and the head of the hospital to conduct the research. The board as well as the hospital granted full approval for the study (see Appendices 3 and 4).

The participants were requested to sign consent forms as proof of their willingness to participate in the study.

Participants require accurate information about a study to enable them to decide whether or not to participate (Grove et. al., 2013). The researcher ensured that the participants were adequately informed by explaining the purpose and significance of the study both verbally and on the information sheet. These were necessary because the principle of self-determination has it that prospective participants have the right to voluntarily decide on whether or not to participate in a study without any punishment or ill treatment (Polit and Beck, 2004). The researcher also provided a forum for participants to discuss any concerns or uncertainties they might have concerning the study, if any. This was to control any potential harm such as embarrassment that may have arisen from completing the instrument.

As it is unethical to allow unauthorized persons to have access to the raw data of a study (Grove et. al., 2013), the researcher kept the information obtained from the respondents confidential. To further protect their rights to privacy, the participants were not required to disclose any personal, identifiable information. It was clearly stated on the information sheet that participation in the study was voluntary and that they could withdraw from participation at any point of the study. They were also advised that they could seek clarification at any stage if they wished. The contact information of the researcher, the researcher's supervisor and UKZN ethical committee chair were provided for any questions or concerns that the participants may have regarding the study. The study's potential benefits, such as adding to the body of nursing knowledge, were also explained to the participants. See Appendix 5 for the information sheet.

3.12 Data Analysis

Data was collected and coded prior to analysis. Both descriptive and inferential statistics were used for the data analysis. Statistical Packages for the Social Sciences (SPSS) Version 20 was used for the analysis. For descriptive statistics, methods such as frequencies, percentages, mean, and standard deviation were used to describe the respondents' perceived knowledge, attitudes and practices of EBP. Tables were also used to display the results.

Paired sample correlation and t-test of difference were used for the inferential statistics. These tests were used to establish the influences of variables on other variables and to make comparison among groups respectively (Grove et al., 2013). In this study, the researcher used the paired sample correlation test to establish the influences of the study variables on one another. Paired sample correlations were conducted between age of respondents and perceived knowledge, attitude, practice; level of education and perceived knowledge, attitude and practice; and years of practice and perceived knowledge, attitude and practice.

The researcher used an independent t-test of difference analysis technique to make a comparison between the senior and junior nurses. The t-test is a powerful tool for data analysis to determine differences between groups (Grove et al., 2013). The use of this tool facilitated the hypotheses testing of the variables in the study.

3.13 Data Management

The instruments used for the data collection were safely guarded by the researcher and kept under lock and key. Data was accessible to researcher only. After the completion of the project, the data will be kept for 5 years at the School of Nursing and Public Health, UKZN, after which it will be destroyed in accordance with the requirements of the University of KwaZulu-Natal.

3.14 Summary

This chapter presented a discussion on the research paradigm which guided the study. It also presented the methodology, research design, the setting for the study, population for the study and the sampling procedure. The instrument for data collection, validity and reliability, and the procedure for data collection were also described. Issues concerning ethics in a research, such as consent, voluntary participation confidentiality and data security were also addressed in this chapter. Lastly, the method for data analysis, data management and data dissemination were described.

CHAPTER FOUR

DATA PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents the analysis and interpretation of the results of the study. The objectives of this study, as presented in chapter one, were to:

- explore and describe registered nurses' perceived knowledge of evidence-based practice;
- explore and describe registered nurses' perceived attitudes towards evidence-based practice;
- explore and describe registered nurses' perceived engagement in evidence-based practices; and
- explore and describe registered nurses' perceived barriers to evidence-based practice.

The results of the study are presented under the following sections: 1, demographic profile; 2, perceived knowledge of evidence-based practice; 3, perceived attitudes towards evidence-based practice; 4, perceived engagement in evidence-based practice; and 5, perceived barriers to evidence-based practices. The results are summarised in tables with responses on strongly disagree and disagree grouped together as disagree and responses on agree and strongly agree grouped together as agree. This was because the responses on strongly disagree and strongly agree were scanty, less than 7 percent of the sample.

Spearman's correlation tests were performed to ascertain the relationships between perceived knowledge, attitudes and practices of the respondents about evidence-based practice (EBP) as well as the relationship between the nurses' level of education with perceived knowledge, attitudes and practice of EBP. A t-test was also performed to determine the mean differences in the perceived knowledge between junior and senior registered nurses in the study.

4.2 Sample realisation

The sample size for the study was 150 registered nurses. A total of 150 questionnaires were therefore distributed to the respondents of which 133 (88.7%) were returned.

The questionnaire had 38 items which were aimed at eliciting information from the respondents about their perceptions of evidence-based practice. The raw (quantitative) data collected was subjected to statistical analysis using SPSS version 20. Descriptive statistics were used to describe the characteristics of the respondents and their responses, while T-tests and correlation analysis (inferential statistics) were used to establish the relationships between the variables and groups.

4.3 Section 1: Demographic characteristics of the respondents

The variables under the demographic profile of the respondents were age, gender, professional (nursing) designation, highest nursing qualification and number of years practicing as a nurse. The respondents were asked to indicate these variables so that the researcher could describe the characteristics of the respondents and make correlations to establish the influence of these variables on the respondents' perceived knowledge, attitudes and practices of evidenced-based practice.

4.3.1: Age of the respondents

The respondents were asked to categorise their age to enable the researcher to determine the age distribution of the respondents and to determine the influence of age on the level of perceived knowledge, attitudes and practice of evidenced-based practice.

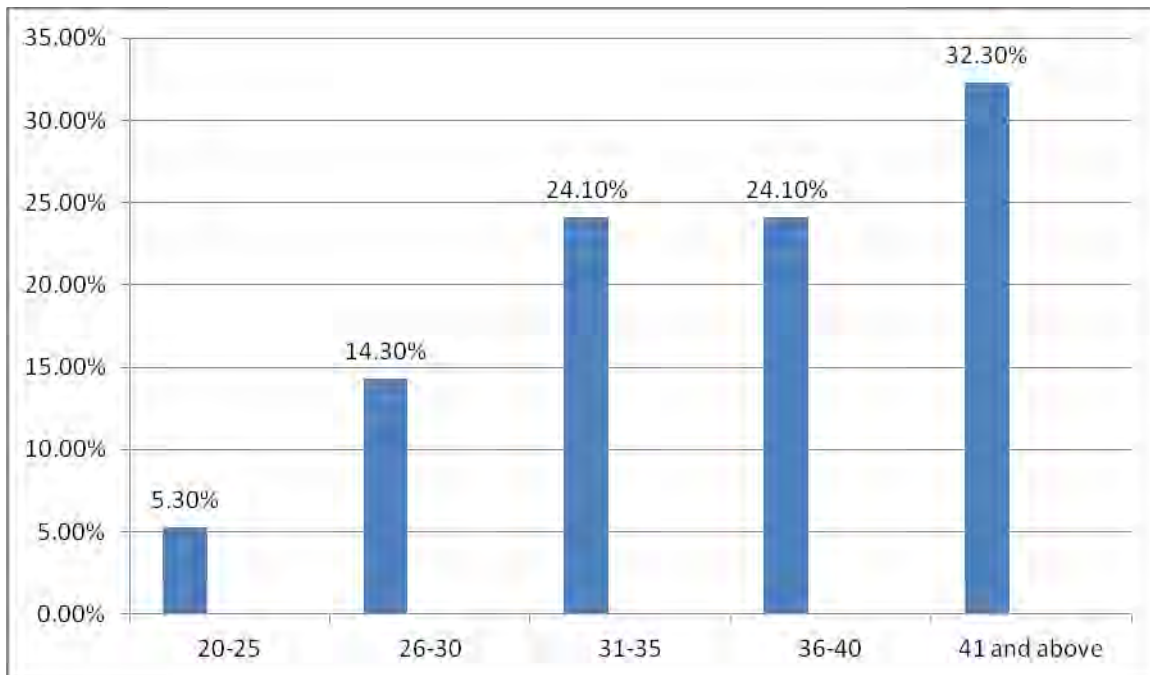


Figure 4.1: Distribution of age categories of respondents in years (n=133)

There were five age categories in the demographic characteristic section of the questionnaire, namely: 20-25, 26-30, 31-35, 36-40 and 41 and above. The mean age of the respondents and standard deviation (mean \pm SD) were 39.40 ± 2.20 . The range of the respondents' age was 31 years. Figure 4.1 above shows that 5.3% (n=7) of the respondents fell within the age category of 20-25 years; 14.3% (n=19) were within the age of 26-30 years; 24.1% (n=32) fell under the age of 31-35 years; 24.1% (n=32) were within the age of 36-40 years while 32.3% (n=43) were 41 years and above. This therefore indicates that the highest percentage (32.3%) of respondents were in the category of 41 years and above, while only few (5.3%) were within the ages of 20-25 years. However, an equal number of the respondents (n=32; 24.1%) fell into the age categories of 31-35 and 36-40 years.

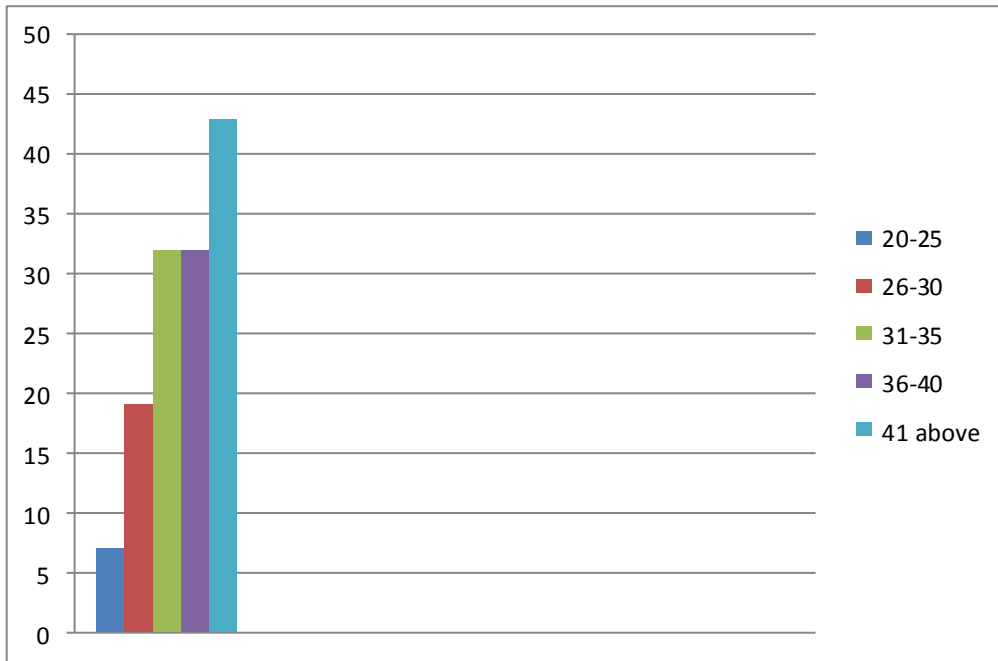


Figure 4.2: Histogram showing respondents' age

4.3.2: Gender of the respondents

The respondents were asked to indicate their gender category to enable the researcher to determine the gender distribution of the respondents in the study.

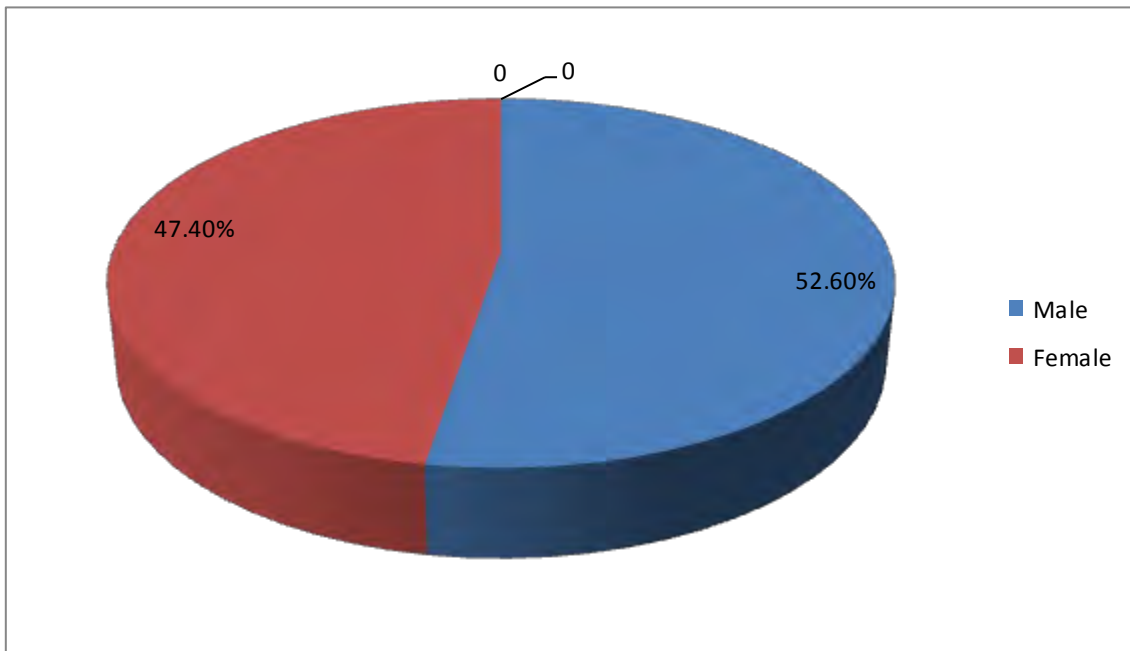


Figure 4.3: Gender of respondents (n= 133)

Figure 4.3 above shows that the majority of the respondents (52.6%; n=70) were male, while 47.4% (n=63) were females.

4.3.3: Professional designation and highest qualification of respondents

Respondents were asked to indicate their professional designation so as to enable the researcher to describe their professional status. It also allowed the researcher to categorise the respondents into senior or junior registered nurses to allow for comparison of the perceived knowledge of the senior and junior registered nurses.

The indication of the respondents' highest qualification was aimed to providing the researcher with information on the levels of nursing education attained by the respondents, which enabled correlations to be made between educational level and other variables in the study.

Table 4.1: Professional designation of respondents

Designation	Frequency	Percent (%)
SNI	48	36.1
SNII	37	27.8
SNO	12	9.0
PNO	15	11.3
ACNO	13	9.8
CNO	8	6.0
Total	133	100

The career structures of nurses who are licensed by the nursing and midwifery council of Nigeria range from grade 7 to grade 17. A registered nurse commences his/her career as staff nurse 1 (SNI). The registered nurse then seeks promotion to staff nurse II (SNII), senior nursing officer (SNO), principal nursing officer (PNO), assistant chief nursing officer (ACNO) and finally chief nursing officer. Nurses on ranks from SNI to SNII are considered junior nurses while those on ranks from SNO to CNO are considered to as senior nurses.

Table 4.1 above shows that of the 133 registered nurses, 48 (36.1%) fell into the SNI category and 37 (27.8%) fell into the SNII category. The SNO cadre had 12 (9.0%) responses, the PNO 15 (11.3%), the ACNO 13 (9.8%) and the CNO had 8 (6%) responses. The biggest group (n=38; 28.6%) fell into the SNI category, while the smallest group fell into the CNO (n=8; 9%).category

Table 4.2: Highest qualification of respondents

Highest Nursing Qualification Attained		
	Frequency	Percent (%)
Diploma in Nursing	81	60.9
Post Basic/Advanced Diploma in Nursing	46	34.6
Bachelor Degree in Nursing	4	3.0
Master Degree in Nursing	0	0
Other	2	1.5
Total	133	100

The questionnaire featured four levels of educational qualification and respondents were requested to select the appropriate category. The four levels were: Diploma in Nursing, Post Basic/Advanced Diploma in Nursing, Bachelor Degree in Nursing and Master Degree in Nursing. However, a fifth level „others“ was added for the respondents to indicate any other additional qualification that do not fall in the four levels mentioned.

Table 4.2 above shows that the majority of respondents (n=81; 60.9%) had a diploma in nursing without any additional qualification. Although 46 (34.6%) indicated having post basic qualifications, only 4 (3.0%) had a bachelor degree in nursing. None of the respondents had a master degree in nursing and only two indicated any other qualification.

Thus, most of the respondents were practicing with a diploma qualification and only a few with a university degree.

4.3.4: Years of nursing practice

The respondents were also requested to indicate the numbers of years spent as practicing nurses. This was to enable the researcher to determine through correlation analysis the influence of years of practice on perceived knowledge, attitudes and practice of EBP.

Table 4.3: Years of nursing practice

Years of Practice	Frequency	Percent (%)
2-5yrs	8	6.0
6-10yrs	33	24.8
11-15yrs	21	15.8
16-20yrs	27	20.3
21 yrs and above	44	33.1
Total	133	100

Table 4.2 above shows that the biggest group of the registered nurses (n=44; 33.1%) had served for more than 20 years. This was followed by those who practiced for 6-10 years (n=33; 24.8%), 16-20 years (n=27; 20.3%) and 11-15 years (n=21; 15.8%). Only 8 (6%) had practiced for 2-5 years.

4.4 Section 2: The respondents' perceived knowledge of evidence-based practice

Section 2 of the questionnaire consisted of 15 items/question that were developed to elicit information on the perceived level of knowledge of the respondents about evidenced-based practice. There were five options from which respondents were required to choose only one. For the first question, the options were strongly disagree, disagree, undecided, agree and strongly agree. However, as stated earlier, responses on strongly disagree and disagree were grouped together as disagree

and responses on agree and strongly agree grouped together as agree. This was because the responses on strongly disagree and strongly agree were scanty. Also, responses on undecided were merged with disagree due to poor response rate on the items. Items 2-15 also had 5 options namely: poor, fair, good, very good and excellent. Similarly, poor and fair were merged together as poor, while good, very good and excellent were merged together as good. This also was due to low responses on poor and excellent. The responses on the „good and agree“ option were analysed together while the responses on disagree and poor were analysed together. This allows for easy analysis and interpretation of the results (Parahoo, 2006). Table 4.4 below shows the merged responses.

Table 4.4: Respondents’ perceived knowledge of evidence based practice

S/N	Variables	Agree	Disagree	Total
1	I believe I am adopting EBP when I implement nursing care and make clinical decision based on patient’s subjective and objective data, information from textbooks, previous experiences of health care professionals e.g. nurses, doctors and physiotherapists	120 (90.2%)	13 (9.8%)	133 (100%)
		Good	Poor	Total
2	Research skills	111 (83.5%)	22 (16.5%)	133 (100%)
3	Information technology skills	113 (85%)	20 (15%)	133 (100%)
4	Monitoring and reviewing of practice skills	119 (89.5%)	14 (10.5%)	133 (100%)
5	Converting your information needs into a research question	103 (77.4%)	30 (22.6%)	133 (100%)
6	Awareness of major information types and sources	113 (85%)	20 (15%)	133 (100%)
7	Ability to identify gaps in your professional practice	117 (88%)	16 (12%)	133 (100%)
8	Knowledge of how to retrieve evidence	115 (86.5%)	18 (13.5%)	133 (100%)
9	Ability to analyse critical evidence against a set standard	105 (79%)	28(21%)	133 (100%)
10	Ability to determine how valid (close to the truth) the material is	110 (82.7%)	23 (17.3%)	133 (100%)
11	Ability to determine how useful (clinically applicable) the material is	125 (94%)	8 (6%)	133 (100%)
12	Ability to apply information to individual cases	122 (91.7%)	11 (8.3%)	133 (100%)
13	Sharing of ideas and information with colleagues	127 (95.5%)	6 (4.5%)	133 (100%)

14	Dissemination of new ideas about care to colleagues	120 (90.2%)	13 (9.8%)	133 (100%)
15	Ability to review your own practice	117 (88%)	16 (12%)	133 (100%)

Table 4.4 indicates that the majority of nurses (n=120; 90.2%) either strongly agreed or agreed that they believe they are adopting EBP when they implement nursing care and make clinical decisions based on patients' subjective and objective data, information from textbooks, previous experiences of health care professionals e.g. nurses, doctors and physiotherapists compared to 13 (9.8%) of the respondents who disagreed. Of the respondents, 111 (83.5%) perceived having good research skills compared to 22 (16.5%) who perceived not having good skills. On information technology skills, 113 (85%) believed they had good knowledge compared to 20 (15%) who had poor knowledge. On monitoring and reviewing of practice skills, 119 (89.5%) had felt they had good knowledge, while 14 (10.5%) had poor knowledge. In responding to the question on converting your information needs into a research question, 103 (77.4%) of the respondents perceived that they had good knowledge, while 30 (22.6%) perceived they had poor knowledge. It was therefore not surprising that on the issue of awareness of major information types and sources, 113 of the respondents (85%) perceived having good knowledge while 20 (15%) had poor knowledge.

On the item about the ability to identify gaps in their professional practice, 117 (88%) believed they have good knowledge compared to 16 (12%) with poor knowledge. For the question on knowledge of how to retrieve evidence, 115 (86.5%) of the respondents indicated they had good knowledge while 18 (13.5%) indicated they did not. The majority of the respondents (n=105; 79%) believed they had good ability to analyse critical evidence against a set standard while 28 (21%) had a poor perception of their ability. Similarly, on the ability to determine how valid (close to the truth) the material is, 110 (82.7%) of the respondents indicated they were good while 23 (17.3%) felt they were poor. Of the 133 respondents, 125 (94%) indicated they had good ability to determine how useful (clinically applicable) a material is compared to 8 (6%) who had poor ability. Out of the respondents, 122 (91.7%) perceived they had good knowledge on the ability to apply information to individual

cases compared to 11 (8.3%) with poor knowledge. For the statement on sharing of ideas and information with colleagues, 127 (95.5%) perceived they were good with only a few (n=6; 4.5%) indicating they were poor. Regarding the ability of dissemination of new ideas about care to colleagues, 120 (90.2%) believe they had good skill while 13 (9.8%) expressed having poor skills. Finally, for the last statement in this section, 117 (88%) respondents perceived they had good ability to review their own practice while 16 (12%) felt their ability was poor.

4.5 Section 3: Respondents' perceived attitudes towards evidenced based practice

This section of the questionnaire consisted of five statements with five options in a Likert's scale. However, as stated earlier, responses on strongly disagree and disagree were grouped together as disagree and responses on agree and strongly agree grouped together as agree due to low responses on the strongly agree and strongly disagree options. Table 4.5 below gives the summary of the section.

Table 4.5: Perceived attitudes towards evidence based practice

S/N	Variable	Agree	Undecided	Disagree	Total
16	My workload is too high to keep up to date with all new evidence	79 (59.4%)	11 (8.3%)	43 (32.3%)	133 (100%)
17	I don't like people questioning my clinical practice which are based on established methods	72 (54.1%)	11 (8.3%)	50 (37.6%)	133 (100%)
18	I believe evidenced based practice has only limited utility	63 (47.4%)	24 (18%)	46 (34.6%)	133 (100%)
19	I prefer using more traditional methods instead of changing to new approaches	43 (32.3%)	18 (13.5%)	72 (54.1%)	133 (100%)
20	Most research articles are not relevant to my daily practice	66 (49.6%)	10 (7.5%)	57 (42.9%)	133 (100%)

Table 4.5 shows that the majority of the respondents (n=79; 59.4%) agreed that their workload is too high to keep up to date with all new evidence compared to 53, (32.3) who disagreed. Only 11% of the respondents indicated that they were undecided on workload serving as a barrier to keep up to date with new evidence. The table also shows that 72 (54.1%) of the respondents do not like people questioning their clinical practice which are based on established methods. However, 50 (37.6%) of them do not mind been questioned by people about their clinical practice and 11 (8.3%) could not decide on the item. For the item on believe that evidenced based practice has only limited utility, the majority of the respondents, 63 (47.4%) agreed, 46 (34.6%) disagreed while 24 (18%) of the respondents remained undecided. The table also shows that 43 (32.3%) of the respondents agreed and 72 (54.1%) disagreed on preferring to use more traditional methods instead of changing to new approaches. Only few 18 (13.5%) of the respondent could not decide. On the item that most research articles are not relevant to daily practice, 46 (49.6%) of the respondents agreed, 57 (42.9%) disagreed and 10 (7.5%) were undecided. The mean score of the attitude of respondents is 3.11, which indicate a good attitude.

4.6 Section 4: Respondents' perceived engagement in evidence-based practices

This section of the questionnaire consisted of nine statements. There were five options in a Likert scale for each of the statements from which the respondents were expected to choose. The responses on strongly disagree, disagree and undecided were grouped together as disagree and responses on agree and strongly agree grouped together as agree due to low responses on the strongly agree and strongly disagree options. Table 4.4 gives the summary of the section.

Table 4.6: Respondents' perceived engagement in evidence-based practices

S/N	Variable	Agree	Disagree	Total
21	Identify clinical issues/problems	116 (87.2%)	17 (12.8%)	133 (100%)
22	Translate a clinical issue/problem into a well-formulated clinical question	114 (85.7%)	19 (14.3%)	133 (100%)

23	Distinguish between different types of questions (e.g. intervention, prognosis, harm and cost effectiveness)	109 (82%)	24 (18%)	133 (100%)
24	Conduct online searches (using data bases and search engines)	98 (73.7%)	35 (26.3%)	133 (100%)
25	Relate research findings to my clinical practice and point out similarities and differences	94 (70.7%)	39 (29.3%)	133 (100%)
26	Use checklist to assess research articles	87 (65.4%)	46 (34.6%)	133 (100%)
27	Read research report and have a general notion about its strength and weaknesses	109 (82%)	24 (18%)	133 (100%)
28	Apply an intervention based on the most applicable evidence	115 (86.5%)	18 (13.5%)	133 (100%)
29	Evaluate the application of intervention and identify areas of improvement	118 (88.7%)	15 (11.3%)	133 (100%)

Table 4.6 above shows that the majority of respondents indicated that they engage in evidence-based practices with 116 (87%) indicating that they identify clinical issues/problems, 114 (85.7%) agreeing that they translate a clinical issue/problem into a well-formulated clinical question and 109 (82%) agreeing that they distinguish between different types of questions (e.g. intervention, prognosis, harm and cost effectiveness). Only a small percentage disagreed with the statements, 24 (18%), 17 (12.8%) and 19 (14.3%) respectively.

It is also clear from Table 4.6 that the majority of the respondents (n=98; 73.7%) agreed that they conduct online searches (using data bases and search engines) while the remaining 35 (26.3%) disagreed and 94 (70.7%) agreed that they relate research findings to their clinical practice and point out similarities and differences, while 39 (29.3%) disagreed with the statement.

With respect to item 26, 87 (65.4%) of the respondents agreed that they use a checklist as opposed to 46 (34.6%) who disagreed. Most of the respondents (n=109;

82%) agreed that they can read a research report and have a general notion about its strength and weaknesses, whereas 24 (18%) of the respondents indicated they could not. Similarly, most of the respondents, 115 (86.5%) agreed that they can apply an intervention based on the most applicable evidence, compared to only 18 (13.5%) who believe they cannot. The majority of the respondents (n=118; 88.7%) agreed with the last item on this section, thus indicating they can evaluate the application of intervention and identify areas of improvement, while 15 (11.3%) disagreed with this statement.

The findings indicate that the respondents generally have positive perceptions of their competence in evidence-based practice, with a mean of 3.92.

4.7 Section 5: Perceived barriers to evidence based practice

The section of the questionnaire regarding perceived barriers had eight statements. Each statement had five options in a Likert scale from which the respondents were requested to choose. Similar to the previous section, its responses on strongly disagree, disagree and undecided were grouped together as disagree, and responses on agree and strongly agree were grouped together as agree due to low responses on the strongly agree and strongly disagree options.

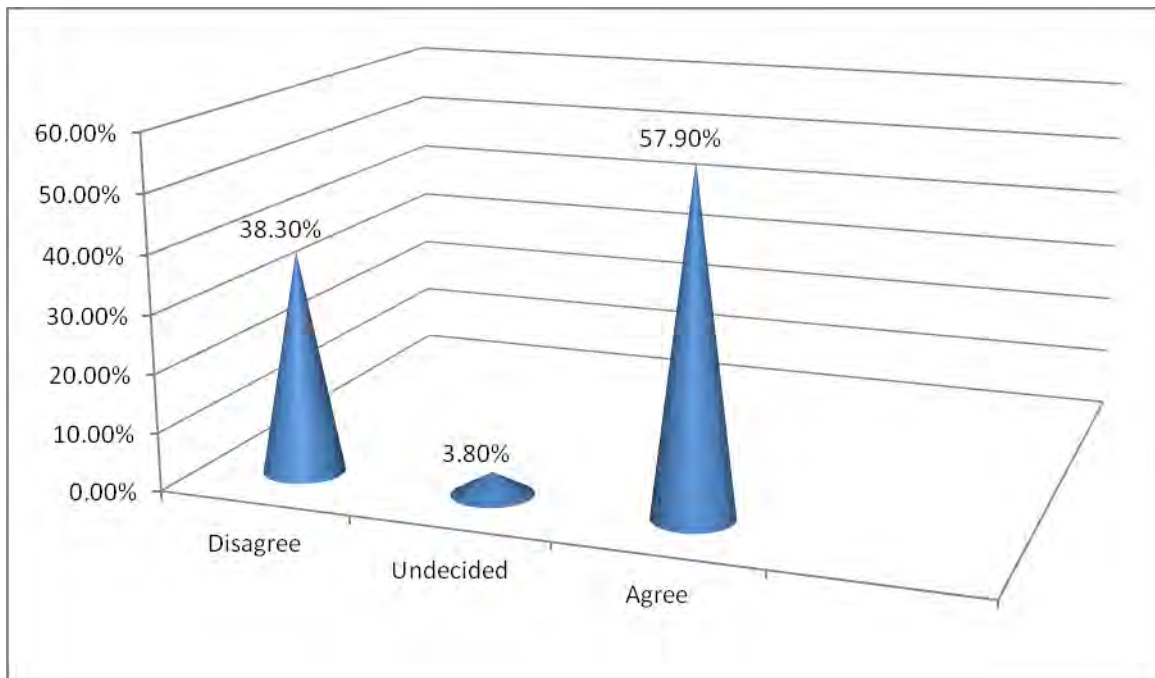


Figure 4. 4: Inadequate understanding of research terms used in research articles (n= 133)

As shown in Figure 4.4 above, a little more than half of the 133 respondents (n=77; 57.9%) agreed that inadequate understanding of research terms used in research articles was a barrier to evidence-based practice, 38.3% (n=51) of the respondents disagreed with the statement and 5 (3.8%) were undecided.

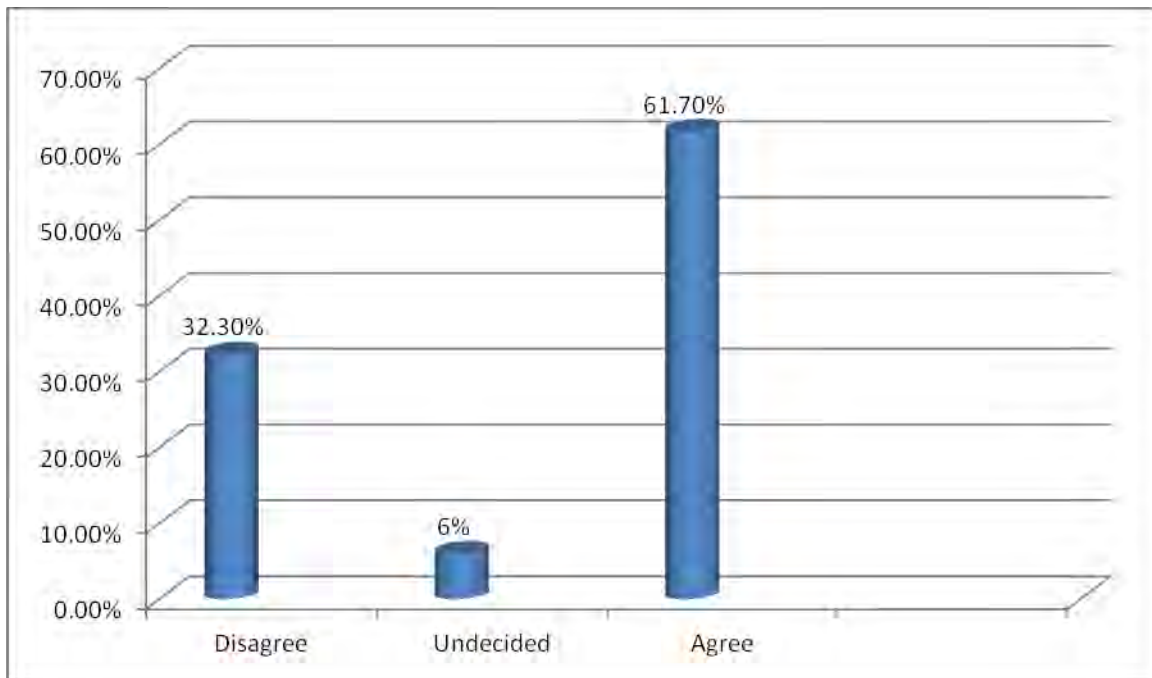


Figure 4.5: Inability to understand statistical terms used in research articles (n= 133)

As shown in Figure 4.5 above, the majority of respondents (n=82; 61.7% agreed that inability to understand statistical terms used in research articles is a barrier to evidenced based practice, 32.3% (n=43) disagreed with the statement and 6% (n=8) remained undecided.

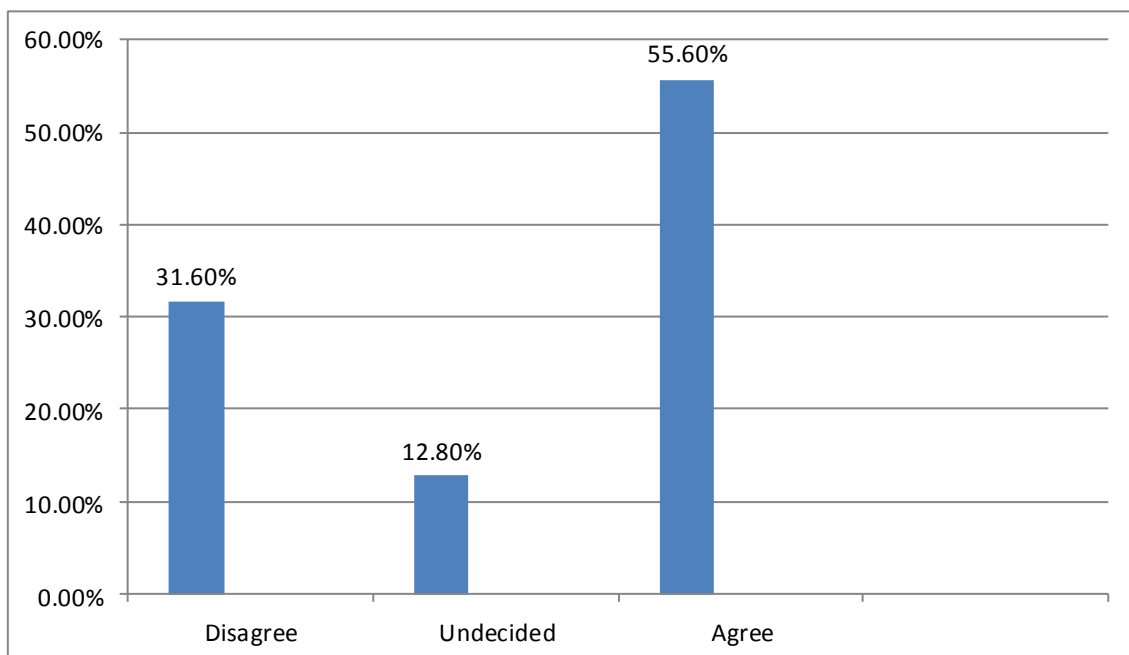


Figure 4.6: Difficulty in judging the quality of research papers and reports (n= 133)

As shown in Figure 4.6 above, 55.6% (n=74) of the respondents agreed that difficulty in judging the quality of research papers and reports is a barrier to the implementation of evidence based practice compared to 31.6 % (n=42) who did not agree. Only 12.8% (17) were undecided.

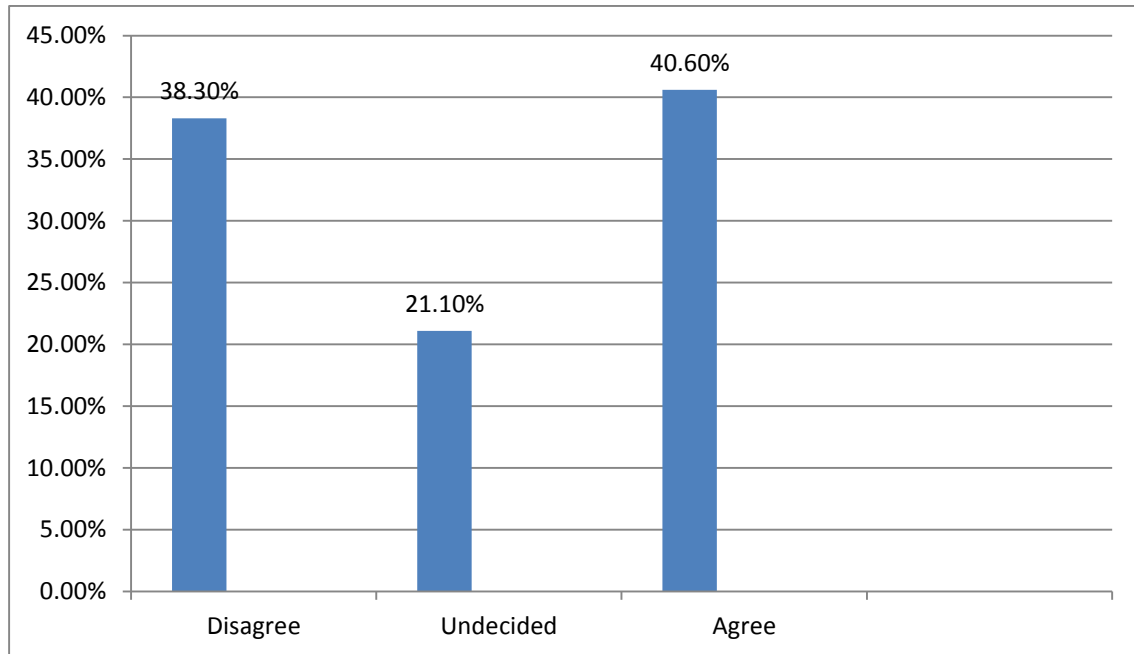


Figure 4.7: Inability to properly interpret the results of research studies (n=133)

As can be seen in Figure 4.7 above, only 40.6% (n=54) of the respondents perceived inability to properly interpret the results of research studies as barriers to evidenced based practice with 38.3% (n=51) having a contrary view. However, 21.1% (n=28) of the respondents remained undecided.

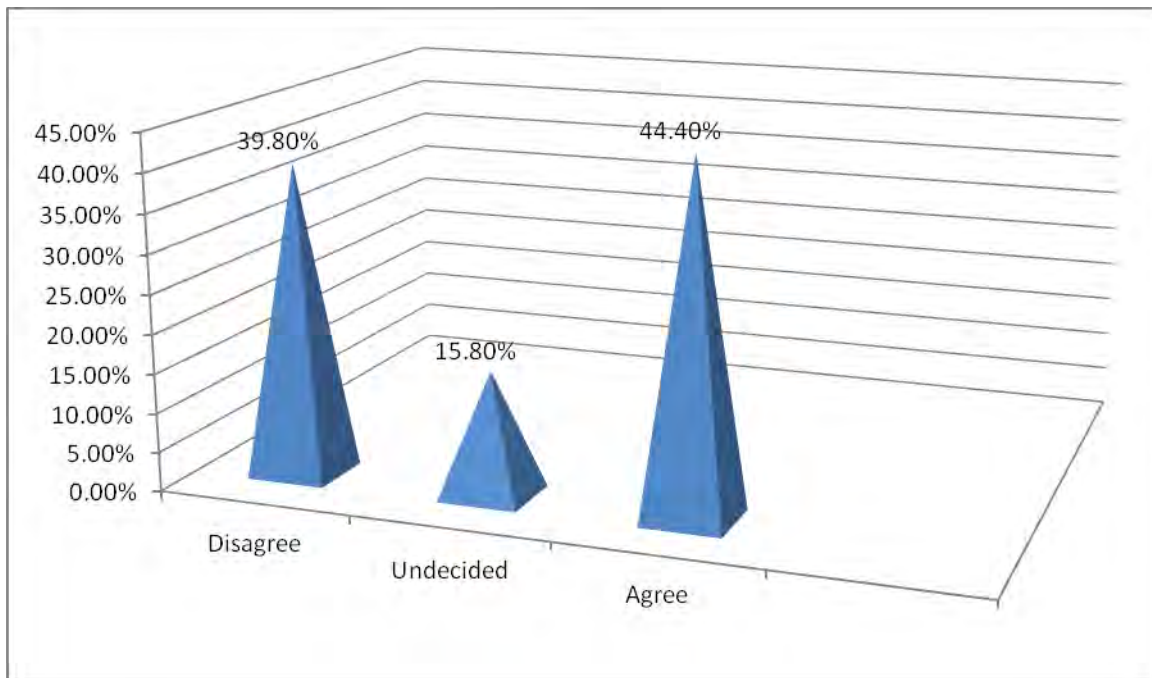


Figure 4.8: Difficulty in determining the applicability of research findings (n= 133)

Table 4.8 above shows that 44.4% (n=59) of the respondents agreed with the statement that difficulty in determining the applicability of research findings is a barrier to evidence-based practice, 39.8% (n=53) disagreed and 15.8% of the respondents were undecided. .

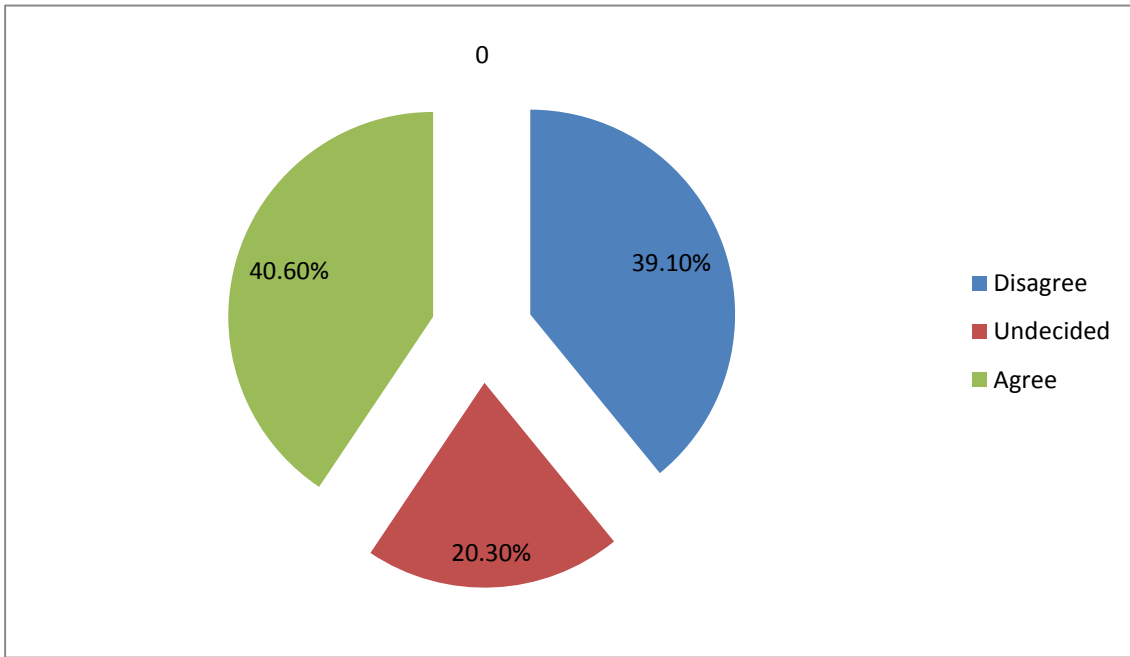


Figure 4.9: Inability to implement recommendations of research studies into clinical practice (n= 133)

As illustrated in Figure 4.9 above, 40.6% (n=54) of the respondents perceived inability to implement recommendations of research studies into clinical practice as barriers, while 39.1% (n=52) were of the view that it is not a barrier. A good number of the respondents (20.3%, n=27) were, however, undecided.

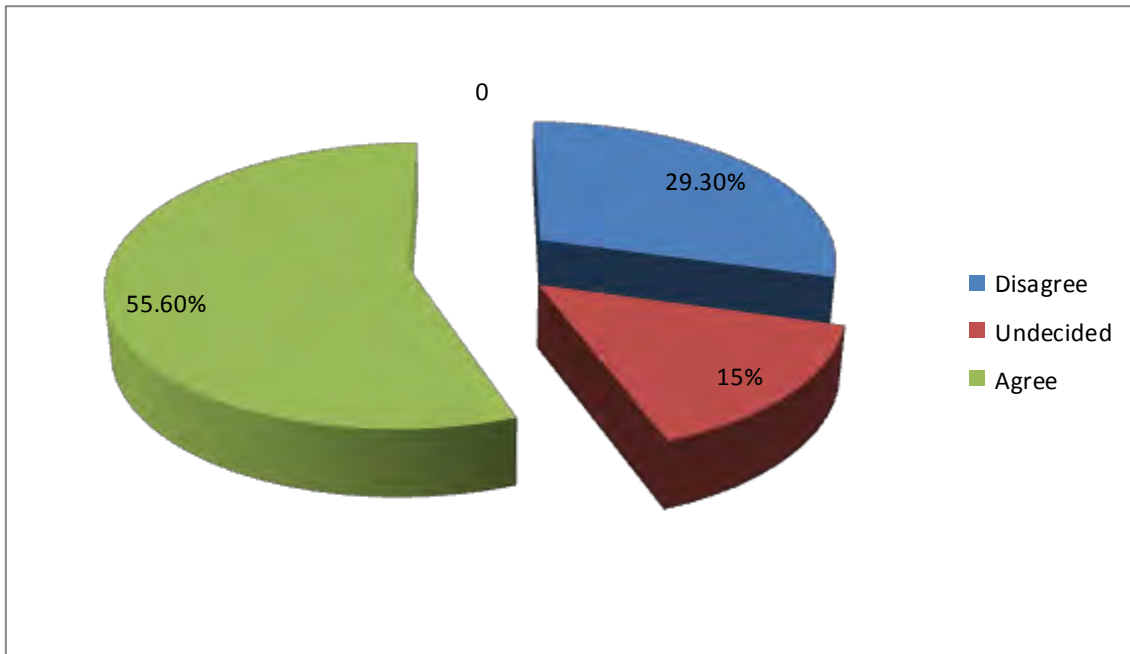


Figure 4.10: Difficulty in finding time at the work place to search for and read research articles and reports (n= 133)

As can be seen in Figure 4.10 above, 55.6% (n=74) of the 133 respondents agreed with the statement that difficulty in finding time at the work place to search for and read research articles and reports interferes with practicing evidenced based practice, 29.3% (n=39) disagreed and 15% (n=20) of the respondents were undecided.

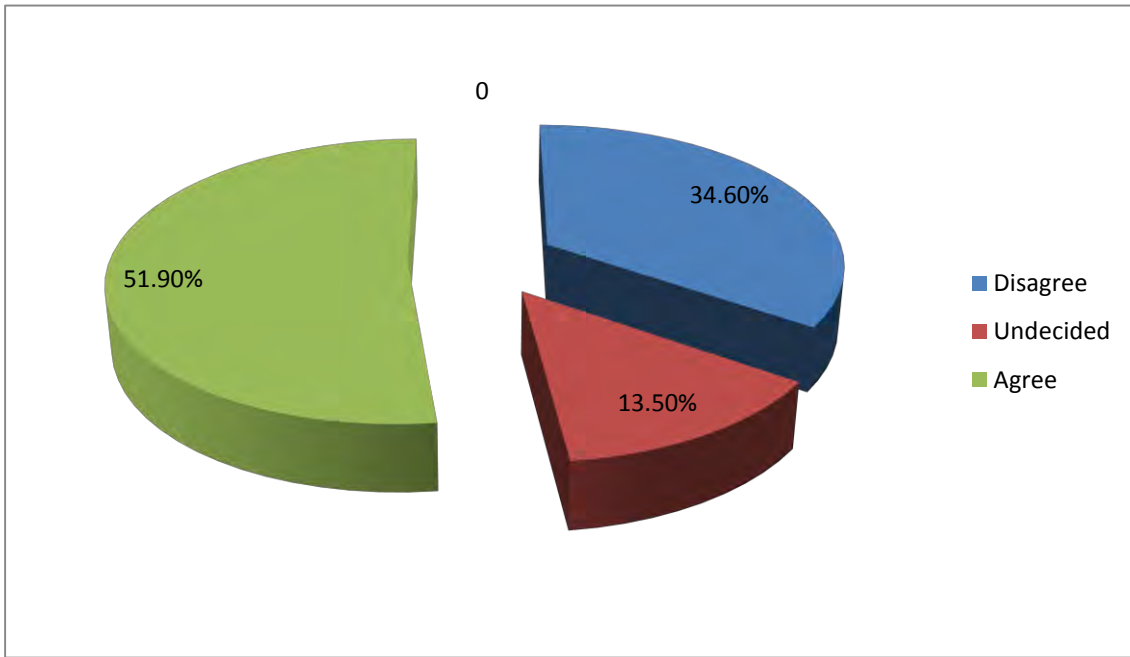


Figure 4.11: Insufficient time at the work place to implement changes in their current practice (n= 133)

Regarding the statement about having insufficient time at the work place to implement changes in their current practice, the results in Figure 4.11 above indicate that 51.9% (n=69) of the respondents agreed compared to 34.6% (n=46) who disagreed and 13.5% (n=18) who remained undecided.

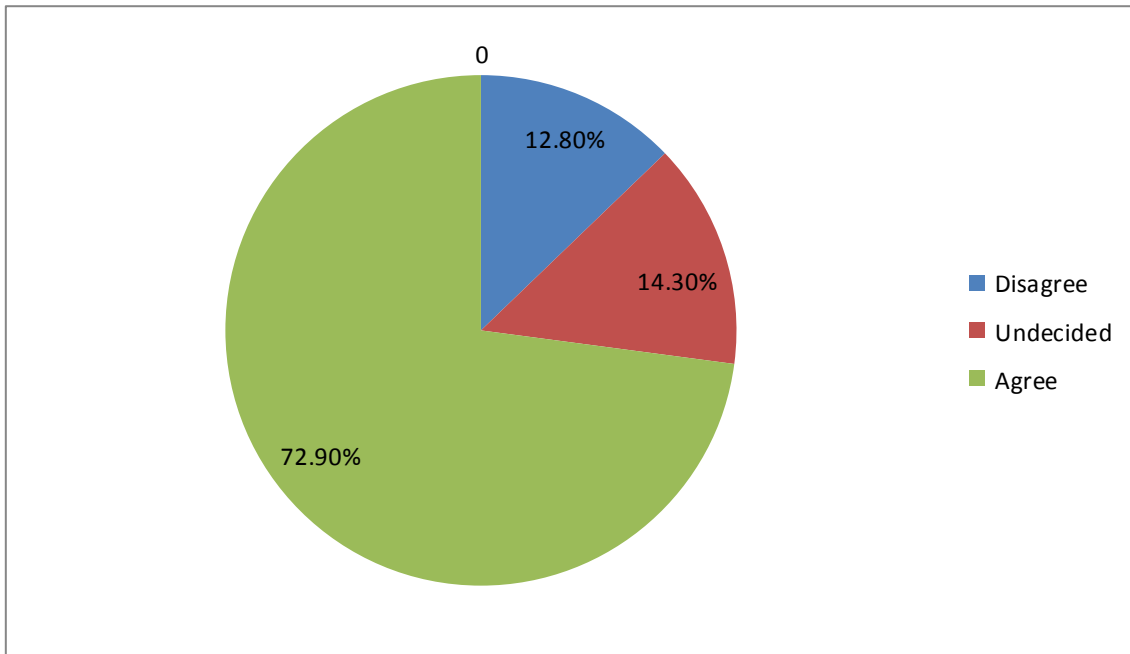


Figure 4.12: Insufficient resources to implement evidence-based practice (n= 133)

As can be seen in Figure 4.12 above, the majority of the respondents (n=97; 72.9%) agreed that insufficient resources (e.g. equipment, materials) was a barrier to implementing EBP compared to 12.8% (n=17) who disagreed and 14.3% (n=19) who were undecided.

4.6: Inter-relationship between demographic variables and knowledge, attitudes and practice of evidence based practice

Inferential statistical analysis (Spearman's correlation and t-Test) were conducted to establish the relationship between demographic variable and knowledge, attitudes and practice of evidence based practice.

Table 4.7: Results of correlation between perceived knowledge, attitude, practice and age of respondents

Variable	r
Knowledge and age	0.001
Attitude and age	0.137*
Practice and age	-0.047

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

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

Spearman’s correlation was performed to establish the relationships between the age of respondents and perceived level of knowledge of EBP, age of respondents and perceived attitude of EBP as well as age and perceived practice of EBP. Table 4.7, above shows that there is a very weak positive correlation ($r=0.001$) between age of the respondents and their knowledge of evidence-based practice. It also shows that there is positive correlation ($r=0.137$) between age and the attitude of the respondents. For the attitude the correlation is significant at 0.05 level. Surprisingly, the correlation between the age of respondents and their practice of EBP is negative, though very weak ($r= -0.047$).

Table 4.8: Results of correlation of perceived knowledge, attitude and practice with level of education

Variables	Mean±SD	r
Level of education Knowledge	1.82±1.06 3.43±0.86	-0.199**
Level of education Attitude	1.82±1.06 3.11±1.17	-0.059
Level of education Practice	1.82±1.06 3.92±0.78	0.114

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

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

In order to establish the relationship between the level of education and knowledge of EBP, level of education and attitude as well as level of education and the practice of EBP, Spearman's correlations were conducted. The results in Table 4.8 above show that there is negative correlation between level of knowledge and level of education with a correlation of -0.199. It also shows that there is a negative correlation between nurses' attitudes and level of education, with a correlation of -0.059. However, the table indicates a mild, but positive, correlation (0.114) between level of education and the practice of evidence-based practice.

Table 4.9: Results of correlation of knowledge, attitude and practice

Variables	Mean±SD	r
Knowledge	3.43±0.86	0.137**
Attitude	3.11±1.23	
Knowledge	3.43±0.86	0.004
Practice	3.92±0.78	
Practice	3.92±0.78	0.056
Attitude	3.11±1.23	

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

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

A Spearman's correlation analysis was also conducted to establish the relationship between knowledge and attitude, knowledge and practice, as well as the relationship between practice and attitude of the respondents towards EBP. Table 4.9 above indicates that there is a mild positive correlation between knowledge and attitude of nurses with a correlation of 0.137. This relationship is however weak. The table also indicates a positive (very weak) correlation between knowledge and practice ($r=0.004$). Also, the relationship between practice and attitude is positive though weak ($r=0.056$).

Table 4.10: Independent t-test of knowledge of EBP between junior and senior nurses

Group	N	t-cal	critical
Junior	85	2.526	2.145
Senior	48		

df=14, p<0.05

The means of the two groups were calculated in Microsoft excel and were moved to SPSS for independent sample t-test analysis. Table 4.10 indicates that the calculated value (2.562) is statistically more than the critical value (2.145) at 0.5 level of the significance under the degree of freedom of 14. Therefore, the null hypothesis is rejected. This implies that there is a significant difference between the perceived level of knowledge of junior and senior registered nurses.

Table 4.11: Correlation of KAP and years of practice

Variables	r
Knowledge and years of practice	0.063
Attitudes and years of practice	-0.144
Practice of EBP and years of practice as a nurse	0.041

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

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

Spearman's correlation was also done to test whether there is a relationship between knowledge and years of practice, attitudes and years of practice and practice and years of practice of registered nurses. Table 4.11 above shows that there is (weak) positive correlation (r= 0.063) between knowledge and years of experience. The table also shows that there is weak negative correlation (r= -0.144) between attitude of registered nurses and their years of practice. The relationship between evidence based practice and years of practice as registered nurse is also positive (r= 0.041), though weak.

Table 4.12: Correlation of knowledge, attitudes and practice with gender

Variables	r
Knowledge and gender	0.040
Attitudes and gender	0.005
Practice of EBP and gender	0.048

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

Table 4.12 indicates that there is positive correlation between knowledge and gender, attitudes and gender as well as practices of EBP and gender. However the correlations were not significant.

Table 4.13: Correlation of knowledge, attitudes and practice with designation

Variables	r
Knowledge and designation	0.029
Attitudes and designation	0.121
Practice of EBP and designation	-0.015

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

In Table 4.13 above, the results show that there is positive correlation between knowledge and designations of the respondents as well as between the attitudes and the designations of the respondents. However, the table indicates that there is a negative correlation between the practices of EBP and the designation of the respondents. The correlations were however not significant.

4.7 Summary of the chapter

This chapter featured a detailed description of the analysis and interpretation the data collected for the study. The results are presented in tables and interpreted accordingly. The analysis was based on the 133 respondents that participated in the study. The findings showed that the majority of the respondents were 40 years and above. In relation to the gender of the respondents, males were the majority. Most of the respondents were junior staff and only had a diploma in nursing.

The result also showed that the respondents had positive perceived knowledge, attitude and practice of EBP. On the barriers to EBP, inability to understand statistical terms used in research articles rated the highest perceived barrier (61.7%, n=82) to evidenced-based practice among the respondents.

There were 6 hypotheses formulated and tested, which were:

1. There is no significant difference between the knowledge of senior and junior nurses on evidence-based practice;
2. There is no significant correlation between the knowledge of EBP and educational level of registered nurses;
3. There is no significant correlation between the age of registered nurses and their knowledge of evidence-based practice;
4. There is no significant relationship between knowledge, attitude and practice of evidence-based practice among registered nurses;
5. There is no correlation between knowledge, attitudes and practices of EBP with the gender of the respondents; and
6. There is no significant correlation between knowledge, attitudes and practices of EBP with the designation of the respondents.

Correlation analysis performed showed a very weak positive correlation between the ages of the respondents and their knowledge of evidence-based practice, a positive correlation between age and the attitude of the respondents and a negative correlation between the age of the respondents and their practice of EBP. The null hypothesis was rejected because the correlation was not significant.

There was negative correlation between level of knowledge and level of education, a negative correlation between nurses' attitudes and level of education, as well as a mild positive correlation between level of education and the practice based on evidence. The finding also showed that there were positive correlations between perceived knowledge of the respondents on their attitude, knowledge and practice as

well as attitude and practice of EBP. The correlations were not significant and the null hypothesis was rejected.

The t-test conducted to compare the mean knowledge of junior and senior nurses revealed a significant difference between their perceived levels of knowledge. However, there was (weak) positive correlation between knowledge and years of experience, a weak negative correlation between attitude of registered nurses and their years of practice and a positive, though weak, correlation between years of practice as a registered nurses and practice of EBP. Therefore, the null hypothesis was rejected.

Similarly, the correlation of knowledge, attitude and practice with gender of respondents as well as the correlation of knowledge, attitudes and practices of EBP with the designation of the respondents were positive, but not statistically significant. The null hypothesis was therefore rejected.

4.8 Conclusion

In conclusion, the result of this study has shown that nurses have positive perception of EBP. The results show that the participants perceived having high levels of knowledge, good attitudes and that they were practicing EBP. They are however limited by barriers to make EBP a full reality in their clinical practices.

CHAPTER FIVE

DISCUSSION, RECOMMENDATIONS, CONCLUSION AND LIMITATIONS

5.1 Introduction

The aim of this study was to explore the perceptions of registered nurses on evidence-based practice in General Hospital Minna in Nigeria. This chapter presents a discussion of the literature reviewed in relation to the findings of the study as described in chapter four. This chapter also presents the summary of the study and its implication for nursing, recommendations for future research and the conclusion.

In order to address the research questions in the study, the following objectives were formulated by the researcher:

- to describe registered nurses' perceived levels of knowledge of evidence-based practice;
- to describe registered nurses' perceived attitudes towards evidence-based practice;
- to describe registered nurses' perceived engagement in evidence-based practice; and
- to describe registered nurses' perceived barriers to evidence-based practice among

A quantitative exploratory descriptive study design was used for the study. The instrument for data collection was a structured questionnaire that had been adopted by the researcher. The instrument allowed the researcher to obtain information about the demographic characteristics of the respondents and their perceived knowledge, attitudes and practice of EBP.

5.2 Demographic characteristics of the respondents

The demographic variables in the study were age, gender, professional designation, highest nursing qualification and number of years as a practicing nurse.

5.2.1 Age of the respondents

The finding of this study revealed that most of the respondents were 41 and older. The mean age and SD of respondents was 39.40 ± 2.20 . The range of the respondents' age was 31 years. The mean age of respondent in this study is similar to the findings of Ofi et al. (2008), who concluded that individuals in this age group were likely to be experienced practitioners (Ofi et al., 2008). This signifies that most of the sample, which had been drawn from the different units of the study setting, were experienced registered nurses. Thus, it could be expected that these respondents would express positive perceptions towards EBP.

Spearman's correlation was performed to establish the relationships between the age of the respondents with perceived level of knowledge of EBP, age of the respondents and perceived attitude of EBP as well as age and perceived practice of EBP. The finding shows a very weak positive correlation ($r=0.001$) between the age of the respondents and their knowledge of evidence based practice, a significant positive correlation ($r=0.137$) between age and the attitude of the respondents and a negative, non-significant correlation ($r= -0.047$) between the age of the respondents and their practice of EBP.

Older, more experienced individuals are likely to report more positive attitudes and practices towards EBP (Ofi et al., 2008). Due to the shortage of experienced manpower in Nigeria, especially in the health sector, there has been a clarion call to increase the retirement age of health workers, including nurses, from 60 to 65 (Patric and Damilola, 2013). This development may play a role in retaining skilled professionals after the traditional age of retirement which is 60 years.

5.2.2 Gender of respondents

The finding of this study indicated that the majority of respondents were males (52.6%; $n=70$), with 47.4% ($n=63$) being females. This finding is contrary to previous studies which have shown that females tend to dominate the nursing profession (Ofi et al., 2008; Stone et al., 2004). However, the prevalence of males may be associated with the setting of the study as there are many male nurses in most Nigerian hospitals, especially in the north. Correlations were done between gender

and knowledge, gender and attitude and gender and practice of EBP. These showed a positive correlation between knowledge and gender, attitudes and gender as well as practices of EBP and gender. However the correlations were not significant.

5.2.3 Correlations between the knowledge, attitudes and practice of EBP with educational level of registered nurses

The finding of this study indicated that the majority of the respondents (60.9%) had only a diploma in nursing. This finding is consistent with the previous study of Bonner and Sando (2008) where the authors noted that the majority of the respondents in their study had no undergraduate qualifications. However, correlation tests were performed between educational level and knowledge, educational level and attitudes and educational level and practices of EBP. The finding of this study showed a weak negative correlation between knowledge and level of education with a correlation of -0.244. It also showed that there was a weak negative correlation between nurses' attitudes and level of education, with a correlation of -0.069. This implies that an increase in level of education results in a decrease in perceived knowledge and attitude of the registered nurses towards EBP. However, the findings also showed a weak positive correlation (0.047) between level of education and the application of evidence-based practice. This finding is not in agreement with various other studies (Bonner and Sando, 2008; Melnyk et al., 2008; Ofi et al., 2008; Bartelt et al., 2011), which pointed out that nurses with more advanced educational status are likely to have more knowledge of evidence based practice compared to their counterparts with lower educational status. Yip Wai et al. (2013) did not find any significant relationship between level of education and EBP knowledge. The finding of this study is therefore concerning considering that the knowledge base of individuals should broaden in relation to advanced educational status (Boström et al., 2009b; Breimaier et al., 2011). However, this may be attributed to the fact that very few of the respondents had advanced nursing qualifications and that research appraisals were not well acknowledged in their curriculum (Breimaier et al., 2011).

On the aspect of the correlation of level of education with attitudes towards EBP, the statistically significant negative correlation finding of this study is also contrary to other studies (Bonner and Sando, 2008; Heckenberry et al., 2006; Knops et al., 2009), which concluded that nurses with higher educational credentials are likely to

have positive attitudes towards EBP. The finding of this study is therefore surprising in view of the others that have documented positive relationships between education and attitudes towards EBP (Koehn and Lehman, 2008).

5.2.4 Difference between senior and junior registered nurses' knowledge of evidence-based practice

The finding of this study showed that there is no significant difference between junior and senior registered nurses' perceived levels of knowledge of evidence based practice. It could be assumed that the senior nurses possess a higher level of knowledge than their junior counterparts due to longer years of experience (Boström et al., 2009a; Breimaier et al., 2011), but this was not the case in this study. A study by Boström et al. (2006) also found no significant differences between the groups of nurses studied as did a later study by Boström et al. (2009a), who concluded that this is associated with the culture of nursing that disempowers junior nurses from decision making. However, the finding is not in agreement with various other studies (Bonner and Sando, 2008; Heckenberry et al., 2006; Knops et al., 2009), who found that senior nurses had more knowledge than the junior nurses in terms of evidence-based practice. Their studies indicated that more senior nurses, especially those at managerial level, are more likely to appreciate evidence-based practice than those at junior levels.

5.3 Registered nurses perceived level of knowledge of evidence-based practice

Generally, the findings of the study showed that most of the respondents perceived having a good level of knowledge of evidence-based practice (mean= 3.43 ± 0.86). The scores were on a five point Likert scale; therefore a mean of 3.43 indicated that the nurses perceived having good knowledge and skills of EBP. The finding of this study indicated that the registered nurses believed that they were adopting EBP when implementing nursing care and make clinical decisions based on patients' subjective and objective data, information from textbooks and previous experiences of health care professionals such as nurses, doctors and physiotherapists. The recognition of patients' preferences as a component of EBP has been documented in the literature (Bartelt et al., 2011; Maaskant et al., 2013; Pravikoff et al., 2005; Van

Achterberg et al., 2008). Similarly, the consideration of expert opinion which is often associated with practice experience has been acknowledged as an integral part of EBP (Breimaier et al., 2011; Nolan, 2005; Rycroft-Malone et al., 2004). The understanding of a concept is a necessary first step in integration of the concepts (Breimaier et al., 2011). This may suggest the benefit of including research methodology and EBP in the curriculum of nursing to enhance the understanding of EBP (Agbedia, 2012; Ayandiran et al., 2013). However, the finding of this study is contrary to the findings of Berland et al. (2012) and Koehn and Lehman (2008), whose findings revealed that nurses were not familiar or comfortable with the term evidence-based practice.

The knowledge of how to conduct research comprises an essential step in implementation of EBP (Chan et al., 2011b). The findings of this study regarding respondents' skills of conducting research show that most of the respondents perceived having good research skills. This finding is not in agreement with several other findings (Burney et al., 2012; Chan et al., 2011b; Pravikoff et al., 2005; Ubbink et al., 2011; Bonner and Sando, 2008) where nurses expressed lack of research and evidenced-based practice skills, thus creating a gap between knowledge and practice of EBP. However, Ofi et al. (2008) had similar findings to this study in which the respondents not only expressed having good research skills, but also indicated that they practiced them. While it may not be possible for all nurses to partake in research, it is critical that they possess the skills to appraise the findings of research (Bonner and Sando, 2008).

Similarly, the finding of this study regarding information technology skills indicates that the great majority of respondents perceived having good skills. This finding is consistent with the findings of Maaskant et al. (2013) in which nearly all the participants rated themselves as having good computer and internet skills. Similarly, Bartelt et al. (2011) also found that most of the respondents had positive perceptions of having information technology skills. However, in their study, Sherriff et al. (2007) concluded that most nurses lack the ability to explore the computer for searching information. Information technology skills are necessary to be able to find credible information for solving a problem (Bertulis, 2008; McKnight, 2006; Pravikoff et al., 2005) and the ability of the information seekers determines the accuracy of the

information that can be retrieved (Brown et al., 2010). Interestingly, supporting nurses to improve their information technology skills to enable them retrieve relevant evidence to inform their nursing practices has been documented as a useful EBP strategy (Boström et al., 2009b; Pravikoff et al., 2005; Yip Wai et al., 2013).

With respect to monitoring and reviewing of practice skills, 119 (89.5%) of the respondents perceived having good knowledge, while 14 (10.5%) had poor knowledge. Boström et al. (2009a) found that only one third of the respondent believed they possessed the skills for reviewing practice. The ability to monitor and review practice is necessary to keep up with current evidence (Maaskant et al., 2013; Van Achterberg et al., 2008). This may eliminate the potential to rely on only traditional approaches of care delivery (Berland et al., 2012; Bertulis, 2008; Carlson, 2009; Krainovich-Miller et al., 2009). Traditional approaches may not be scientific and cost effective (Agbedia, 2012; Ayandiran et al., 2013) and may sometimes be associated with harm (Grol and Grimshaw, 2003).

The finding of this study showed that 103 (77.4%) of the respondents perceived that they had good knowledge in responding to the question on converting information needs into a research question, while 30 (22.6%) had poor knowledge. This finding is contrary to the finding of Yip Wai et al. (2013), in which most of the respondents perceived inability to formulate research questions based on the clinical needs and few of the respondents in the study by Boström et al. (2009a) believed they could formulate research questions. The ability to develop research questions has the potential to help nurses to search for and critically review relevant materials that are related to the research problem (Boström et al., 2009a; Yip Wai et al., 2013).

The finding of this study indicates that the majority of the respondents (85%) perceived having good knowledge of awareness of major information types and sources. This is contrary to the findings of the study of Maaskant et al. (2013). These researchers found that although the participants had good knowledge of computers, most not only lack the ability to source information about EBP from the data bases, but also lack the knowledge of the sources of evidence. Other studies (Ozsoy and Ardahan, 2008; Ubbink et al., 2011) also found that most nurses were not only unaware of EBP information sources, but sourced their information from non-

research sources and used their experiences to inform their daily nursing practices. Although experience is relevant in EBP (Bartelt et al., 2011), awareness of information sources is necessary to enhance access to relevant literature (Bertulis, 2008; Maaskant et al., 2013; McKnight, 2006; Pravikoff et al., 2005).

With respect to the item regarding the ability to identify gaps in their professional practice, 117 (88%) of the respondents indicated that they have good knowledge, which is similar to the finding of Yip Wai et al. (2013). However, in the study by Chan et al. (2011b), a large number of participants (46.9%) said they unable to identify gaps in their practices. Chan et al. (2011b) argued that it is necessary to be able to identify gaps in the practice in order to provide an evidenced-based solution to a problem as it is often said that a problem known is half solved. With respect to knowledge of how to retrieve evidence, 115 (86.5%) of the respondents perceived that they had good knowledge. If this ability is lacking, there could be a tendency to retrieve information that is not credible or not be able to retrieve evidence at all (Bertulis, 2008; McKnight, 2006; Ozsoy and Ardahan, 2008). A previous study (Maaskant et al., 2013) shows a different finding from this study whereby nurses studied lacked the skills to retrieve evidence.

Critical appraisal is how to assess and evaluate sound evidence (Brown et al., 2010). Seventy nine percent (79%) of the respondents believed they had good ability to analyse critical evidence against a set standard. This ability is desired in order to understand and synthesise credible evidence (Brown et al., 2010). Studies carried out by Sherriff et al. (2007) and Yip Wai et al. (2013) found that the nurses expressed low ability of analysing research reports. Similarly, on the ability to determine how valid (close to the truth) the material is, 110 (82.7%) of the respondents were good. Sherriff et al. (2007) had a contrary finding to this study. In their finding, the nurses perceived not having confidence in evaluating the validity of a research report.

This study found that a large majority of the respondents (125; 94%) perceived that they had good ability to determine how useful (clinically applicable) a material is. This may imply that the environment in which the registered nurses are practicing provides support to critique the available evidence in order to determine its

usefulness (Boström et al., 2009b). This is not in agreement with the finding of Sherriff et al. (2007) which indicated that the majority of the nurses studied were not able to determine how useful a material could be. Boström et al. (2009b) argue that it is necessary to be able to determine the validity of evidence before considering its application as valid evidence has the potential to improve care outcome and patient satisfaction (Koehn and Lehman, 2008; Mallory, 2010; Mantzoukas, 2008; Melnyk et al., 2008).

The study also showed that most of the respondents (122; 91.7%) perceived that they had good skills in applying information to individual cases, which is similar to the finding of Yip Wai et al. (2013). Different individuals with similar cases may require different approaches to their management due to individual differences. It is therefore important to be able to determine the different needs of each individual case (Yip Wai et al., 2013).

The sharing of ideas about research findings and EBP generally enhances the integration of EBP into practice (Grol and Grimshaw, 2003; Ofi et al., 2008; Olade, 2004). The respondents in this study were asked to rate their skills of sharing ideas of EBP with their colleagues. The result shows that 127 (95.5%) of the respondents believed they possessed the skills of sharing ideas and information with colleagues. This is consistent with the finding of Chan et al. (2011b) in which most of the respondents reported sharing information through journal clubs and posting of research articles online. However, it is not consistent with the findings of Ofi et al. (2008) in which 66% of the respondents indicated that they did not collaborate with colleagues on research. Similarly, Olade (2004) concluded that nurses' isolation from other colleagues interferes with professional interaction on evidence-based practice.

On the ability of dissemination of new ideas about care to colleagues, the finding of this study show that 120 (90.2%) believed they had good skills. Olade (2004) had a contrary submission that the nurses studied rarely communicate new evidence to colleagues. Sharing of ideas with others increases confidence, moral and value of work (Adib-Hajbaghery, 2007; Berland et al., 2012). Sharing of ideas, mentoring and collaborating with colleagues and other professionals about EBP will enhance nurses knowledge base and experience of EBP (Adib-Hajbaghery, 2007; Bartelt et al., 2011;

Berland et al., 2012; Rapp et al., 2008). This study also found that 117 (88%) of the respondents perceived good ability in reviewing their own practice, which is similar to the findings of Yip Wai et al. (2013). When an individual reviews practices, current evidences are likely to be incorporated into the new practices. This further leads to better patient care (Bonner and Sando, 2008; Majid et al., 2011).

5.4 Registered nurses' perceived attitudes towards evidence-based practice

With the mean value of 3.11, it can be concluded that a good number of the registered nurses studied perceived having good attitudes towards evidence-based practice. This coincides with other studies (Majid et al., 2011; Ubbink et al., 2011; Yip Wai et al., 2013), which found that most of the nurses had positive attitudes towards evidence based practice. Similarly, Chan et al. (2011b); Melnyk et al. (2004) and Sherriff et al. (2007) found that most nurses believe that evidence-based practice can improve patient care and are willing to understand, integrate and implement it into their daily nursing practice. It is however important to note that some studies (DeVon et al., 2013; Knops et al., 2009; Turan et al., 2006) found that nurses had negative attitudes towards evidence based practice. Most of the participants in these studies believed that EBP would interfere with the provision of good patient care. In spite of this, literature has shown that nurses with positive attitudes towards EBP are more likely to practice based on evidence (Burney et al., 2012; Chan et al., 2011b; Ubbink et al., 2011; Bonner and Sando, 2008). Intervention on attitudinal change is necessary in health institutions in order to promote the uptake of EBP (Ofi et al., 2008).

The finding of this study shows that a large percentage (59.4%) of the respondents agreed that their workload is too high to keep up to date with all new evidence. This finding is in agreement with other studies (Breimaier et al., 2011; Majid et al., 2011; McInerney and Suleman, 2010) in which most of the respondents indicated that nurses are too busy to appraise and incorporate the findings of research into their nursing practice. Contrary to this finding, however, Ofi et al. (2008) found that nurses believed that their workload should not be allowed to interfere with keeping up to date about new evidence to inform their nursing practice. Workload due to increase in patient burden may not only lead to poor working conditions (ICN, 2006), but may

also shape the belief of nurses that they do not have sufficient time available to accept EBP (Heckenberry et al., 2006; Upton and Upton, 2006).

The results also revealed that 72 (54.1%) of the respondents do not like people questioning their clinical practice, which is based on established methods. This finding is of great concern when taking into account the respondents' perceived knowledge of EBP. Nurses should accept that their practices be critiqued by others in order to determine their validity and usefulness (Cotterill-Walker, 2012). Although the findings of other studies (Majid et al., 2011; Yip Wai et al., 2013) coincided with the finding of this study, the need to assist nurses to develop positive attitudes towards practice critique is emphasized in the literature (Cotterill-Walker, 2012). This may be achieved through attitudinal change interventions and interaction with colleagues about EBP (Agbedia, 2012; Bostrom et al., 2008; O'Donnell, 2004).

This study found that most of the respondents did not believe that evidenced-based practice has limited application. This may imply that the nurses are positive regarding the benefits of EBP in nursing care and/or have awareness or good understanding of EBP (Agbedia, 2012; Ayandiran et al., 2013; Berland et al., 2012; Breimaier et al., 2011; Chan et al., 2011b; Ubbink et al., 2011). Previous studies in different countries (Breimaier et al., 2011; Ofi et al., 2008; Ubbink et al., 2011) share similar views with the respondents in this study. The respondents in these studies indicated that research has relevance in the day-to-day activities in nursing. Studies conducted by Majid et al. (2011) and Ofi et al. (2008) also found that most nurses did not believe that evidence-based practice has limited utility for nursing intervention. However, Yip Wai et al. (2013) had different results and most nurses in their study believed that EBP has limited usefulness to nursing practice. This may have been due to limited awareness and insufficient understanding of the benefits of EBP to patient management (Burney et al., 2012; Chan et al., 2011b; Ubbink et al., 2011; Bonner and Sando, 2008).

The study also found that the respondents disagreed on preferring to use more traditional methods rather than changing to new approaches. This is contrary to previous findings (Berland et al., 2012; Bertulis, 2008; Carlson, 2009; Krainovich-Miller et al., 2009; Rane, 2005; Thompson et al., 2005) which showed that nurses

preferred to use traditional approaches, such as experience, use of textbooks and reliance on colleagues and physicians' orders. Although these are also sources of evidence, they may sometimes not be reliable (Burney et al., 2012; Majid et al., 2011). However, the finding of this study is consistent with Majid et al. (2011) whose findings indicated that the respondents did not like to rely on traditional approaches in their daily nursing practice.

The findings revealed that 49.6% of the respondents did not agree with the item that most research articles were not relevant to their daily practice. Some previous studies (Majid et al., 2011; Sherriff et al., 2007) had similar findings. This could be an indication that the registered nurses studied are willing to keep in pace with the available evidence. However, findings of various other studies (Breimaier et al., 2011; Koehn and Lehman, 2008; Maaskant et al., 2013; Ubbink et al., 2011) indicated that nurses believe they are too busy to have time to read research articles relevant to nursing. Finding enough time for nurses to engage in EBP activities is crucial to quality nursing care (Bartelt et al., 2011; Chan et al., 2011b; Sherriff et al., 2007). Overall, the findings of this study indicated that the registered nurses were willing to participate in EBP activities to enhance standard nursing practices.

5.5 Registered nurses' perceived application of evidence-based practice

The findings of this study showed that most of the registered nurses (mean=3.92) perceived that they were implementing evidence-based practices in their routine professional nursing practices. Along with knowledge, implementation of EBP is an essential step in the provision of quality and reliable care in clinical practice (Chan et al., 2011b). The high perceived application of EBP found in this study is contrary to the findings of other studies (Berland et al., 2012; Boström et al., 2006; Eccles et al., 2005; Grol and Grimshaw, 2003; Heckenberry et al., 2006), which found that the majority of the participants based their nursing practices on tradition and routine activities and application of evidence-based practice was rather slow and inconsistent. They further revealed that most of the care provided was based on doctors' orders and experience. Bonner and Sando (2008) and Boström et al. (2009a) reported that nurses' engagement in EBP activities was not encouraging. Berland et al. (2012); Knops et al. (2009) and Turan et al. (2006) also found that

nurses self-reported that most of their nursing services were not evidence-based and that they hardly apply evidence-based practice in their daily practices.. However, based on the finding of this study, one may conclude that the perceived implementation of EBP is influenced by the respondents' positive attitude, which is in line with the Diffusion of Innovation theory (Rogers, 1995). The theory states that individuals adopt changes which they believe have relative advantages to their practices.

The ability to identify problems in practice is crucial in providing the solution (Berland et al., 2012) and the finding of this study showed that the majority of the registered nurses expressed the ability to identify clinical issues/problems. This may assist nurses in searching for relevant empirical literature in relation to problems and in the assessment of the quality of the materials (Berland et al., 2012). Majid et al. (2011) had similar finding in which the majority of the respondents also expressed having the ability to identify clinical problems associated with EBP.

The findings of this study show that the majority of the registered nurses believed that they are able to translate a clinical issue/problem into a well-formulated clinical question. This skill can enhance the ability to search for relevant materials and assess the applicability of study findings in research articles (Boström et al., 2009a). The findings also showed that the registered nurses agreed that they are able distinguish between different types of questions. Majid et al. (2011) reported similar findings. Their study found that more than 60% of the respondents believed they could translate clinical issues into well formulated clinical questions. This may be attributed to the level of perceived interest that the nurses had in EBP. On the other hand, however, studies by Boström et al. (2009a) and (Yip Wai et al. (2013), found that only few of the respondents perceived having the ability to formulate relevant clinical questions.

The findings also revealed that the majority of the respondents indicated that they were able to conduct online searches (using data bases and search engines). This is not in line with findings of Boström et al. (2009b); Boström et al. (2006) and Melnyk et al. (2004) in which the respondents reported not being able to search data bases to locate evidence. The finding is in line with others (Majid et al., 2011; Ofi et al.,

2008), however, who reported that the nurses studied indicated the ability to conduct literature searches online. To be able to get sound evidence for practice, nurses need to be able to search the databases for valid information (Bartelt et al., 2011; Brown et al., 2010; Maaskant et al., 2013). This may be achieved through various ways, including collaboration with librarians to teach individuals how to locate sound evidence in the data bases (Brown et al., 2010).

Similarly, the findings of this study indicate that the respondents agreed that they related research findings to their clinical practice and pointed out similarities and differences in research questions. Chan et al. (2011b) and Majid et al. (2011) had similar submissions where most of the respondents not only indicated participating in relating research findings to their practice, but were also involved in policies and protocol formations based on research findings. The essence of research might be defeated if the findings are not used for practice (Breimaier et al., 2011; Chan et al., 2011b; Majid et al., 2011). The need for policy makers to recognise the findings of research is well documented in the literature (Uneke et al., 2010). Ensuring recognition of research findings into policy documents will facilitate application of EBP in health care delivery (Uneke et al., 2010).

The majority of the participants in this study agreed that they read research reports, have a general notion about their strengths and weaknesses and use a checklist to assess research articles. This is similar to the findings of Majid et al. (2011), which showed that nurses were able to evaluate the findings of research studies using checklists. This is necessary to be able to determine the soundness and usefulness of research finding (Boström et al., 2009b; Majid et al., 2011). This finding may suggest that the respondents believed they were comfortable in identifying studies that are credible and relevant to nursing. This finding is also in line with Boström et al. (2009b) and Majid et al. (2011), who found that most of the nurses studied read journal articles to inform their practices. However, Boström et al. (2009a); Breimaier et al. (2011) and Bonner and Sando (2008) had contrary submissions in which only few of the respondents were able to appraise research articles. Similarly, Carlson, (2009) and Ofi et al. (2008) found that an average nurse is unlikely to read relevant professional journal articles. These authors added, however, that nurses who read professional journals are more likely to base their practices on current evidence.

Ensuring access to journal data bases as recommended by participants in the study of EBP by Uneke et al. (2010) is a good means of encouraging the reading of journal articles by nurses.

The finding of this study indicated that the majority of the respondents perceived that they applied interventions based on the most applicable evidence. This finding is not in agreement with Boström et al. (2009a); Boström et al. (2009b); Majid et al. (2011) and Berland et al.(2012), who found that only few of the participants reported the application of intervention based on evidence. The submissions by Berland et al. (2012) and Ofi et al. (2008) also showed that nurses rarely applied nursing care based on sound evidence. Uneke et al. (2010) concluded that health organizations' non-provision of facilities needed for EBP implantation due to financial constraints is a major factor in the lack of EBP implementation, while provision of the needed facilities, creating opportunities for continual education on EBP, engaging in journal clubs and access to mentors have been effective in improving EBP uptake (Breimaier et al., 2011; Brown et al., 2010; Chan et al., 2011b). This may improve the nurses critical appraisal knowledge and skills as well as the applicability of EBP in the practice area (Brown et al., 2010; Chan et al., 2011b; Breimaier et al., 2011; Brown et al., 2010; Chan et al., 2011b).

The result of this study also found that the respondents agreed that they evaluated the application of intervention and identified areas of improvement. This finding is consistent with Breimaier et al. (2011) and Majid et al. (2011) in which participants indicated their ability to evaluate the application of interventions based on evidence. This finding is also similar to the findings of Bartelt et al. (2011) and Boström et al. (2009a), who found that nurses were able to critically appraise research findings for application of evidence-based practice. It is also consistent with the findings of Bostrom et al. (2008) and Breimaier et al. (2011) that good number of nurses applied evidenced-based practice in their professional activities. This skill can be enhanced by analysing empirical literature on specific topics and initiating discussions with colleagues and experts (DeVon et al., 2013). This will result in competent nurses who are critically evaluative, which will lead to an improvement in patient care (Berland et al., 2012).

5.5 Registered nurses' perceived barriers to evidence-based practice

This study found that nurses perceived several factors that are barriers to the implementation of evidence-based practice. Respondents indicated inadequate understanding of research terms used in research articles as a barrier to evidence-based practice. This is in accordance with several other studies (Berland et al., 2012; Koehn and Lehman, 2008; Van Achterberg et al., 2008; Majid et al., 2011; Maaskant et al., 2013) which also found that respondents had difficulty in understanding research terms. Similarly, Knops et al. (2009) and Ofi et al. (2008) reported that nurses rated non-understanding of research reports as a major barrier to EBP. This may suggest the need to support nurses by including EBP techniques in their curriculum and providing on-going programmes to facilitate their understanding of EBP (Agbedia, 2012; Ayandiran et al., 2013; Brown et al., 2010). This will not only be useful in developing effective teaching strategies (Brown et al., 2010), but will also reshape the future of nursing care practices in Nigeria to fit the health care needs of the nation (Agbedia, 2012; Ayandiran et al., 2013).

The finding of this study also showed that the majority of respondents perceived inability to understand statistical terms used in research articles as a barrier to evidence-based practice. This is surprising considering their positive responses regarding their ability to analyse evidence and to determine the validity and usefulness of information. This may be associated with their level of education (Bonner and Sando, 2008). This finding may suggest the need to further explore EBP knowledge among nurses and to develop more educational strategies to help nurses improve in EBP. This assumption is in line with a previous study on EBP by Koehn and Lehman (2008). In a study to examine the knowledge, attitudes and use of research by nurses, Bonner and Sando (2008) found that statistical methods taught during undergraduate training was not sufficient to prepare nurses to appreciate statistics in clinical use. A large percentage of the participants in this study were diploma and post basic nursing holders, with only few first degree holders. Various authors (Breimaier et al., 2011; Koehn and Lehman, 2008; Maaskant et al., 2013; Majid et al., 2011) have argued that nurses' inability to appreciate statistical interpretation hinders their application of EBP. Similarly, Ofi et al. (2008) and Sherriff et al. (2007) concluded that nurses' limited understanding of

the statistical language used in research reports affects their use of research findings. There may be need to organise statistical tutorial classes for nurses who experience difficulty in understanding statistics. On the other hand, researchers have the obligation to report findings of their studies with simplified statistical terms as this may enhance their appreciation of statistical interpretation (Ofi et al., 2008).

One of the findings of this study showed that the respondents also perceived difficulty in judging the quality of research papers and reports as a barrier to the implementation of evidence-based practice. This finding is supported by Maaskant et al. (2013) and Majid et al. (2011), who acknowledged that individuals might find it difficult determining the best evidence due to the large amount of available literature. Interestingly, most of the respondents did not perceive inability to properly interpret the results of research studies and difficulty in determining the applicability of research findings to be barriers to evidence-based practice. This finding is also consistent with findings of Majid et al. (2011). This may suggest the need to involve nurses in the more practical aspects of EBP and provide the resources needed in order for nurses to get a better understanding of the processes involved in EBP (Bostrom et al., 2008; Brown et al., 2010; Brown et al., 2009; Chan et al., 2011b; Ferguson and Day, 2007; Gerrish et al., 2007; Gifford et al., 2007; McInerney and Suleman, 2010).

The findings of this study further show that the respondents perceived inability to implement recommendations of research studies into clinical practice as a barrier to EBP. This is in line with various other studies (Bartelt et al., 2011; Bonner and Sando, 2008; Majid et al., 2011) where respondents indicated they could not adopt findings of research into their nursing practices. Thus, practices tended to be based on tradition and physicians instructions rather than on research evidence. This finding therefore suggests the need to empower nurses with the skills of evaluation of research findings to determine their appropriateness for implementation (Bartelt et al., 2011; Bonner and Sando, 2008; Rapp et al., 2008).

Other barriers identified by the respondents were difficulty in finding time at the work place to search for and read research articles and reports; insufficient time at the work place to implement changes in their current practice and insufficient resources

to implement EBP. This finding is supported by many other studies (Bartelt et al., 2011; Bostrom et al., 2008; Boström et al., 2009b; Koehn and Lehman, 2008; Maaskant et al., 2013; Majid et al., 2011; Bertulis, 2008; Bostrom et al., 2008; Knops et al., 2009; O'Donnell, 2004) which found these factors to be barriers to evidence based practice. Availability of time, in particular, has been reported by Breimaier et al. (2011); Ofi et al. (2008) and Ubbink et al., 2011) as being a major complaint of most nurses and a challenge to the implementation of EBP. This, however, serves as great obstacle to the provision of quality and cost effective care (Bartelt et al., 2011; Uneke et al., 2010). Organizational support in terms of time and resources provision and creating a conducive atmosphere must be recognized by nurse leaders as basics of EBP success (Bartelt et al., 2011; Bonner and Sando, 2008; Rapp et al., 2008). Hospitals can address this by providing nursing journals, newsletters and related research materials in the wards to enhance access by nurses (Bertulis, 2008; Maaskant et al., 2013; McKnight, 2006; Pravikoff et al., 2005). In addition, this barrier can be removed by providing internet facilities to facilitate access to online journals and encouraging the nurses to purchase nursing and related journals (Bertulis, 2008; Maaskant et al., 2013; McKnight, 2006; Pravikoff et al., 2005). This is significant considering that they are paid journal allowances. The education unit should augment this by providing prompt information to nurses about the available journals and their cost implication.

The identification of barriers perceived to be encountered by registered nurses in implementing EBP is an important step in developing strategies to remedy the problems. Thus, it is important to explore strategies to address both the individual and organizational barriers that are associated with EBP uptake in order to develop solutions.

5.6 Relationships between knowledge, attitude and application of evidence based practice among registered nurses

The finding of this study showed that there was a weak positive correlation between knowledge and attitude of general nurses ($r = 0.034$), a weak positive correlation between knowledge and practice (0.155) and a weak positive relationship between practice and attitude of registered nurses towards EBP ($r = 0.076$). The correlations

are however not significant. The null hypothesis was therefore not rejected. The correlation between knowledge, attitudes and practice of EBP has been shown in several studies (Bartelt et al., 2011; Bonner and Sando, 2008; Brown et al., 2010). The studies showed that knowledge about EBP promote positive attitudes and subsequently the practice. This is in line with Rogers (1995) Diffusion of Innovation theory which stipulates that knowledge of the innovation persuades the individual to implement the innovation, which in the case of this study is EBP.

5.6 Summary

This study focused on the perceptions of registered nurses on evidence-based practice in General Hospital Minna, Niger state, Nigeria. It particularly explored the perceived knowledge, attitudes and application of evidence-based practice among registered nurses and their perceived barriers to implementing EBP. It also explored the relationship between knowledge, attitude and practice, the relationship between knowledge of EBP and level of education and the differences between junior and senior nurses.

One hundred and fifty (150) respondents were purposively selected for the study and a 38 item questionnaire was administered to them. Of these, 133 respondents filled in and returned their questionnaires. The instrument consisted of two questionnaires by different researchers, which had been adapted and merged by the researcher. The new questionnaire was scrutinized by the researcher's supervisor and its validity and reliability were tested before administration to the respondents.

The data for this study was collected in 4 weeks. The data collected was coded and subjected to statistical analysis using Microsoft Statistical Package for Social Sciences (SPSS), Version 20. The statistical techniques employed included descriptive statistics, correlation and t-test of difference.

Based on the objectives, the findings of this study revealed that most of the registered nurses perceived possessing a good level of knowledge of evidenced-based practice. The mean score of knowledge in the five point scale was 3.43 ± 0.86 . Similarly, the findings of this study showed that the majority of the registered nurses studied perceived having good attitudes towards evidenced-based practice.

The mean score for attitude was 3.11. On the perceived practices of EBP, the finding also showed that the respondents had good perceptions of practicing EBP. The perceived practice of EBP by the respondents recorded the highest mean score of 3.92. However, although most of the respondents expressed perceptions of good knowledge, positive attitudes and practice EBP, the findings of the study showed that lack of research skills and other individual and organisational factors hindered the implementation of EBP in the hospital. The findings did not reveal a significant relationship between level of education and the perception of EBP or significant differences between junior and senior nurses.

5.7 Implications for Nursing

The evidence-based movement has emphasised the application of research findings into clinical practice (Mantzoukas, 2008). An environment with a positive culture, good leadership, infrastructural development and adequate manpower is conducive to evidence-based practice (Bostrom et al., 2008; Brown et al., 2010; Brown et al., 2009; Chan et al., 2011b; Gifford et al., 2007; Maaskant et al., 2013; McInerney and Suleman, 2010). In such an atmosphere, nurses will be able to provide highly effective and cost effective health care to the consumers based on sound evidence (Bartelt et al., 2011). This will also allow nurses to practice in an environment that is of international standard and to keep pace with new developments in the health care industry.

Although nurse continue to recognise that EBP has the potential to empower their decision making and improve care outcomes (Bartelt et al., 2011), organizational barriers, such as lack of time, and personal barriers, such as negative attitudes and inadequate knowledge, are still retarding the progress of EBP (DeVon et al., 2013; Knops et al., 2009; Majid et al., 2011; Yip Wai et al., 2013). EBP will not only facilitate quality care outcomes, but will also ensure that nurses recognise the role of research in nursing care. Nurses must therefore continue to bridge the gaps between their knowledge and practice.

The findings of this study indicated that registered nurses had moderate positive perceptions of evidenced-based practice with no positive correlation between education and knowledge of EBP. The implication to nursing research is to explore

the role of education in enhancing knowledge, attitudes and practices of registered nurse towards EBP. This will help to inform the scope of EBP courses needed to enhance nurses' positive perceptions and practices of EBP. Similarly, the findings of this study show no difference between the perception of junior and senior nurses in terms of perceived knowledge, attitudes and practice of EBP. Further research is therefore needed to explore the differences in junior registered nurses' perceptions of EBP. The need to broaden the nursing curriculum to accommodate courses on research and EBP is significant in departments of nursing in the universities and colleges of nursing sciences (Agbedia, 2012; Ayandiran et al., 2013).

5.7 Recommendations for future research

This study was limited to one hospital in Niger state, Nigeria. Broader research needs to be conducted to include every general hospital in the state. Further studies could explore the influence of education on EBP and factors that can enhance the uptake of EBP among nurses as well as assess the ability of nurses to actually implement EBP in the clinical setting and its effectiveness.

5.8 Conclusion

Evidence-based practice contributes to the development of professional nursing practice and standard patient care. Through the appreciation of EBP, nurses can develop and maintain professional integrity, respect, cooperation and quality patient care. The findings of this study have added to the existing knowledge on nurses' perception of evidence-based practice.

Although the respondents in the study identified several factors as barriers to EBP, the findings of this study suggest that registered nurses had moderate positive perceptions of EBP, with more than half of the respondents perceiving good levels of knowledge and positive attitudes towards EBP. There is need, however, for additional evidenced-based education within clinical settings to ensure that clients receive nursing services that are based on sound, high quality evidence.

5.8 Limitations of the study

This study is limited by two factors, namely the method of sampling and method of data collection. The study used a convenient type of sampling to select the respondents into the study and this sampling technique may sometimes not give a representative opinion of the population studied. Thus, the finding of this study may be biased towards the respondents who have been sampled.

The use of self-report as a method of data collection may also be a limitation. The respondents' responses to the questions asked may only represent their perceived knowledge, attitudes and practices of EBP in the clinical setting. The respondents may also only give answers that they feel are favourable to them or the researcher and not the true picture of their perceptions. Therefore, due to the instrument looking at perceived knowledge, attitudes and perceived practices, a follow up study on the actual practices of EBP would be a welcome idea.

Finally, as this study was conducted in only one hospital in Niger state, Nigeria, the findings may therefore not be generalisable to every setting.

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Appendix 1: Ethical Clearance



28 November 2013

Mr Adamu Aliyu (211543950)
School of Nursing & Public Health
Howard College Campus

Protocol reference number: HSS/1228/013M
Project title: Exploring the perceptions of registered nurses towards Evidence-Based Practice (EBP) in a selected hospital in Minna Niger State, Nigeria

Dear Mr Aliyu,

Expedited Approval

I wish to inform you that your application dated 09 September 2013 has now been granted Full Approval.

Any alteration/s to the approved research protocol i.e. Questionnaire/interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. Please note: Research data should be securely stored in the discipline/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

Dr Shreenuka Singh (Chair)

/ms

cc Supervisor: Dr JR Naidoo
cc Academic Leader Research: Professor M Marks
cc School Administrator: Ms Caroline Dhanraj

Humanities & Social Sciences Research Ethics Committee

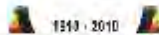
Dr Shreenuka Singh (Chair)

Westville Campus, Govan Mbeki Building

Postal Address: Private Bag 201001 Durban 4000

Telephone: +27 (0) 31 262 3927/3333/4057 Facsimile: +27 (0) 31 250 4303 Email: simbop@ukzn.ac.za / shreenuka@ukzn.ac.za / hr@ukzn.ac.za

Website: www.ukzn.ac.za



100 YEARS OF ACADEMIC EXCELLENCE

Forming Campuses: Edgewood Howard College Madisa School Pietermaritzburg Westville

Appendix 2: Request for Permission to Conduct the Study



**UNIVERSITY OF
KWAZULU-NATAL**

**INYUVESI
YAKWAZULU-NATALI**

**FACULTY OF HEALTH SCIENCES
SCHOOL OF NURSING AND PUBLIC HEALTH
HOWARD COLLEGE CAMPUS**

5th June, 2013.

The Permanent Secretary,
Hospital Management Board,
Niger State,
Nigeria
Through:
The Director Nursing Services,
Hospital Management Board,
Minna,
Niger State
Nigeria.

Sir,

REQUEST FOR PERMISSION TO CONDUCT A SURVEY ON EVIDENCE BASED PRACTICE IN GENERAL HOSPITAL MINNA

I hereby write to request for permission to conduct a survey (research) in General Hospital Minna. The title of the study is „Exploring Nurses Perception of Evidence Based Practice“.

The study will only involve collecting data from registered nurses using a questionnaire and does not involve any experimentation. The findings of the study will provide a wider perspective on the existing knowledge and practices of nurses towards Evidence Based Practice in General Hospital Minna, Niger state thereby providing supporting evidence needed for the development of practice guidelines in the state hospitals.

The researcher is a masters student in the School of Nursing and Public Health, University of KwaZulu-Natal. I will appreciate your quick response.

Thank you

Adamu Aliyu
+27843497450


Appendix 3: Letter of Permission from the Hospitals Management Board

HOSPITALS MANAGEMENT BOARD
MINNA, NIGER STATE.

Telephone:.....
- HMB/PHS/1/T.111

Our Ref: _____

Your Ref: _____



Block F,
Old Secretariat Complex,
Private Mail Bag 220,
Minna, Niger State-Nigeria.
E-mail:nigershmb@ymail.com

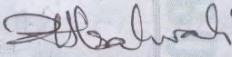
Date: _____ 4/9/2013

Adamu Aliyu,
University of Kwazulu – Natal,
Faculty of Health Sciences,
School of Nursing & Public Health,
Howard College Campus.

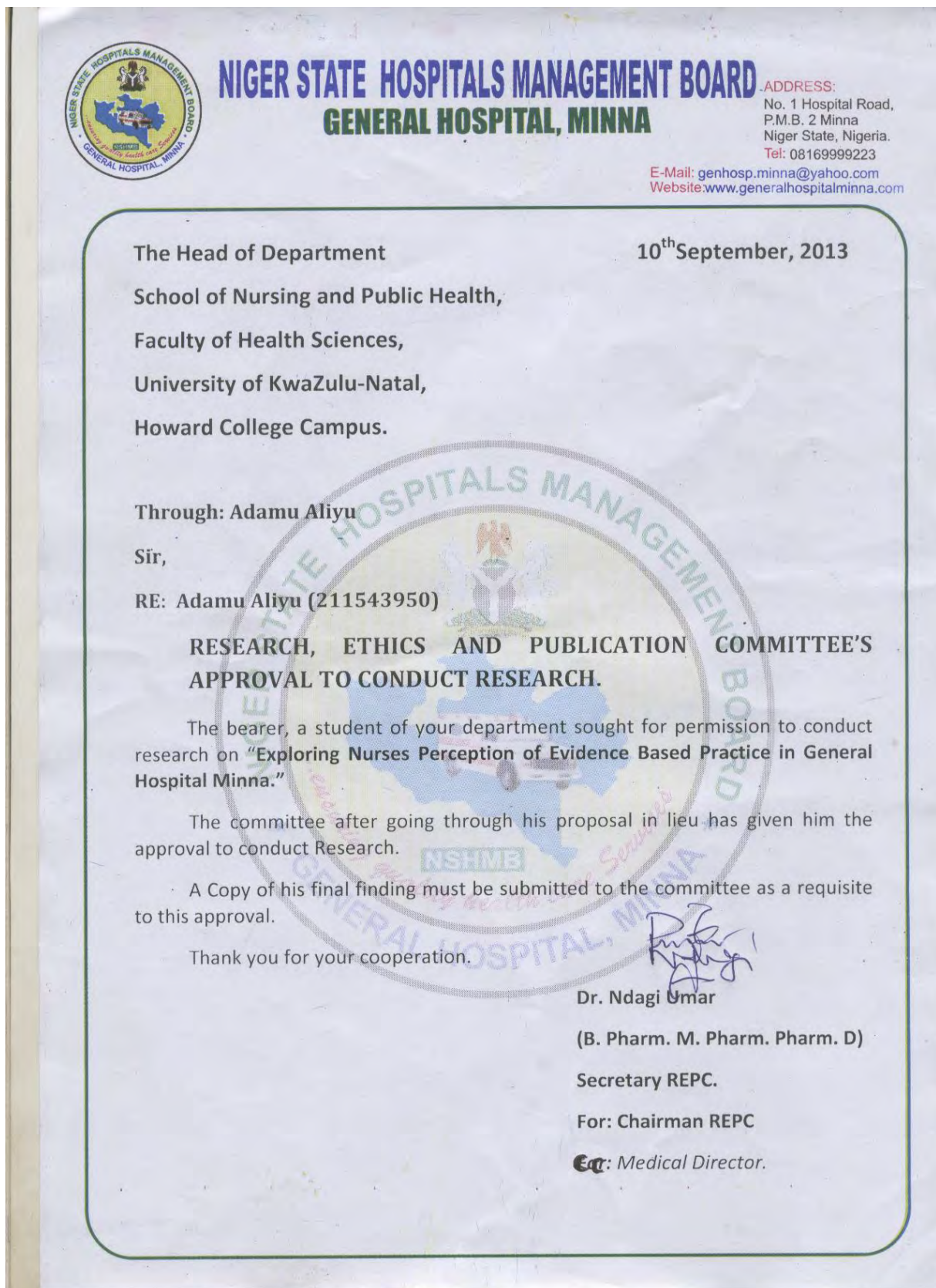
**RE: REQUEST FOR PERMISSION TO CONDUCT OF SURVEY ON EVIDENCE
BASED PRACTICE IN GENERAL HOSPITAL, MINNA.**

Sequel to your submission on the above mentioned matter dated 5/6/2013, I write to convey approval to you, however, you are to let us get a copy of your findings, please.

2. Thank you.


Hajiya Hauwa I. Wali (Mrs).
Board Secretary
For: Permanent Secretary.

Annexure 4: Letter of Permission from General Hospital Minna



Appendix 5: Information and Consent Form

UNIVERSITY OF KWAZULU-NATAL CONSENT TO BE A RESEARCH PARTICIPANT

Title: Exploring the Perceptions of Registered Nurses towards Evidence-Based Practice (EBP) in a Selected Hospital in Minna, Niger State, Nigeria.

You have been requested to take part in a research study. This form gives information on the study in order to help you decide if you want to participate. Take as much time as you like to read over this information carefully. Please ask any questions you may have on the study. It is okay if you decide not to participate. If you decide to participate, you may stop participating in the study at any time.

Background and Purpose

Modern technologies in the health care sector, society's increase awareness of health and self-care, and the fast changing health care system call for nurses to adopt Evidence based practice (Agbedia, 2012, Ayandiran et al., 2012, Ofi et al., 2008). This care approach is aimed to improve the quality of care rendered by nurses worldwide.

Nigerian nurses involvement in research activities has not been widely studied and published and as well a gap exists between credible research findings and translation of those findings into practice. Consequently, the quality of care rendered by registered nurses in the Nigerian hospitals are low (Agbedia, 2012, Uneke et al., 2010). It is not understood why this gap exists. Thus, a master's student in the Schools of Nursing and Public Health at the University of KwaZulu-Natal (UKZN) Howard College is currently conducting a research to explore registered nurses perceptions towards EBP in a selected Hospital in Minna, Niger state, Nigeria.

Investigator's Contact.

The investigator can be reached at the contact information below.

Aliyu Adamu

School of Nursing and Public Health

Howard College Campus

University of KwaZulu-Natal

Durban 4041

Mobile:+27843497450

E-mail: alimuye@yahoo.com

SUPERVISOR'S CONTACT:

Dr Joanne R. Naidoo

School of Nursing and Public Health

Howard College Campus

University of KwaZulu-Natal

Durban 4041

Email: naidoojr@ukzn.ac.za

Tel: +27(0)312602213

Procedures

If you agree to participate in the study, the following will take place:

You will be issued questionnaire to answer questions about your Perceptions towards Evidence-Based Practice. This will last for about 30 minutes.

Costs

There are no costs (financial reimbursement) associated with participation in this study. The researcher will appreciate your participation.

Risks and discomforts

Your participation in this research may cause a loss of privacy. However, everything possible will be done by the researcher to ensure that this does not occur. You will be asked questions about your demographic profile and perceived knowledge, perceived attitudes and perceived practices towards EBP that may make you feel uncomfortable. You do not have to answer any questions that you do not want to answer. You can also stop participating in the study at any time.

Benefits

You may not directly benefit for your participation in this study. However, your contribution of providing valuable information will hopefully contribute to the body of nursing knowledge and may provide supporting evidence needed for the development of practice guidelines in the nursing units that can promote the quality of nursing care based on evidence. It may also help clarify relevant issues about evidence-based nursing practice among nurses.

Alternatives

You are free to or not to participate in this study. It is okay if you decide not to participate in this study. There are no negative feelings, penalties, punishments or problems if you decided not to participate in this study. Also, there are no any consequences to your job if you decide not to participate in this study.

Confidentiality

The researcher will ensure that all information about you is kept confidential. You are not required to provide us with your name. Only the investigator will have access to the questionnaires. After the study has been completed, the data will be stored in a locked file. The results may be published in a journal or used for teaching purposes. Even in such instances your name or other identifiers will not be disclosed and the information from participants will be used collectively not on individual basis.

Request for More Information

In case you have more questions about the study, you are free to ask at any time. The investigator has provided his phone numbers and Email address so that you can contact him with any questions or concerns about the study at any time. If during the study or late you wish to discuss your rights as a research subject, your participation and/or concerns about this study, or if you feel under any pressure to enroll in this study, you can contact a representative of the Biomedical Research Ethics Committee, University of KwaZulu-Natal, Durban, South Africa through:

Tel: +277(0)31 260 3587.

Questions

This study has been explained to me. If I have further questions about this study, I would first talk to the investigator. I can also contact a member of the Research Ethics Committee at the University of KwaZulu-Natal at Faculty of Biomedical Research through:

University of KwaZulu-Natal, Durban, South Africa

Tel: +277(0)31 260 3587.

Consent to Participate

I have been given a copy of this consent form to keep.

CONSENT TO PARTICIPATE IN RESEARCH PROJECT

**I..... (Your full name)
hereby confirm that I understand the contents of this document and the nature of the
research project, and I consent to participating in the research project.**

**I understand that PARTIPCATION IS VOLUNTARY and I am at liberty to withdraw
from the project at any time, should I so desire.**

.....

.....

Signature

Date

Appendix 6: Questionnaire

My name is Adamu Aliyu, a student of school of Nursing and Public Health Howard College University of KwaZulu-Natal, SOUTH AFRICA. I am carrying out a study on the Perception of nurses towards Evidence Based Practice in a selected Hospital in Minna, Niger state, Nigeria. All information obtain is for academic purpose and will be kept confidential.

INSTRUCTION: Tick [] the correct answer

RESPONDENTS DEMOGRAHIC PROFILE

AGE 20-25 [] 26-30 [] 31-35 [] 36-40 [] 41 and above []

SEX MALE [] FEMALE []

Designation SNI [] SNII [] SNO [] PNO [] ACNO [] CNO []

Highest Nursing Qualification Attained (Please select only one option)

Diploma in Nursing [] Masters Degree in Nursing []

Post Basic/Advanced Diploma in Nursing [] others, please specify []

Bachelor Degree in Nursing []

Name of Ward/unit (Optional) [] Number of years as practicing nurse []

No.	ITEM	STRONGLY Disagree	DISAGREE	UNDECIDED	AGREE	STRONGLY Disagree
1.	I belief I am adopting EBP when I implement nursing care and make clinical decision based on: patient's subjective and objective data, information from text books, previous experiences of health care professionals e.g. nurses, doctors, physiotherapist, research findings and patient's value/preference					

How would you rate your knowledge/skills on the following activities?

NO	ITEM	POOR	FAIR	GOOD	VERY GOOD	EXCELLENT
2	Research skills					
3	Information Technology skills					
4	Monitoring and reviewing of practice skills					
5	Converting your information needs into a research question					
6	Awareness of major information types and sources					
7	Ability to identify gaps in your professional practice					
8	Knowledge of how to retrieve evidence					
9	Ability to analyse critical evidence against a set standard					
10	Ability to determine how valid (close to the truth) the material is					
11	Ability to determine how useful (clinically applicable) the material is					
12	Ability to apply information to individual cases					
13	Sharing of ideas and information with colleagues					
14	Dissemination of new ideas about care to colleagues					
15	Ability to review your own practice					

Please tick where you place yourself

No	ITEM	STRONGLY DISAGREE	DISAGREE	UNDECIDED	AGREE	STRONGLY AGREE
16	My workload is too high to keep up-to-date with all new evidences.					
17	I don't like people questioning my clinical practices which are based on established methods.					
18	I believe evidence-based practice has only limited utility.					
19	I prefer using more traditional methods instead of changing to new approaches.					
20	Most research articles are not relevant to my daily practice.					

I am able to:

		STRONGLY DISAGREE	DISAGREE	UNDECIDED	AGREE	STRONGLY AGREE
21	Identify clinical issues/ problems.					
22	Translate a clinical issue/problem into a well-formulated clinical question.					
23	Distinguish between different types of questions (e.g. intervention, prognosis, harm, and cost-effectiveness).					
24	Conduct online searches (using databases and Web search engines).					
25	relate research finding to my clinical practice and point out similarities and differences					
26	Use check list to assess research articles.					
27	Read a research report and have a general notion about its strength and weaknesses					
28	Apply an intervention based on the most applicable evidence.					
29	Evaluate the application of intervention and identify areas of improvement.					

I am not able to do evidence based practice because of:

NO	ITEM	STRONGLY DISAGREE	DISAGREE	UNDECIDED	AGREE	STRONGLY AGREE
30	Inadequate understanding of research terms used in research articles.					
31	Inability to understand statistical terms used in research articles					
32	Difficulty in judging the quality of research papers and reports.					
33	Inability to properly interpret the results of research studies.					
34	Difficulty in determining the applicability of research findings.					
35	Inability to implement recommendations of research studies into clinical practice.					
36	Difficulty in finding time at work place to search for and read research articles and reports.					
37	Insufficient time at work place to implement changes in their current practice					
38	Insufficient resources (e.g. equipment, materials) to implement EBP.					

