

**BARRIERS TO IMPLEMENTATION OF EVIDENCE-BASED PRACTICES IN A
CRITICAL CARE UNIT**

BY

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DEDICATION

Research without practice is like building castles in the air

Practice without research is like treading on slippery ground

Author: Unknown

I dedicate this research study to those who have awakened and inspired my passion for critical care nursing.

To the critically ill patients in a critical care unit, my sincerest hope for you is that you receive care that is based on the latest evidence-based practices by professional nurses who strive for excellence by conscientiously delivering the best care possible to you consistently.

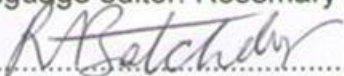
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First and foremost I thank God, the Almighty, for providing me with this opportunity and granting me the capability to complete this research study. I thank HIM for the guidance, perseverance and wisdom HE has given me throughout this endeavour.

Nothing is impossible with GOD Luke 1:37

I should like to express my immense gratitude to the following people for their support, assistance, encouragement and caring during the process of completing my research study:

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ABSTRACT

Over the last three decades there has been a greater need for health care practitioners to base their decision on the best available in order to optimise quality and cost-effective patient care. Evidence-based practice necessitates guideline development, education and review in order to achieve improved patient outcomes. However, initiatives that endeavour to disseminate and implement evidence-based practice have faced barriers and opposition. Barriers that might hamper the implementation of evidence-based practice include characteristics of the evidence itself, personal, institutional or organizational factors.

The research study explored and described the barriers to implementation of evidence-based practices in a critical care unit. Based on the data analysis, recommendations were made to enhance the implementation of evidence-based practices in the critical care unit. A quantitative, explorative, descriptive and contextual research design was used to operationalize the research objectives. The target population comprised professional nurses in the critical care unit. Non-probability sampling was used to obtain data by means of a structured self-administered questionnaire. Descriptive data analysis was applied, using a statistical programme and the aid of a statistician. The results are graphically displayed using bar graphs and tables. Recommendations for nursing practice, education and research were made. Ethical principles have been maintained throughout the study.

Keywords:

Evidence-based practice, Critical care unit, Barriers, Translation of evidence, Professional nurses, Implementation.

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CHAPTER ONE

OVERVIEW OF THE STUDY

1.1 INTRODUCTION

Critical care nursing as a specialty has been established by means of an awareness that patients with life-threatening illnesses or injuries require vigilant hemodynamic monitoring provided by nurses with in-depth advanced theoretical and practical skills (Urden, Stacy & Lough, 2008:3). The cultivation of critical care nursing as a specialty has demanded harmonious relations between nurses and technology which is constantly becoming more sophisticated. To address physiological, spiritual and psychosocial needs of patients, evidence-based interventions are required from clinicians that are empowered with expertise, knowledge and skill (Morton & Fontaine, 2009:12).

Evidence-based practice is not a new method as one would like to believe but has been a topic in medical literature for the past thirty years, when there was a movement away from ritualistic practices. In the mid-1990s there was a shift towards evidence-based medicine specifically, with a greater awareness for rendering quality patient care (Smith, James, Lorentzon & Pope, 2004:1). According to Sackett, Richardson, Richardson, Rosenberg and Haynes (2000:10), evidence-based medicine can be defined as a means of integrating the best available extrinsic clinical evidence from systematic research incorporating an individual's clinical expertise. As time passed the realization arose that evidence should be implemented in healthcare to improve patient outcomes and to provide value-laden care to patients (Clancy, Slutsky & Patton, 2004:15).

In the 1970s there was awareness that nursing practice could not rest with tradition, ritual, assumptions or trial and error. To improve the quality of patient care, practice delivered by nurses had to be guided by evidence (Gerrish, Ashworth, Lacey & Bailey, 2008: 62). Integration and implementation of evidence-based practice play an active role in the restoration or improvement of patient health. DiCenso, Guyatt and Ciliskia (2005:4) state that the nursing interventions

which have proved to be relevant and effective are derived from best research evidence. The evidence aims to increase precision, relevance and accuracy of nursing practice. The ultimate purpose of using best-evidence practices is to improve patient outcomes.

Within the healthcare environment emphasis is placed on the adherence to evidence-based practices. According to Pearson, Field and Jordan (2007:16), evidence-based practice relies on accessing the best available evidence for clinical decision-making, with the purpose of achieving global health. Hoffman, Bennet and Del Mar (2010:3) state that the best research evidence is vital but other facets are also to be considered, namely: clinical expertise, patient values or circumstances and lastly the context of the working environment. Evidence-based clinical decision-making implies that various dimensions are taken into consideration when making decisions regarding patient care. Best-evidence that has been validated by rigorous research studies assists in decision-making processes. Expertise that clinicians possess also assists in decision-making and the patient has an active role because their preferences or circumstances are also taken into account (Melnik & Fineout-Overholt, 2010:242). Evidence-based clinical decision-making is the basis for daily decisions that are influenced by best-practice guidelines that uphold good standards of care whilst remaining cost-effective (Mallik, Hall & Howard, 2009:8).

Since the nursing profession is not static, it is vital for clinicians to have access to the best research evidence with relevant rationale applied as nurses are usually the primary caregivers in rendering patient care. Since out-dated practices result in prolonged hospitalisation, increased morbidity or even mortality, nurse practitioners should use critical thinking and reflective practice skills during nursing interventions to improve practice. Insight into rationale for interventions carried out in a specific way will also ensure that evidence-based practices are sustained.

According to Craig and Smyth (2007:238), best-practice guidelines may also be helpful to professional nurses to assist in decisions about the healthcare for specific clinical conditions. Best-practice guidelines are in existence within some

hospitals to ensure congruency in implementation of nursing skills and to ensure high standards of patient care delivery. In doing so, variances in practice are eliminated but the reality is that actual evidence or research rarely enters the clinical practice realm. Glasgow and Emmons (2007:427) state that a gap between practice and evidence still exists as there is lack of clarity in what constitutes evidence or which aspects should be implemented in practice. There should not be a reliance on randomized controlled trials only. In most randomized control trials it is not mentioned how patients could benefit from practices or what the financial implications would be for organizations in adopting evidence-based practices. Lang, Wyer and Haynes (2007:355) add that even though these challenges exist, measures should be taken to ensure that all research is disseminated and translated into clinical practice for the well being of the patients.

Clinical practitioners should be aware that certain barriers will prevent translation of evidence into the clinical practice domain. Evidence-based nursing is founded on translating research findings into clinical practice with multiple intentions, namely, to improve patient outcomes, decrease hospitals stays and improve the quality of nursing care rendered to patients. However, the translation of findings into actual practice remains a constant battle due to barriers to implementing evidence-based practices but through recognition and overcoming barriers, evidence-based practices can be realized (Kajermo, Bostrom, Thompson, Hutchinson, Estabrooks & Wallin, 2010:2). According to Grol and Grimshaw (2003:1225), inappropriate care is rendered in some instances due to tradition, ritual or trial and error. The characteristics of evidence itself may be responsible for practitioners being resistant to modify practices. When research advocates practices that are complex or require multidisciplinary collaboration then compliance tends to decrease. Attributes of evidence that encourage compliance may be: fewer new skills, concrete description of procedures, rationale for the recommendations and less impact to organizations. Barriers to implementing evidence-based practices may occur at various levels in the healthcare system: at that of the patient, the individual professional, the healthcare team, the healthcare organization or the wider environment.

In a systematic review done by Squires, Estabrooks, Gustavsson and Wallin (2011:15), an explicit link between research utilisation and individual characteristics was highlighted which may promote or hinder evidence translation. Trends that emerged reported that an individual's positive attitude towards research was a factor that would increase implementation of evidence-based practices. Positive reinforcement by attending conferences or in-service training improved the likelihood that evidence-based practices would be sustained. On an educational level an individual in possession of a graduate degree who has been exposed to research during training has an appreciation of the benefits of research. Furthermore, it was highlighted that individuals experiencing job satisfaction were more likely to adhere to evidence-based practices (Squires *et al*, 2011:15).

The above-mentioned individual characteristics have a positive influence that increases the tendency to carry over research findings into clinical practice. However, deficiencies in the characteristics may be considered to be a barrier that hinders actualisation of research recommendations. Koehn and Lehman (2007:209) imply that barriers to implementing evidence-based practices do not rest solely with an individual, as external factors may also be influential. An individual may be optimistic toward research, yet time constraints and lack of access to journal articles or best-practice guidelines present a major obstacle. Negative attitudes to evidence-based practice arise as a result of minimal exposure to evidence-based practices. Knowledge deficits of staff may include definition of evidence-based practices and difficulty in interpreting research reports or statistical analyses. Quite often nurses have difficulty in accessing journal articles, and even after gaining access there is difficulty understanding the implications for practice. Heavy workloads may prevent staff from reading journal articles during work hours and lack of support from management in promoting evidence-based practices has also proved non-conducive to implementation of evidence-based practices.

Grol and Grimshaw (2003:1226) add that patients may directly refuse treatment which is part of the patients' charter of rights, and this tends to be a barrier to

beneficial practices that may be evidence-based. With regard to the professional nurse, uncertainty and lack of competence in skills will impede research implementation; but the barrier can be overcome through in-service training programmes. On a larger scale, a barrier to implementing evidence-based practices may be the political and/or the economic climate of a country which does not have the financial resources to apply evidence-based practices to clinical settings.

A study measuring barriers to implementing EBP among 253 nurses in Finland revealed that the top barriers included were lack of awareness of evidence-based practices or the value thereof. Another factor is physicians' non-compliance with practice implementation or most research articles are published in English which is considered to be a major setback that prevents research from entering clinical practice. Language is possibly a huge barrier in countries where English is not the first official language (Oranta, Routasalo & Hupli, 2002:205). Similarly McInerney and Suleman (2009:90) conducted a study among health professionals. The 23 participants listed time constraints, inadequate resources, knowledge deficits and inadequate training on evidence-based practices were as the main barriers in the study. Lack of accesses to online journals was also identified. The study has prompted universities to re-evaluate educational programmes and incorporate evidence-based practices within the nursing curriculum at under- and post-graduate levels.

Strategies should be put into place to overcome barriers to implementing evidence-based practices which might include placing emphasis on the importance of evidence-based practices, stimulating positive attitudes towards evidence-based practices, encouraging the use of best-practice guidelines, creating an organisational culture that endorses change and providing adequate resources and teamwork within organizations (Melnyk, Fineout-Overholt, Fischbeck, Feinstein, Hong, Small, Wilcox & Kraus, 2004:190). Facilitation of evidence-based practices includes collaboration between institutions and professional associations such as the Registered Nurses' Association of Ontario (Ploeg, Davies, Edwards, Gifford & Elliot-Miller, 2007:215).

Barriers to the implementation of evidence-based practices may exist in a multitude of clinical settings such as the critical care unit. To date there are various best-practice guidelines, clinical algorithms and care bundles available in the critical care unit that pertain to the care of the critically ill patient. However, in a critical care unit in which specialised nursing care is rendered, the implementation of evidence-based practices might be hampered. The focus of this research study will thus be to explore the barriers to the implementation of evidence-based practices in a critical care unit.

1.2 PROBLEM STATEMENT

The critical care unit is dynamic and constantly evolving. On a global scale researchers are continually carrying out research studies regarding diagnosing conditions or investigating various treatment modalities. Through research studies, best-practice guidelines have been developed and are available within critical care units.

The setting in which the research study will be conducted is a 23-bed critical care unit in the private sector within the Nelson Mandela Metropole where medical, surgical, cardiothoracic or even paediatric patients may be admitted. Patients are critically ill and it is indisputable that the latest best-practice guidelines should be applied in the care of patients to reduce complications, facilitate the healing process and reduce mortality and morbidity. Within the unit there are best-practice guidelines based on evidence, for example, the Nesibopho Best-Practice guidelines (Anon, 2010) which are endorsed by the Critical Care Society of Southern Africa. The aims of the guidelines were developed to assist critical care nurses in caring for the critically ill.

The invaluable and indispensable evidence is readily available and accessible; yet professional nurses are not using the evidence to its full potential. The researcher has observed that best-practice guidelines are not consulted or are infrequently used by professional nurses in the critical care unit, indicating that the nursing care being rendered is according to ritual or tradition. Informal discussions with professional nurses in the critical care unit revealed lack of, or infrequent use of,

available best-practice guidelines. When asked how often they consulted the guidelines within the critical care unit a large proportion of the professional nurses acknowledged that they did not consult the Nesibopho Best-practice Guidelines (Anon, 2010), Best Care Always Guidelines (Anon) or journal articles. The small amount of professional nurses who did access the guidelines acknowledged that they did so infrequently. Online sources that consist of high-level evidence, such as the Joanna Briggs Institute (JBI) or Worldviews on Evidence-Based Nursing, are not accessed by the professional nurses within the unit.

The researcher noticed that professional nurses were not cognisant of the impact of non-adherence to evidence-based practices. To illustrate another example, the instillation of saline during suctioning is not recommended as per evidence', yet it is still practised by professional nurses in the critical care unit in accordance with ritual practices. A study done by Jordan, van Rooyen and Venter (2012:13) in the critical care units of the public and private health-care sector in the Nelson Mandela Metropole revealed that the majority of the professional nurses (80-85%) based their clinical decision-making on tradition, what they had been taught in the unit or ritualistic practices. In a similar study done by Gerrish, Ashworth, Lacey and Bailey (2008:66) among 528 nurses most of them indicated that they refer to: their own personal experience when caring for patients, they will also seek information from colleagues, use information that they gained from their training or even information from textbooks. Consulting best-practice guidelines or journal articles were the least accessed sources by participants.

The study therefore highlights the lack of evidence-based practice implementation in clinical practice. The researcher observed that professional nurses in the unit also referred to textbooks, expert opinion or used their previous experience in caring for the critically ill. The fact that best-practice guidelines are available, but not accessed, that research reports are not read or that professional nurses in a critical care unit use traditional or ritualistic practices is of concern to the researcher. The conclusion has prompted the researcher to explore the barriers to implementation of evidence-based practices in a critical care unit.

1.3 PURPOSE OF THE STUDY

The purpose of the intended study is to explore and describe the barriers to implementation of evidence-based practices and make recommendations to enhance the implementation of evidence-based practices in a critical care unit.

1.4 RESEARCH QUESTION

The research question is as follows:

“What are the barriers to the implementation of evidence-based practices in a critical care unit?”

1.5 RESEARCH OBJECTIVES

The objectives of the study are as follows:

- to explore and describe the barriers to the implementation of evidence-based practices in a critical care unit, and
- to make recommendations to enhance the implementation of evidence-based practices in the critical care unit.

1.6 CONCEPT CLARIFICATION

The following is a description of the core concepts applicable to the research study.

1.6.1 PROFESSIONAL NURSE

A professional nurse is a person who is registered with the South African Nursing Council as a nurse/or midwife who has acquired specific qualifications and has the capacity to deliver holistic nursing care independently and competently (The Nursing Act, No. 33 of 2005:39). The research population will comprise professional nurses who either have experience or hold an additional qualification in critical care nursing.

1.6.2 CRITICAL CARE UNIT

A critical care unit is a dynamic, unique and constantly evolving environment, a fundamental aspect of which is preservation of life by means of life-sustaining equipment, medication and the rendering of essential nursing care. Jacoby and Youngson (2005:440) state that a critical care unit is a specialized and highly technological environment in which care is rendered to patients with life-threatening emergencies, injuries or illnesses. The research study will be conducted in a critical care unit with a diverse patient population, comprising medical and surgical cases, with both adult and paediatric patients.

1.6.3 BEST-PRACTICE GUIDELINES

Best-practice guidelines assist healthcare professionals and patients in decision-making about appropriate healthcare with the guidance of systematically developed statements in caring for patients (Jo Brown, 2009:230). The critical care unit where the study will take place has best-practice guidelines pertaining to the care of the critically ill patient such as the Nesibopho best-practice guidelines (Anon, 2010) or the Best Care Always guidelines (Anon).

1.6.4 EVIDENCE-BASED PRACTICE

Evidence-based practices (EBP) imply usage of the best research evidence to support decisions in clinical practice, therefore improving patient outcomes (Burns & Grove, 2009:26). Courtney and McCutcheon (2010:4) add that the most quoted definition of evidence-based practice that has been derived from Sackett *et al* (2000:10) which states that evidence-based practice incorporates the integration of the best research evidence while taking patients' preferences into account as well as the clinical expertise of the practitioner. The practice differs from traditional views as it relies on substantiated proof which highlights why a particular practice is deemed the best. An example of a best-practice guideline, for instance, is the application of a guideline such as the Surviving Sepsis Campaign Guidelines by Dellinger, Levy, Carlet, Bion, Parker, Jaescke, Reinhart, Angus, Brun-Buisson, Beale, Dhainaut, Gerlach, Harvey, Marini, Marshall, Ranieri, Ramsay, Sevransky, Thompson, Townsend, Vender, Zimmerman and Vincent (2008:20) based on

high-level evidence from randomized control trials that highlight recommendations and the rationale for managing patients with sepsis or septic shock.

1.6.5 BARRIERS

A barrier is defined as an obstacle, fence and/or prevention of access (Trayler, 2007:73). Barriers to implementation of evidence-based practices include: lack of knowledge or skills, absence of organisational support, language barriers, lack of physician support or lack of time (Morton & Fontaine, 2009:5). The intended research study will explore various barriers to the implementation of evidence-based practices in the critical care unit.

1.6.6 KNOWLEDGE TRANSLATION

Knowledge translation involves transferring high quality evidence from research into clinical practice (Lang, Wyer & Haynes, 2007:355). The intended research study will explore what the barriers are preventing transference of evidence to practice within the critical care unit.

1.7 RESEARCH DESIGN

The research design is a blueprint of how the research study will be carried out (Stommel & Willis, 2004:33). According to Creswell and Plano Clark (2007:58), research designs are techniques for collecting, analysing and interpreting data in research studies. The research design for this study will be quantitative, explorative, descriptive and contextual in nature.

1.7.1 QUANTITATIVE RESEARCH

The emphasis of quantitative research is on statistics, variables, and relationships between variables. Qualitative research, on the other hand, is focused on experiences and emotions of participants. Neuman in (De Vos, Strydom, Fouché & Delpont, 2005:133) explain that quantitative research encompasses experiments and surveys. Walsh (2001:7) argues that quantitative research involves an inquiry into numerical patterns and relationships. Phelps, Fisher and Ellis (2007:217) add that quantifiable data can be measured in numerical terms. Therefore in essence

quantitative research is unique in its measuring aspect. The research study will be quantitative as it will be numerical in nature to explore variables related to the barriers to implementation of evidence-based practices in the critical care unit.

1.7.2 EXPLORATORY STUDY

Kraemer and Thiemann (in Burns & Grove, 2009:359) explain that an exploratory study aims to improve the knowledge base of a particular study and is not meant to generalize to populations. Walsh (2001:6) adds that an explorative research study aims to investigate the possibilities of undertaking a research study. The researcher intends to explore the barriers to the implementation of evidence-based practices within the critical care unit.

1.7.3 DESCRIPTIVE STUDY

A descriptive study has a primary function which is to describe a specific research area. Other possible reasons to pursue descriptive studies may be to identify shortcomings within current practice, theory and development or to determine what others are doing in similar situations (Burns & Grove, 2009:237). According to Kumar (in Walsh, 2001:5), descriptive research provides a graphical representation of a problem, situation or practical dilemma. The study will aim to describe the barriers to the implementation of evidence-based practices in a critical care unit.

1.7.4 CONTEXTUAL STUDY

Information which describes a situation and is closely affiliated to the research question is contextual (Tappen, 2011:94). Comprehension of individuals can be achieved by exploring their context which is body, world and the environment (Burns & Grove, 2009:732). According to Holloway and Wheeler (2010:41), the context includes the environment and the conditions in which the study takes place. The study will take place in a critical care unit consisting of a twenty-three-bedded unit.

1.8 RESEARCH METHOD

Research methods are strategies utilized by researcher's to structure the research study and to gather, analyse and interpret information that is linked to the research objectives (Burns & Grove, 2009:13). In this section the researcher will elaborate on the method that will be used systematically for the intended research study.

1.8.1 TARGET POPULATION

Arkava and Lane (in de Vos *et al*, 2005:194) suggest that the population refers to individuals with specific characteristics. Bruce, Pope and Stanistreet (2008:133) define the population as a group of people who are of interest to the research study and to whom we wish the results of the study to be applied. Myatt (2007:54) mentions that the population refers to all possible outcomes, measurements or values about which inferences will be made. In terms of the research study the research population will encompass seventy professional nurses (N=70) within the critical care unit.

1.8.2 SAMPLING METHOD

A sampling method include constituents from the population, namely, people, behaviours and/or events that are chosen according to their ability to represent the intended research study accurately (Burns & Grove, 2009:42). A non-probability sampling method will be used in this research study.

1.8.3 DATA-COLLECTION INSTRUMENT

The data-collection instrument, which varies with each research study, is reliant on the research design that is chosen (Burns & Grove, 2009:293). The researcher will use a self-administered structured questionnaire to explore barriers to the implementation of evidence-based practices. The researcher consulted previously validated questionnaires which were then contextualized to the critical care unit. Bruce *et al* (2008:165), mention that a self-completed questionnaire avoids interviewer bias, so participants can express their opinions whilst remaining anonymous.

1.8.4 DATA-COLLECTION METHOD

Burns and Grove (2009:43) state that data-collection is a specific, systematic way of acquiring information pertaining to objectives of the research study. Data will be collected by means of a structured questionnaire. Prior to data-collection, permission will be obtained from hospital management where the research study will be conducted. All participants will be obliged to sign a written consent form.

1.8.5 PILOT STUDY

The goal of a pilot study is to test the research approach and to recognize potential difficulties that may affect the validity of research findings (Blessing & Chakrabarti, 2009:114). It is essential that a pilot study be conducted before any attempt is made to initiate the main study. When a pilot study is undertaken it is crucial that the research design is adhered to. A pilot study provides a testing ground for data-collection instruments, sample and method of data analysis so that any potential pitfalls will be corrected or modified (Offready & Vickers, 2010:85).

A pilot study, using two participants within the critical care unit of the chosen hospital, will be done before the main study is carried out. The participants will be given a questionnaire which they will be able to complete before the end of their shift.

1.8.6 DATA ANALYSIS

Data analysis is a systematic method of making sense of data. In quantitative research data is usually numerical; therefore responses have to be analysed with the assistance of a statistician (Walsh, 2001:79). Data preparation and data cleaning is one of the most important constituents in the data-analysis process.

According to Hek, Judd, Moule and Goodman (2003:91), descriptive statistics can be applied to describe the results whereas with inferential statistics the researcher attempts to link the relationship between two variables. A statistician employed at the Nelson Mandela Metropolitan University will assist with the data capturing and

analysis. Each potential answer will be coded through a statistical programme, namely, Statistica version 10 to draw conclusions about research. Once data is analysed and interpreted, it may be represented graphically via bar charts, histograms, frequency polygon, pie charts, and pictograms (de Vos *et al*, 2005:222).

1.9 QUALITY OF THE RESEARCH STUDY

The quality of the research study is of utmost importance or research findings may be rendered worthless. Reliability and validity are two tools that are crucial for any research study.

1.10 ETHICAL CONSIDERATIONS

Babbie (2001:470) states that ethics are based on principles that deal with what is right or wrong and to serve as guidance for the researcher. The ethical principles in this research study include informed consent, anonymity, confidentiality and privacy.

1.11 DISSEMINATION OF RESULTS

Dissemination of nursing research is crucial to developing the use of science in nursing (Burns & Grove, 2009:338). A goal of research is to improve clinical practice and to enlighten clinical practitioners of findings. Once the study is completed and research findings are obtained a copy will be kept in the library at the Nelson Mandela Metropolitan University. The unit manager of the critical care unit will also be given a copy. Results of findings will be disseminated to professional nurses through in-service training, workshops, conferences and a peer-reviewed journal manuscript.

1.12 DELINEATION OF THE STUDY

The research study will be divided into the following chapters.

Chapter One: Overview of the study

An introduction to the study, research question, problem statement, research design and methodology will be clearly stated.

Chapter Two: Literature Review

The literature review consists of factual information pertaining to the research question and questionnaire.

Chapter Three: Research design and method

The research design and method will be discussed in the chapter.

Chapter Four: Data analysis and discussion of findings

Data will be collected via a questionnaire and data analysis will be presented and discussed in this chapter.

Chapter Five: Conclusions, limitations and recommendations

A conclusion of the research study and possible recommendations, research and education opportunities will be discussed.

1.13 SUMMARY OF THE CHAPTER

Evidence-based practices are imperative in providing rationale and recommendations of the best possible treatment for patients resulting in improved patient outcomes and decreased complications. Evidence is substantiated through concrete research findings from studies that comply with standards of validity and reliability. Recognition of the barriers to implementing evidence-based practices is crucial within any health institution. Identifying barriers can assist in determining which facilitators may encourage implementing and sustaining evidence-based practices. This study will explore and describe the barriers to implementation of evidence-based practices in a critical care unit. The following chapter consists of a narrative literature review pertaining to the topic.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

Chapter One provided an introduction and overview of the study. Ritualistic practices are frequently based on out-dated interventions that do not enhance the goal of achieving optimal health. Evidence-based practices on the other hand use the integration of the best research evidence in the care of patients. This research study therefore aims to identify the barriers to the implementation of evidence-based practices in a critical care unit. A literature review encompasses reading, analysing, writing and synthesis of scientific literature about a specific topic that is being reviewed (Garrard, 2011:4). The three main intentions of a literature review include:

- discovering what is already known about the topic;
- identifying gaps in established knowledge, and
- determining how a proposed study will contribute to knowledge (Oerman & Hays, 2010:47).

The literature review of the research study will explore the concept known as evidence-based practice, as well as the barriers to implementation of evidence-based practice.

2.2 LITERATURE SEARCHING PROCESS

The section comprises methods applied to access scientific and high-quality literature. Searching for literature should not be haphazard but should be systematic and thorough to ensure that the various dimensions of a topic are unravelled. As a point of departure, the Nelson Mandela Metropolitan University library was consulted for textbooks on evidence-based practices. Several textbooks have proved to be useful in shedding light on the topic. However, textbooks have the limitation of not being current as they are written a while before being published; therefore journals are a preferred source as they are constantly

being updated.

Search engines such as EBSCO host, EMBASE, CINAHL, PubMed, MEDLINE, Sage and Biomed Central that are available on the Nelson Mandela Metropolitan University library database were accessed. Journals that were accessed included, World-views on Evidence-based Nursing, International Journal of Evidence-based Healthcare and Evidence-based Nursing that are specific to the topic of evidence-based practices. Google Scholar, which consists of scientific articles, was also utilized by the researcher. Nursing organizations such as the Registered Nurses Association of Ontario (RNAO) and Joanna Briggs Institute (JBI) that have local or global incentives to steer evidence-based practices were also explored in this section.

In relation to the research topic, namely barriers to the implementation of evidence-based practices in a critical care unit, certain search strategies were used. Inclusion criteria were that only articles written in English were included in the research study.

Search terms that were used in the research study during the literature review process are as follows:

- **Boolean logic operators:** linking words that are used were AND, OR, NOT. For example, "Barriers" "OR" "facilitators" of "evidence-based practices" or "facilitators" "NOT" "barriers of evidence-based practices" or "Nurses" "AND" "evidence-based practices" were used to seek information.
- **Truncation:** is a short-cut device to save time, so that all the different variations of a word do not have to be typed as part of the search strategy. It works by finding the beginning of a word with a different ending on it. A "*" or "\$" is usually used. For example, evid* or Facilitat* evidence-based practices.
- **Phrase searching:** will search for phrases. For example, "evidence-based practices in the critical care unit" will yield more results than if "evidence" and "practices" were searched separately.
- **Free text searching:** words and phrases are typed in and the database will

search the abstract, title or author that matches the word. For example, “Time as a barrier to implementation of evidence-based practice” was a search strategy that was used.

- **Pearl grow technique:** At the end of a journal article the reference list can be advantageous by clicking on the author or title allowing the researcher access to the original article (Craig & Smyth, 2007:56). The technique was used in the research study whereby the reference list at the end of a journal article was checked, references that were underlined with links and pertained to the research study was accessed by clicking on the reference which led to the original article.

2.3 IMPLEMENTATION OF EVIDENCE-BASED PRACTICES

According to Van Achterberg, Schoonhoven and Grol (2008:302), implementation refers to the introduction of innovations into daily routines. In the healthcare industry emphasis is on rendering nursing care that is evidence-based. In some nursing units best-practice guidelines are readily available; but the question arises whether they are being fully implemented. Evidence-based practices emerged as a global initiative within the healthcare sector in since 1970 onwards. The concept implies that the best evidence is supplemented by clinical expertise and patient preferences and is then applied within clinical settings. According to the Institute of Medicine (IOM), evidence-based practices are vital in clinical decision-making processes and are estimated to support 90% of clinical decisions by the year 2020 (Smith & Donze, 2010:61).

Spear (2006:52) adds that evidence-based practices promote quality care through integrating the latest and best research evidence. However, regardless of the vast amount of available research evidence worldwide, the gap between research and practice is evident resulting in a failure of knowledge translation. Knowledge translation involves translating evidence into practice. Failure in knowledge translation results in health care workers basing care on non-scientific practices, such as ritual or tradition which may be harmful to patients (Kent, Hutchinson, Bioeth, Fineout-Overholt & Williamson, 2009:246). Statistically, there is a 15-to-20 year lag before new evidence is integrated into routine nursing care due to various

barriers that may be present in clinical practice (Helfrich, Blevins, Smith, Sales, 2011:76).

Textbox 2.1 illustrates items for discussion in the section with regard to implementation of evidence-based practices.

Textbox 2.1: Items for discussion on implementation of evidence-based practices

2.3 IMPLEMENTATION OF EVIDENCE-BASED PRACTICES

- 2.3.1 Historical overview of evidence-based practice
- 2.3.2 Familiarity with evidence-based practices
- 2.3.3 The concept “evidence-based practice”
- 2.3.4 Clinical decision related to evidence-based practice
- 2.3.5 Nursing practice and clinical decision making
- 2.3.6 Accessing online evidence-based resources
- 2.3.7 Hierarchy of evidence
- 2.3.8 Factors influencing implementation of evidence-based practices
- 2.3.9 Summary of the section

2.3.1 HISTORICAL OVERVIEW OF EVIDENCE-BASED PRACTICE

The evidence-based movement arose in the 1970's when Professor Archie Cochrane, a British epidemiologist, criticized the medical profession for not using evidence to guide practice. He believed that the only valid form of evidence was based on randomized control trials (RCTs), which he considered as the gold standard for guiding practice. Randomized control trials refer to using experimental designs to test the effectiveness of interventions. The medical profession supported Professor Cochrane's beliefs by the promulgation of the Cochrane Collaboration which was established in 1993, producing systematic reviews on a wide array of topics within clinical practice (Barker, 2010:6).

Concurrently, nursing innovators realized that nursing practice needed to be substantiated through evidence that would improve patient outcomes. There was also an awareness that a research-practice gap existed within the nursing

profession and practices were ritualistic or based on tradition. Attempts to bridge the gap occurred, and then in 1993 the National Institute of Nursing Research (NINR) was established to enable professional nurses to conduct research. Electronic databases such as CINAHL were founded in 1995 allowing professional nurses access to nursing studies that were conducted globally. In the 1990's research utilisation incorporated models such as the Iowa Model of nursing utilisation and the Stetler model for research utilisation that translated research into practice. Currently, challenges still exist due to barriers to the implementation of evidence-based practices (Schmidt & Brown, 2009:22).

From the above inferences it may be concluded that the nursing profession has evolved tremendously from that point onwards with establishment of organizations such as the Registered Nurses Association of Ontario (RNAO), the Joanna Briggs Institute (JBI), the Cochrane Collaboration, the National Guideline Clearinghouse have best-practice guidelines specifically developed for guiding professional nurses in rendering patient care.

2.3.2 FAMILIARITY WITH EVIDENCE-BASED PRACTICE

The integration of evidence into practice is endorsed globally, yet the reality hindering translation into clinical practice may be due to professional nurses being unfamiliar with the concept of evidence-based practices. Contributing factors responsible for the unfamiliarity may arise from nursing colleges or tertiary institutions omitting evidence-based practices in the curriculum. An aspect which may be daunting for professional nurses is the lingering confusion between terminology such as research, evidence or evidence-based practices; and the perplexity increases when professional nurses work in an organization that does not value evidence-based practices (Spear, 2006:52).

A survey conducted in 2004 in a 436-bed hospital in Chicago explored nurses' familiarity with evidence-based practices. A sample of 162 professional nurses participated in the research study. A total of 58% indicated that they subscribed to nursing journals. Of the participants 30% revealed that they had previous experience with participating in research projects. A large proportion of

participants were familiar with evidence-based practices through previous exposure to the terminology and research-driven projects (Bevan & Pelosi-Kelly, 2006:72). In a survey that was conducted by Koehn and Lehman (2007:214), 24% of participants had never heard the term “evidence-based practice”. A cross-sectional survey was conducted in Spain with a sample of 917 nurses to explore barriers to research implementation. Findings from the survey described 75% of participants as not having the skills to judge the quality of research articles. In relation to this, 73% of the participants agreed that they had not been granted the authority to change practices in the clinical setting. Perhaps the rationale for the perceptions is because 70% of participants stated that they were unaware of evidence-based practices (Moreno-Casbas, Fuentelsaz-Gallego, de Miguel, Gonzales-Maria & Clarke, 2011:1936).

Many critical care nurses are unaware of current evidence-based practices guidelines for specific disease processes which lead to professional nurses rendering care based on intuition and tradition (Chester, 2007:106). In an American study 121 nurses participated in a cross-sectional survey to assess readiness of implementing evidence-based practices. The data-collection instrument was a 64-item Nurses’ Readiness for Evidence-based Practice Survey. Findings of the study indicated that recently graduated nurses or those with post-graduate qualifications were more aware of the concept evidence-based practice in comparison to their colleagues who worked in clinical practice (Thiel, 2008:182). From the above one may deduce that evidence-based practice is not yet a global phenomenon. Inconsistencies in familiarity with evidence-based practices may directly relate to the context which should be taken into account as nursing curriculum and organizations may be diverse across continents, not providing some professional nurses with exposure to evidence-based practice. In critical care units where the critically ill are compromised, it is imperative that professional nurses are aware of evidence-based practice so as to provide the best care possible.

2.3.3 THE CONCEPT “EVIDENCE-BASED PRACTICE”

An escalation in health expenditure coupled with variations in practices and a vast amount of literature have promulgated the development of evidence-based practices (Salmond, 2007:114). Evidence is defined as a systematic body of knowledge that supports actions or beliefs (Barker, 2010:143). The definition of evidence-based practice by Sackett *et al* (2000:10) is consistently described and referred to throughout evidence-based practice literature. Evidence-based practice refers to the integration of the best research evidence that is incorporated with clinical expertise of the practitioner whilst taking patients' preferences and values into account. The best research evidence implies rigorous high-quality study findings: quantitative, qualitative, intervention or outcomes-based research is used to address a clinical problem. Clinical expertise is the practical skills and theoretical knowledge that a professional nurse has acquired through experience in caring for patients, formal training, or through literature that has been accessed. Patients' preferences or values are the cultural preferences, values, beliefs that make an individual unique (Craig & Smyth, 2007:9).

In Figure 2.1 terms known as “evidence-based practice” have three constituents: namely, clinical expertise, patients' needs and values and the best research evidence. Evidence-based practice is invaluable as it does not rest or rely solely on the best research evidence, but takes patients values and preferences into account. For implementation and sustainability of evidence-based practice to be successful the patient's co-operation is a crucial facet that needs to be considered. Respect is also given to the clinical expertise of the professional nurse, who can use previous experience obtained from caring for patients, knowledge and skills obtained during training (Burns & Grove, 2009:11).

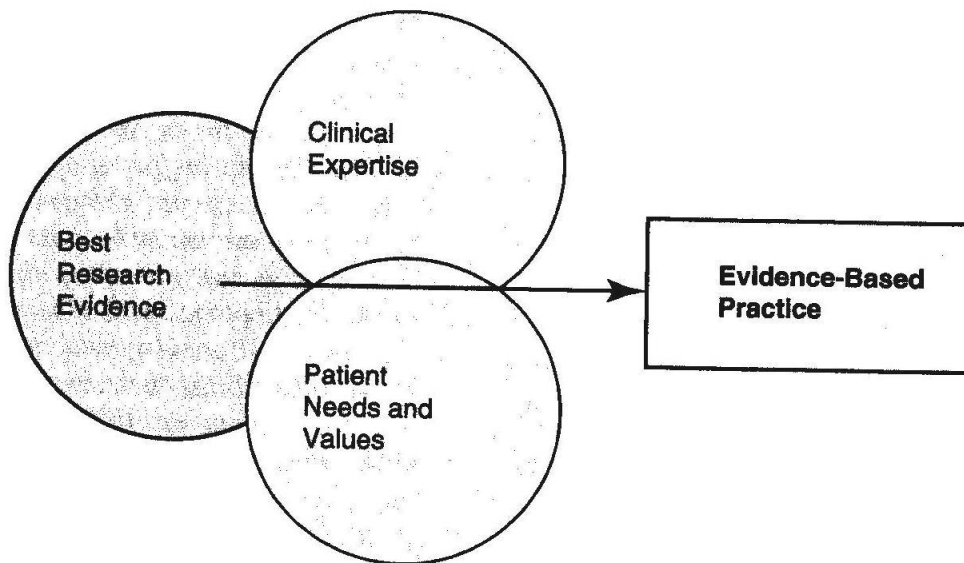


Figure 2.1: Model of evidence-based practice

Source: (Burns and Grove, 2009:11)

An inference made from the above is that the integration of these components will ensure that the critically ill patient receives care according to the best and latest evidence. The clinical expertise of professional nurses is also a component of evidence-based practice that is taken into consideration in caring for the critically ill. The preferences of patients are also respected.

2.3.4 CLINICAL DECISION-MAKING RELATED TO EVIDENCE-BASED PRACTICES

Kent *et al* (2009:246) observed that professional nurses usually based clinical decision-making on sources not founded on evidence. Decisions are frequently based on knowledge from textbooks, information learned during training, personal experience or intuition (Penz & Bassendowski, 2006:251). According to DiCenso *et al* (2005:4) clinical decision-making should be evidence-based which is only possible when the best research evidence is integrated with contextualization of the clinical state, clinical setting and circumstances at that time.

In Figure 2.2 the evidence-based clinical decision-making model comprises four constituents, namely the clinical setting, the patient preferences, research evidence, healthcare resources and clinical expertise. The evidence-based clinical decision-making incorporates the best research when making clinical decisions about the care of patients.

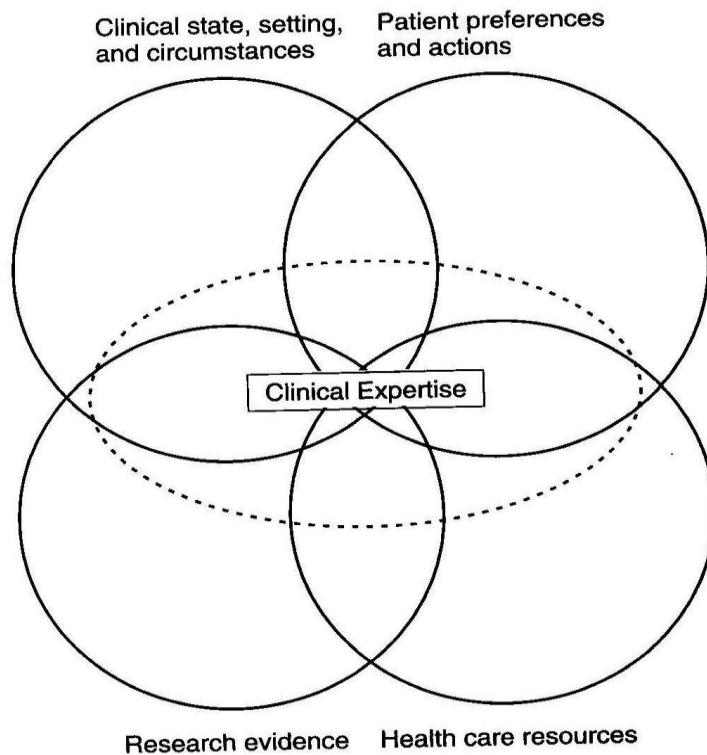


Figure 2.2: Evidence-based clinical decision making model

Source: (DiCenso *et al*, 2005:4)

It is quite evident that the model diverges from the typical traditional views which use knowledge from textbooks, intuition, personal experience, gut feeling, trial and error in making decisions. The evidence-based clinical decision-making model does not disregard clinical expertise but uses it in conjunction with the best evidence to make an informed decision. However, the patient's input in decision-making is vital as the patients' culture, preferences and beliefs are respected. An important aspect of the model is the realization that resources and the clinical setting also have influence upon decisions (DiCenso *et al*, 2005:4).

From the above conclusions it can be observed that the model can be applied in the critical care unit. For instance, the research evidence may refer to a best-practice guideline such as the Registered Nurses' Association of Ontario (RNAO). The clinical setting may refer to the critical care unit where the evidence-based practices are being implemented. If critically ill patients are alert and oriented, they can play an active role in decision making processes. The clinical expertise refers to the skills of the professional nurse in the critical care unit. The healthcare resources imply all the equipment or supplies needed in the critical care unit to enable implementation of evidence-based practices.

2.3.5 NURSING PRACTICE AND CLINICAL DECISION-MAKING

Rolfe, Segrott and Jordan (2008:440) performed a survey to ascertain nurses' understanding of evidence-based practices. A cross-sectional survey was done with a sample of 218 participants from a National Health Services (NHS) trust hospital in the UK. The findings were as follows: 69% stated that using their own personal experience in caring for patients; 49% indicated that they consulted best-practice guidelines occasionally; 82% participants stated they would use their intuition to guide them and of the 218 participants 43% stated that they never used the Cochrane database.

Thiel (2008:186) conducted a survey to determine professional nurses' readiness for evidence-based practice. A descriptive cross-sectional survey design was used, with a sample of 121 professional nurses in an acute care hospital in Midwestern United States. Results from the study that were significant revealed that 39% accessed information on a weekly basis to guide decision making whilst 25% accessed information several times a week to assist them in caring for patients. Of the participants 60% stated that they frequently asked their colleagues or peers when seeking information.

A similar survey was conducted by Pravikoff, Tanner and Pierce (2005: 41) in a descriptive, exploratory survey with a sample of 1097 professional nurses who completed a questionnaire. In response to the frequency in searching for information 27% accessed information occasionally; and 12% accessed

information less frequently than once a month. When seeking information 52% indicated that they frequently referred to their colleagues versus 43% who indicated they frequently referred to journal articles when seeking information.

From the above conclusions it can be observed that intuition and personal experience are ranked higher than evidence-based practices to guide clinical decision-making processes in the above-mentioned studies. This is concerning as intuition and personal experience are not scientific. In the critical care unit it is preferable to use evidence-based practices.

2.3.6 ACCESSING ONLINE EVIDENCE-BASED SOURCES

There are available online resources that contain peer-review journal articles or best practice guidelines that will be mentioned in this section.

The *Cumulative Index to Nursing and Allied Health Literature (CINAHL)* database contains 1200 journals that are regularly indexed and also provide access to theses, books, conference proceedings or educational software (Booth & Brice, 2004:36).

The *Evidence-based Nursing* journal which is published on a quarterly basis has articles that are critically appraised with abstracts, commentaries or editorials that give the full text of the original article.

The Cochrane Collaboration is an international organization that has high-quality systematic reviews on an array of healthcare interventions. One of the sub-sections is *The Cochrane Library* that contains systematic reviews of randomized control trials that is updated quarterly and assists clinicians in addressing clinical questions. *PubMed* is an online bibliographic database which contains an advanced search engine that assists the user with search terms. Other features include a clinical queries section that enables users to locate studies that have a robust research methodology. An added benefit consists of a systematic review filter that has the ability to retrieve systematic review not only in the PubMed database but also in the Cochrane database. *MEDLINE* is a very large database that has 12 million citations from 4600 life sciences journals. To obtain the highest

level of evidence methodology filters to subject terms have to be applied (DiCenso *et al*, 2005:34).

Worldviews on Evidence-based Nursing, which is published quarterly, focuses on bridging the research practice gap. Journal articles focus on knowledge synthesis, education and management .Emphasis is given to current evidence-based nursing issues.

International Journal of Evidence-based Healthcare publishes systematic reviews, and journal articles focus on evidence translation, evidence synthesis and utilisation from the Joanna Briggs Institute (Salmond, 2007:120).

The Joanna Briggs Institute was established in 1996, currently has an international collaboration of 500 researchers in 31 countries and provides a database of evidence summaries on healthcare interventions. The summaries consist of care bundles that propose recommendations for practice that are intended for nurses. Another component is best-practice information sheets that are summaries of systematic reviews.

The National Guideline Clearinghouse is a database with an array of best-practice guidelines on various healthcare topics. The guidelines may be helpful but should be assessed for suitability to the local context.

Google and *Wikipedia* are popular search engines that should be avoided when searching for scientific literature or evidence based-practices, because they lack quality control; information may be derived from unreliable or irrelevant sources and should therefore not be used at all (Courtney & McCutcheon, 2010:7).

Sigma Theta Tau International (STTI) is an international organization which develops and disseminates evidence-based practices through research and education. The organization also recognizes and awards nurses for excellence in evidence-based practices (Schmidt & Brown, 2009:41).

The Registered Nurses Association of Ontario (RNAO) can be accessed on the site (www.rnao.org). The organization, which is funded by the government of Ontario, has 30 000 members. The main purpose of the organization is to create, monitor and disseminate best-practice guidelines. Currently the 38 best-practice guidelines are an array of topics ranging from oral care to a healthy work environment, topics that are aimed toward empowering nurses. The guidelines are structured to reduce variations in practice and to bridge the research-practice gap. The RNAO developed an implementation toolkit to identify factors influencing evidence uptake, to assess organisational readiness and to identify stakeholders who could be influential in adoption of evidence-based practices. The organization created an implementation plan that describes potential barriers and facilitators with a core focus on sustainability of evidence-based practices.

From the above one may conclude that there may be some online resources that are not of high quality. Critical care nurses who search for information should receive training which should involve recognition of scientific, valid and reliable journal articles or best-practice guidelines.

2.3.7 HIERARCHY OF EVIDENCE

Salmond (2007:119) emphasizes that not all research should be regarded as evidence. Professional nurses in clinical practice must have the ability to grade evidence according to the level of quality.

Figure 2.3 illustrates the hierarchy of evidence. Bias from the researcher increases as each level descends. The most robust forms of evidence are in the form of evidence-based guidelines or systematic reviews which are at the peak of the pyramid. The hierarchy of evidence decreases with single randomized controls, cohort studies, case controlled studies and qualitative studies (Salmond, 2007:119).

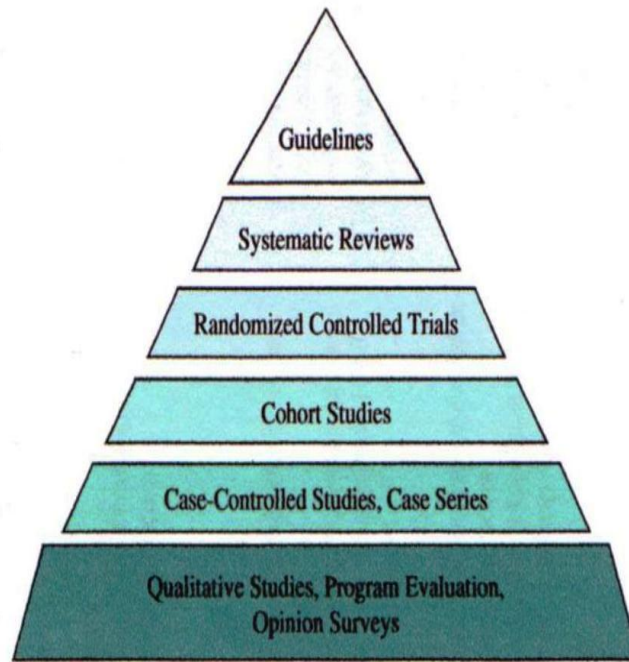


Figure 2.3: Pyramid of evidence

Source: (Salmond, 2007:119)

Best-practice guidelines which are based on scientific literature, document processes of how information was obtained and grade quality of evidence in guiding clinical recommendations. The National Guideline Clearinghouse and the U.S. Preventative Task Force have a host of guidelines on their database that fall into this category according to the hierarchy of evidence (Salmond, 2007:119).

Systematic reviews encompass a review of primary studies on a topic. A researcher searches for applicable articles to a topic, then only high-quality articles are selected after an appraisal process whereby findings are interpreted and summaries of the best available evidence is supplied. Internationally recognized databases are The Cochrane Databases of Systematic Reviews or (TRIP) Turning Research into Practice (Salmond, 2007:119).

Randomized Controlled Trials (RCT's) is the most scientific form of evidence for intervention studies. Bias is obliterated in RCT's as treatments are allocated in a random method to subjects (Salmond, 2007:119).

With *Cohort studies* two groups of patients are formed and studies are observational and longitudinal. Segregation comes into place when one group receives a treatment and the other group forfeits the treatment. The groups are then monitored over a time period to determine the outcomes (Salmond, 2007:119).

Case control studies are concerned with patients who have a specific condition and are compared with a group without the pre-existing condition. The risk for bias increases as there is no anonymity and documentation is accessed (Salmond, 2007:119).

Qualitative studies explore perceptions through interviews, observation, focus groups or document analysis (Salmond, 2007:121).

2.3.8 FACTORS INFLUENCING THE IMPLEMENTATION OF EVIDENCE-BASED PRACTICES

Barriers and facilitators to evidence-based practices may occur at the individual, organisational or environmental level. Factors determining implementation at an individual level are the attitudes towards evidence-based practices. For instance, if staff has a positive attitudes toward evidence-based practice then this will promote implementation. Negative attitudes towards evidence-based practices on the other hand will result in staff being resistant to implementing evidence-based practices. The implementation of evidence-based practices is influenced by the organisational culture which is dependent on leadership, evidence-based practices, champions and teamwork. Another factor that determines adoption of evidence-based practices is the support from the larger scale environment (Ploeg *et al*, 2007:213)

Figure 2.4 indicates the factors that influence implementation of evidence-based practices within nursing units that may occur at the individual, organisational or environmental level. The figure clearly highlights which whether certain elements will promote or hinder evidence-based practice.

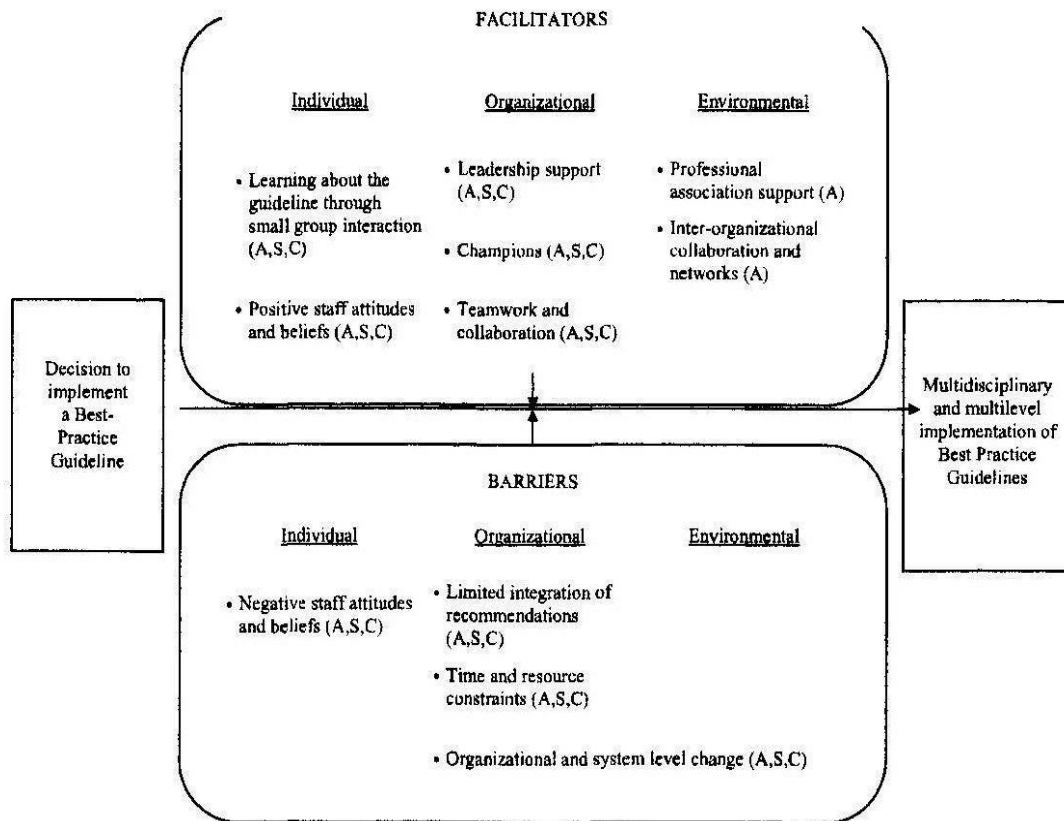


Figure 2.4: Factors influencing implementation of evidence-based practices

Source: (Ploeg *et al*, 2007:213)

From the above it may be concluded that there are factors which may be a barrier or promote evidence-based practices in the critical care unit. In the following sections barriers and facilitators that may inhibit implementation of evidence-based practices will be discussed. Organizations must take cognisance of these factors to develop strategies to enhance evidence uptake.

2.3.9 SUMMARY OF THE SECTION

Patients who enter healthcare facilities are under the assumption that they will receive the best care possible. The assumption is that practices are relevant, supported by the best evidence and will improve their outcomes. It is imperative that the latest evidence is accessed to improve patient outcomes, especially with regard to the critically ill population.

2.4 BARRIERS RELATED TO KNOWLEDGE OF THE NURSE WITH REGARD TO EVIDENCE-BASED PRACTICE

Globally nurses are the largest professional healthcare group. Their primary function is to provide the best possible care to patients by creating a safe, therapeutic environment (Parahoo 2006:12). Traditionally nursing has evolved from ritualistic practices such as folklore, gut instinct, personal error or personal preference. But over the past 30 years emphasis has been on performing interventions that are evidence-based (Urden *et al*, 2006:4). However there are barriers preventing evidence uptake that include lack of knowledge, lack of commitment by professional nurses, limited resources or resistance from within organizations (Morton & Fontaine, 2009:4). Certain predisposing conditions will create an environment that makes implementation of evidence-based practices a challenge.

Textbox 2.2 is a list of items in relation to the knowledge of the nurse with regards to evidence-based practice.

Textbox 2.2: Barriers related to knowledge of the nurse with regard to implementing evidence-based practice

- 2.4.1 Insufficient time to change to evidence-based practice
- 2.4.2 Clinical decisions are based on information gained during training as a professional nurse
- 2.4.3 Intuition and clinical decision-making
- 2.4.4 Benefits related to implementing evidence-based practices in the critical care unit
- 2.4.5 Conducting independent literature reviews
- 2.4.6 Critical reflection in the care of the critically ill patient
- 2.4.7 The value of implementing evidence-based practice
- 2.4.8 The rewards of using research findings in the care of the critically ill
- 2.4.9 Resistance to implementing evidence-based practices
- 2.4.10 Tradition/ritual outweighs evidence-based practices.
- 2.4.11 Evidence-based practices and the improvement of the quality of patient care
- 2.4.12 Evidence-based practice and daily practice in the critical care unit
- 2.4.13 Heavy workload related to evidence-based practice implementation
- 2.4.14 Lack of evidence translation into clinical practice
- 2.4.15 Summary of section

2.4.1 INSUFFICIENT TIME TO CHANGE TO EVIDENCE-BASED PRACTICE

In 2006, Sigma Theta Tau International (STTI), the Honour Society of Nursing performed an online survey with 565 professional nurses to determine barriers to implementation of evidence-based practices in the United States. The survey revealed that 69% had a low to moderate understanding of the concept “evidence-based practices”. From the participants 27% indicated that accessibility to resources was inadequate. The largest barrier to evidence-based practices that 66% of participants chose was not having time at work to search for or to analyse evidence (Alspach, 2006:11). Lai, Teng and Lee (2010:279) examined implementation of evidence-based practices by doing cross-sectional surveys using a self-administered questionnaire. The questionnaire focused on three

domains namely, confidence and understanding, attitudes and barriers to practice. The survey was completed by 144 participants of which, 92 doctors and 52 nurses from two Malaysian hospitals. Of the participants 71% of doctors stated they had done frequent searches regarding evidence-based practices in comparison to the nurses who had done almost no searches at all. Findings from the study revealed that 63% of doctors and 68% of nurses indicated that they had insufficient time to perform searches or read research reports.

From the above one may conclude that time constraints within organizations may contribute be a barrier to the implementation of evidence-based practice. Allocating time to access best-practice guidelines or searches for evidence should be granted to professional nurses in critical care units.

2.4.2 CLINICAL DECISIONS ARE BASED ON INFORMATION GAINED DURING TRAINING AS A PROFESSIONAL NURSE

Gerrish *et al* (2007:334) mention that professional nurses base their practice on information that may not be relevant; and some rely on knowledge that they received during their training as a professional nurse. According to DiCenso *et al* (2005:15), traditionally there was reliance on textbooks during training as a professional nurse. However, the limitations of textbooks are that they run the risk of promoting outdated practices within a period of time. A survey was carried out by Squires, Moralejo and LeFort (2007:17) to explore research utilisation amongst professional nurses in a Canadian Hospital with a sample of 248 professional nurses. One of the sections in the self-administered questionnaire explored the frequency in accessing sources. From the list of sources 76% of the participants revealed that they frequently used knowledge obtained from training as a professional nurse to assist them in caring for patients.

From the above one may conclude that professional nurses in the critical care unit may rely on information that they used during their training to obtain patient information and literature data. They may also apply techniques and skills that they were taught during training as a professional nurse which may be out-dated.

2.4.3 INTUITION AND CLINICAL DECISION-MAKING

Intuition is a process of arriving at a conclusion without following an analytical process (Barker, 2010:19). Traditional practices, also known as ritualistic practices, are knowledge that has been passed through the generations and is derived from books, observation or experience (Moule & Goodman, 2009:18). Schmidt and Brown (2009:5) identified trial and error as another source of practice adopted by nurses. In this instance, various approaches are applied to obtain a desired result which may in fact be hazardous to patients. Historically, the nurse's role was passive and subservient to physicians because orders were carried out without question or challenges. Currently, over the past decades nursing has grown as a profession with certification and training programmes. Nursing as the caring profession has been female dominated up till now; so the way of knowing and intuition traditionally guides practice. Adoption of evidence-based practices has not been fully embraced thus far as it is based on 'pure science' (Wall 2008:37).

Parahoo (2006:444) proposed that the purpose of evidence-based practices is to improve patient outcomes by reducing unnecessary or variations in practice, which may be the case with intuition or tradition. Practices not based on science or best evidence can be harmful towards patients or even costly. A study was conducted in Ireland by Flynn and Sinclair (2005:143) in a critical care unit with a sample of 19 professional nurses to determine if practices were followed as stipulated in evidence-based guidelines. The guideline that was implemented was endotracheal tube suctioning. Data was collected via semi-structured interviews and was transcribed verbatim. Findings indicated that professional nurses deviated from the recommendations that were clearly outlined in the guideline. One of the recommendations was that saline was no longer to be instilled into the suction catheter as it had no beneficial effect; and in fact caused complications. Despite the evidence, a large proportion of participants stated they still instilled saline for suctioning when they deemed it necessary. Their argument was that the patient secretions were thick or dry; therefore saline was necessary. Interviewees suggested that their intuition should not be dismissed when caring for patients. From the above one may conclude that when seeking medical care, patients

assume that they will receive the best quality of care. Nurses have a role act as an advocate for the best interests of the patient by providing up-to-date and relevant best practice. In the critical care unit nurses need to incorporate the best clinical evidence when making decisions regarding the vulnerable critically ill patients. Using tradition and ritualistic practices in caring for the critically ill should be avoided.

2.4.4 BENEFITS RELATED TO IMPLEMENTING EVIDENCE-BASED PRACTICES IN THE CRITICAL CARE UNIT

Kocaman, Seren, Lash, Kurt, Bhengu and Yumrumezoglu (2010:1909) performed a descriptive, cross-sectional survey involving 329 professional nurses in a Turkish Hospital to explore barriers to research utilisation. Findings from the study revealed that 72% indicated that there were minimal benefits for themselves or for patients in implementing evidence-based practices. In a study done by Brown, Wickline, Ecoff and Glaser (2009:371) to explore evidence-based practices, a descriptive, cross-sectional survey was done involving 458 nurses at a hospital in California. The data-collection instrument was a self-administered questionnaire. The findings revealed that 34% felt that there were minimal benefits for themselves or patients in implementing evidence-based practices.

2.4.5 CONDUCTING INDEPENDENT LITERATURE REVIEWS

Generally nurses do not possess the ability to search for evidence effectively. This may be a consequence of training as a professional nurse when emphasis was on rendering patient care as described in textbooks, not journal articles or best-practice guidelines. The cultures of certain organizations do not encourage professional nurses to perform literature searches, access libraries or even discuss evidence-based practices (DiCenso, *et al*, 2005:15). A cross-sectional survey to explore professional nurses' implementation of evidence-based practices was conducted with a sample of 422 professional nurses where the data-collection instrument was a self-administered questionnaire that participants had to complete. Participants had the option to add any additional comments to the questionnaire. About 25% of the professional nurses indicated that the survey prompted them to conduct literature reviews which they had not done beforehand

and critically reflect on whether best-evidence practices could be integrated into their nursing care (Koehn & Lehman, 2007:213). In a similar study by Sherriff Wallis and Chaboyer (2007: 364) where only 52% of the participants indicated that they were encouraged to perform independent literature reviews in the organization.

2.4.6 CRITICAL REFLECTION IN THE CARE OF THE CRITICALLY ILL PATIENT

Reflective practice is a process whereby an individual actively evaluates an experience and decides to modify behaviour to achieve practice that is desirable. The objectives of reflective practice are to diminish ritualistic practices, fill research practice gaps and create an awareness of patient care delivered (Barker, 2010:122). However, professional nurses are hesitant to reflect critically on their care delivered to patients (Parahoo, 2006:8).

Reflective practice should be utilized by professional nurses within the critical care unit to analyse care delivered conscientiously and strive toward rendering the best care, which can only happen with the integration of the best research evidence.

2.4.7 THE VALUE OF IMPLEMENTING EVIDENCE-BASED PRACTICE

An Iranian survey was done to understand the level of research utilisation by nurses. Data was collected from a sample of 15 nurses via one-to-one interviews. Several themes emerged from the research study that indicated nurses were pessimistic towards evidence-based practices. Professional nurses were of the opinion their practice was task oriented and evidence-based practices belonged to nursing academia, as they could not fathom the link between research and practice. The general attitudes toward evidence-based practices are that it has no value in clinical practice nor does it improve the quality of patient care (Salsali & Mehrad, 2009:8).

A similar survey was conducted by Oranta *et al* (2002:211) involving 253 professional nurses. Findings from the study indicated that 40% of the participants did not see the value of evidence-based practice. From the professional 458

professional nurses that participated in a survey in an academic centre in California 20% of the participants were of the opinion that evidence-based practices were a waste of time.

From the above one may conclude that participants in these studies do not see the value of evidence-based practices at all which is concerning. The implication of these views is that the best research evidence will not be incorporated in the care of patients.

2.4.8 THE REWARDS OF USING RESEARCH FINDINGS IN THE CARE OF THE CRITICALLY ILL

In a survey that was conducted by Oranta *et al* (2002:211) 31% of the participants revealed that there were minimal rewards for using research findings in caring for patients. A systematic review of 53 studies exploring barriers to the implementation of evidence-based practice was conducted by Kajermo *et al* (2010:35). A total of 50% of the participants from 6 out of the 53 studies indicated that the rewards for using research findings in caring for patients were minimal.

2.4.9 RESISTANCE TO IMPLEMENTING EVIDENCE-BASED PRACTICES

Brown *et al* (2009:371) carried out a cross sectional survey to explore evidence-based practices involving 458 nurses in a hospital in California. The data-collection-instrument was a self-administered questionnaire. From the results yielded 38% indicated that professional nurses were resistant to change practice or try new ideas.

In a survey done by Caldwell, Coleman, Copp, Bell and Ghazi (2007:524) a cross sectional postal questionnaire was completed by 200 participants to explore the level of engagement with evidence-based practices. The findings revealed that 48% of the participants revealed were professional nurses are resistant to implementation of evidence-based practices as a result of insufficient time. In a similar survey done by Kocaman *et al* (2010:1912) 71% of the participants indicated that professional nurses were resistant to change to implementing evidence-based practices.

2.4.10 TRADITION/RITUAL PRACTICES OUTWEIGH EVIDENCE-BASED PRACTICES

A descriptive, cross-sectional survey that was conducted by Brown *et al* (2009:381) revealed that of the 458 professional nurses that participated in the study, 30% indicated that they preferred to performing practices in a manner that is comfortable or familiar to them, rather than changing whilst 25% resented questioning about their clinical practice and 20% indicated they viewed evidence-based practice as a waste of time.

Majid, Foo, Luyt, Zhang, Theng, Chang, Moktar (2011:232) conducted a survey in Singapore with 1486 professional nurses participating in the research study to evaluate adoption of evidence-based practices. Of the participants 28% indicated that they had a neutral stance about whether they preferred tradition to evidence-based practice. In a similar survey done by Squires *et al* (2007:21), 81% of the participants indicated they frequently used their personal experience to guide them in caring for patients, 32% indicated they frequently used tradition or ritual; 47% revealed they frequently relied on their intuition; 52% indicated they frequently used practice that had worked for years; and 48% indicated they frequently accessed information from their fellow nurses.

2.4.11 EVIDENCE-BASED PRACTICES AND THE IMPROVEMENT OF THE QUALITY OF PATIENT CARE

A survey was performed by Sherriff *et al* (2007:366) to explore nurses' attitudes, knowledge and skills of evidence-based practices with 43 professional nurses who participated in the research study. The findings of the research study revealed that 82% were of the opinion that evidence-based practice improved the quality of patient care. However, in a study done by Kocaman *et al* (2010:1912) 68% of the participants indicated that research was not relevant to nursing practice while 71% indicated that patient care did not improve with evidence-based practice. Oranta *et al* (2002:211) concur by stating that 31% of the participants do not see the need for incorporating evidence-based practice into patient care.

2.4.12 EVIDENCE-BASED PRACTICES AND DAILY PRACTICE IN THE CRITICAL CARE UNIT

A descriptive and exploratory survey was conducted in an Austrian University involving 1825 professional nurses who had to complete a self-administered questionnaire. The results indicated that 32% agreed that evidence-based practice was not necessary for daily nursing practice; 53% revealed that research findings had no value in clinical practice; 55% indicated that nurses rarely used research findings in clinical practice (Breimaier, Halfens & Lohrmann, 2011:1744)

2.4.13 HEAVY WORKLOAD RELATED TO EVIDENCE-BASED PRACTICE IMPLEMENTATION

Thompson, O'Leary, Jensen, Scott-Findlay, O'Brien-Pallas and Estabrooks (2008:539) performed a research study to explore the relationship of busyness and research utilisation. "Busyness" may be defined as the individual's perception that there is a shortage of time to complete tasks. The survey was conducted in two Canadian cities using methods such as individual interviews, focus group interviews and observation. A sample of 235 nurses participated in the research study. Findings accumulated from the interviews suggested that tasks such as transfers or admissions, and shortage of professional nurses contributed to an increasingly heavy workload. Interestingly, professional nurses also commented that sitting and reading evidence-based practices would be perceived by peers, other health professionals or patients as lazy. Professional nurses indicated that management did not value activities other than giving direct patient care. An interviewee mentioned that time constraints and a heavy workload prevented nurses from rendering even essential care practices, which is a priority. Walsh (2010:26) conducted a study to determine perception of issues that affected implementation of evidence-based practices. The target sample included 88 professional nurses who participated in semi-structured interviews which revealed that most participants felt that time were the greatest barrier as well as an increased workload for nurses. Factors increasing the workload are: high acuity of patients depleted professional nurse's levels, paperwork and lack of time. Participants commented that performing searches or reading articles in relation to evidence-based practice was not a priority.

From the above one may conclude that time is closely associated to the workload as various activities have to be completed within a twelve-hour shift. Nurses who view themselves as having a heavy workload will rank implementing evidence-based practice as a low priority.

2.4.14 LACK OF EVIDENCE TRANSLATION INTO CLINICAL PRACTICE

There may be a lack of evidence translation as barriers on various levels, namely the individual, the organization or the environment (Barker, 2010:7). From the above one may conclude that each critical care unit has barriers that may hinder evidence uptake. Strategies that will increase evidence uptake have to be assessed and will be discussed later in this chapter.

Currently the challenge still exists for critical care nurses to implement research findings into clinical practice. The gap is in existence as a result of variables that have come into play, namely, a lack of awareness of evidence-based practices, poor literature searching skills and pessimistic attitudes (Sherriff *et al*, 2007:363). According to Basford and Slevin (2003:329) the gap is expanding because what is taught at nursing colleges or universities is divergent from clinical practice. The healthcare industry cannot keep up with the pace of research-generated knowledge either. Risjord (2011:264) argues that nurses contribute to the widening gap as they do not update their knowledge on a continual basis which they are professionally obliged to do. Research articles are not user-friendly because of its presentation and jargon which appears complex to readers, therefore the implications for clinical practice may be unclear for professional nurses.

2.4.15 SUMMARY OF THE SECTION

Nurses with a heavy workload will rank evidence-based practice as a low priority. Lack of appropriate searching skills will prompt nurses to use less scientific method for accessing information such as asking colleagues, reading out-dated textbooks or searching sites such as Google. Practice based on tradition, ritual, folklore or trial and error should be minimized and discouraged.

2.5 BARRIERS TO FINDING AND REVIEWING EVIDENCE

One of the barriers to implementation of evidence-based practice may arise from difficulty in finding and reviewing evidence. In Textbox 2.3 there is a list of items that will be discussed in this section.

Textbox 2.3: Barriers to finding and reviewing evidence

- 2.5.1 Locating evidence to guide clinical decision-making
- 2.5.2 Insufficient time to find and read research reports
- 2.5.3 Understanding research reports
- 2.5.4 Critical appraisal of journal articles or guidelines
- 2.5.5 Implications of research findings for practice
- 2.5.6 Access to evidence
- 2.5.7 The amount of literature pertaining to critical care is overwhelming
- 2.5.8 Publication of research reports related to critical care
- 2.5.9 The interpretation of best practice guidelines
- 2.5.10 Summary of the section

2.5.1 LOCATING EVIDENCE TO GUIDE CLINICAL DECISION-MAKING

DiCenso *et al* (2005:21) stated that the work setting might be an obstacle preventing nurses from accessing evidence. Medical libraries may be available within some organizations, whereas in others they may be non-existent. Another problem is that access to computers may not be available in some institutions. But the most reported barrier throughout literature on the barriers to the implementation of evidence-based practice is lack of time to locate or read evidence during work hours. There is an overwhelmingly large amount of research data available on online databases, journals, in conference papers, workshops or textbooks. Therefore professional nurses may find the task of searching for the latest evidence daunting. Professional nurses with inadequate searching skills may encounter information that is not credible, trustworthy or relevant to clinical practice. Research articles on search engines such as Google, Wikipedia or Yahoo are not regarded as scientifically sound (Courtney & McCutcheon, 2010:79).

Using abbreviations can prove to be troublesome at times. For instance; BNF may refer to the British National Foundation or the British National Formulary. Using an abbreviation as a search term can yield a multitude of information that is not relevant to the search topic. When using truncation in a search term, care must be

taken where it is allocated. For example, pat\$ would yield, patients, patience, patent, patio, and patch. The example demonstrates how unrelated items may appear if incorrect search techniques are applied. If search terms are not specific enough, too many articles will be produced for instance "evidence-based practices" may produce more articles than specific terms, for instance, "Facilitators of evidence-based practices within organizations"(Craig & Smyth, 2007:52).

Rosenbaum, Glenton and Cracknell (2008:1472) performed a study in the United Kingdom and Norway to explore nurses' experiences of accessing an online resource. The online resource site was the Cochrane Library which has international recognition and respect throughout the world. Thirty-two participants were selected to participate in the study. Each participant was then taken to a private, quiet room and given one hour to search for specific content on the Cochrane Library whilst all movement on the computer was being monitored.

Findings from the study proved that participants struggled to find the specific site. They attempted to access the site through Google which led to useless links. However, once the site was found, participants used the basic and not the advanced search option which made the task difficult for ascertaining relevant content. From the participants 75% could not differentiate between systematic reviews versus randomized control trials. The presentation of information on the site was not in a user-friendly form; and so most participants indicated that the site should be simplified to make searches easier and research jargon should be avoided. The opinion of participants was that the site was aimed at researchers and physicians; and the implications for practice would be difficult to determine.

Caldwell, *et al* (2007:518) conducted a cross-sectional quantitative study with a sample of 200 nurses using a structured anonymous postal questionnaire. Findings from the study indicated that 40% of participants never accessed databases such as MEDLINE and they had never received any formal training on how to conduct literature searches. In a survey done by Sherriff, *et al* (2007:366) 57 participants completed a questionnaire. Findings from the survey revealed that only 40% indicated that they had the necessary skills to perform effective literature

searches.

In a survey done by Brown *et al* (2009:371) to explore evidence-based practices a descriptive, cross-sectional survey was done involving 458 nurses at a hospital in California. The data-collection instrument was a self-administered questionnaire. The findings of the survey revealed that 48% were of the opinion that research reports were not readily available in critical care nursing units.

From the above one may deduce that professional nurses have difficulty in locating evidence. If no formal training is given on how to perform literature searches professional nurses could spend vast amounts of time yielding fruitless results.

2.5.2 INSUFFICIENT TIME TO FIND AND READ RESEARCH REPORTS

Ubbink, Vermeulen, Knops, Legemate, Rengerink, o Heineman, Roos, Fijnvandraadt, Heymans, Simons and Levi (2011:87) performed a cross-sectional survey involving 305 doctors and 396 professional nurses to explore implementation of evidence-based practices within a hospital. The results of the study revealed that 77% of nurses indicated that they had insufficient time to read research reports. Furthermore, 70% revealed that they have insufficient time in the workplace to implement evidence-based practice. In a similar study conducted by Kocaman, *et al* (2010:1912) a descriptive cross-sectional study was conducted involving 329-professional nurses who completed a questionnaire to explore barriers to research utilisation in a Turkish Hospital. Findings from the survey revealed that 85% indicated that there was insufficient time to change to evidence-based practice whilst 79% stipulated that there was insufficient time to read research reports. Oranata *et al* (2002:207) administered a questionnaire to 316 professional nurses in two Finnish Hospitals. Data derived from the participants indicated that 71% revealed that there was inadequate time to perform searches or even change to evidence-based practice.

From the above one may deduce that that time is the most noted consistent barrier to implementation of evidence-based practice.

2.5.3 UNDERSTANDING RESEARCH REPORTS

A descriptive, cross-sectional study that was conducted in a Turkish University hospital explored barriers to research utilisation involving 329 nurses. Questionnaires were the data-collection instrument. A staggering 83% of participants indicated that most of research articles were written in English, which was not their first language; therefore they had difficulty in comprehending research articles. Once again, as in most of the literature, participants mentioned that time constraints prevented them from accessing evidence. Participants also struggled to comprehend implications for clinical practice. There were 58% who indicated that the presentation of research articles was not user-friendly; statistical analyses were unfamiliar and the implications for practice were vague. From the sample 68% mentioned that research was not relevant to clinical practice. A total of 78% stated that best practice guidelines were not compiled in one place which just compounded the problem (Kocaman, *et al*, 2010:1909). In a similar study conducted by Majid, *et al* (2011:233), 1486 professional nurses in Singapore participated in the survey to determine adoption of evidence-based practices to assist with clinical decision-making. Findings from the survey revealed that 48% had difficulty in understanding statistical analyses of research reports while 46% had difficulty in understanding the terminology of research reports.

From the above it may be concluded that nurses who have no previous experience in reading journal articles or best-practice guidelines may find it difficult to determine implications for clinical practice; therefore professional nurses in the critical care unit should be exposed to read

2.5.4 CRITICAL APPRAISAL OF JOURNAL ARTICLES OR GUIDELINES

Critical appraisal is a careful assessment of the value and quality of evidence (Barker, 2010:54). Three important constituents are weighed up in evaluating evidence, namely, validity, applicability and reliability. Validity implies that results are accurate and free from bias which could affect research outcomes. Reliability represents the ability of research to be duplicated yielding the same findings. Applicability refers to the level to which evidence can be transferred to practice (Booth & Brice, 2004:106). According to Courtney and McCutcheon (2010:84)

critical appraisal is a skill that requires patience in comprehension of the design and methods of an individual study. Critical appraisal tools have been formulated to allow easier appraisal of articles. Numerous tools are available online and the UK Critical Appraisal Skills Programme and the Johanna Briggs Institute are just two that are frequently used. The Agree II instrument is used to appraise critically best-practice guidelines.

Implementation of evidence-based practices requires that professional nurses appraise evidence according to its validity and presentation. In a survey done by Coomarasamy, Latthe, Papaioannou and Publicover, Gee and Khan (2001:573) a total of 55 appraisals were done and each article was evaluated on predetermined criteria, which were a 16-item checklist with 6 domains to assess relevance, validity, and usability, attribution, currency and contact details. A score was given for each domain to determine quality of an article. Findings indicated that 22% of appraisals missed relevant articles to answer clinical questions. A randomized control trial was conducted by Taylor, Reeves, Ewings and Taylor (2004:1) to determine if critical appraisal training would improve skills. A sample of 145 participants was further divided into two groups. Seventy-eight participants received training on critical-appraisal skills whilst the other group received no form of training. About six months after the training both groups were required to do critical appraisal. However, there was not a significant difference in the skills between either group as results were similar indicating that critical appraisal training could be helpful, but if not applied regularly the information gained might be forgotten.

2.5.5 IMPLICATIONS OF RESEARCH FINDINGS FOR PRACTICE

Research reports will describe studies applied in patient populations, clinical settings and the results of studies. Quite often recommendations will be made; but what is not indicated in most research reports is how the findings should be applied in clinical practice (Burns & Grove, 2009:617). In a survey conducted by Brown *et al* (2009:380) 458 professional nurses from California participated in a cross-sectional study to explore possible barriers to the implementation of evidence-based practices. From the participants 41% indicated that the

implications of research findings were unclear for application in clinical practice. In a similar survey conducted by Oranta *et al* (2002:208) 67% of the participants reported that research reports did not elaborate on implications of research findings for clinical practice.

From the above one may conclude that research findings may be stipulated, but there are no indications about how those results should be applied in clinical practice.

2.5.6 ACCESS TO EVIDENCE

A descriptive exploratory survey was conducted in the United States to explore evidence-based practice in relation to information resources. A target sample of 987 participants were involved in the study and a structured self-administered questionnaire was the data-collection instrumented that was distributed through e-mails. The study focused on 760 participants who worked as professional nurses in the hospital. Findings from the study are as follows: only 67% had a vague awareness of the term “evidence based practice”. When participants’ sought information 67% indicated they would ask a colleague instead of accessing journal or guidelines. Of the participants 58% indicated they had never read a research report. An obstacle that was apparent was that 82% never accessed a hospital library. A large proportion of participants revealed that they never accessed MEDLINE or CINAHL. Only 36% stated they had access to computers at work and 46% were of the opinion that they had inadequate resources for evidence-based practice implementation (Pravikoff, *et al*, 2005:40).

Mohide and King (2003:100) conducted a survey in an 1157-bed tertiary hospital in Canada. The purpose of the survey was to evaluate the evidence-based practices committee that emerged and evaluate application of models in relation to the application of one best-practice guideline. One of the barriers nurses encountered was limited access to online resources as computers were not available in the workplace. During the study a definite barrier identified was poor access to e-mail which resulted in communication breakdown. Therefore the committee communicated with leaders and managers telephonically or personally

to ensure that the care practice of using chlorhexidine as an antiseptic agent before venipuncture to prevent infection was graded as level I evidence. There were 324 participants of whom only 42% adhered to the evidence-based practices.

2.5.7 THE AMOUNT OF LITERATURE PERTAINING TO CRITICAL CARE IS OVERWHELMING

In an era of technological advancement there is an explosion of information on the internet. The plethora of information creates a scenario where professional nurses do not have the ability to distinguish which information is of high quality or value (Hall & Walton, 2004:103). Rosseauw (2012:34) adds that there are too many research articles published on a yearly basis, about 3600 articles pertaining to the subject of coronary artery disease alone. Salmond (2007:114) concurs that it has become an insurmountable task to keep updated with the latest evidence as 1500 new articles are published daily and 55 new clinical trials are performed per day. Barker (2010:1) further states that on the CINAHL database there are 3011 articles in response to the search term 'evidence-based practice'. Brown *et al* (2009:371) conducted a study to explore evidence-based practices in a descriptive, cross-sectional survey involving 458 nurses at a hospital in California. The data-collection instrument was a self-administered questionnaire. The findings revealed that 53% of the participants indicated that the amount of information pertaining to patient care was overwhelming.

A conclusion that may be drawn from the above is that wealth of information may have been created by a lack of quality control of research studies. Over the past few years there has been the creation of a multitude of journals and databases causing a dual effect of variety but also confusion, as readers will be unsure which sources are trustworthy. There may be an overload of literature pertaining to critical care; however, with educational programmes that include search strategies and critical appraisal skills, professional nurses should be able to identify evidence of high quality.

2.5.8 PUBLICATION OF RESEARCH REPORTS RELATED TO CRITICAL CARE

In a survey by Kocaman *et al* (2010:1908), a descriptive, cross-sectional study with a sample of 329 professional nurses was conducted to identify barriers to research utilisation in a Turkish Hospital. The purpose of the study was to ascertain barriers to research utilisation within the hospital. Findings from the study revealed that 60% of participants indicated that research reports were not published fast enough. In a similar study by Brown *et al* (2009:381) of the 458 professional nurses who participated in the descriptive cross-sectional survey, 34% indicated that research reports were not published fast enough, as information was available in nursing units much later after it was published.

2.5.9 THE INTERPRETATION OF BEST-PRACTICE GUIDELINES

According to Courtney and McCutcheon (2010:59) best practice guidelines may be difficult to interpret as they may not be at the level of the target audience. Guidelines that are vague, complex and containing excessive medical jargon may not be appealing to potential users of the guideline. A descriptive, cross-sectional survey done by Brown *et al* (2009:371) involving 458 nurses at a hospital in California explored evidence-based practices. The data-collection instrument was a self-administered questionnaire and findings from the survey revealed that 41% of participants were of the opinion that research was not presented with clarity; so they had difficulty interpreting results and the implications for practice.

2.5.10 SUMMARY OF SECTION

It is imperative that critical care nurses have the ability to search for evidence as practices are continually evolving. Critical appraisal skills are crucial in determining the validity of research articles and best-practice guidelines. Therefore, the more those professional nurses in the critical care unit interact with guidelines or journal articles the more familiar they will become with interpreting statistical presentations, research jargon and implications for practice. Globally research studies are conducted and best-practice guidelines are developed for one purpose, which is to ensure that the best care is rendered to patients.

2.6 BARRIERS TO IMPLEMENTING EVIDENCE-BASED PRACTICES BASED ON THE RELEVANT RESOURCES

Some healthcare institutions are being criticized for not having the capacity to provide professional nurses with resources to carry out evidence-based practices. Inaccessibility to computers in nursing units makes it challenging to search for the evidence which can be found through online resources. Accessibility to written guidelines is a scarce commodity in some critical care units. To adopt evidence-based practices intensive educational training sessions have to be provided to create awareness, assist professional nurses with search strategies and provide insight on how to grade levels of evidence. Managers of organizations should also attend educational programmes to appreciate the value that evidence-based practice has on patient outcomes. The reality is that some institutions are not willing to invest the time or money on training at all. Professional nurses are resistant to initiating changes based on evidence with threats of litigation, lack of support from the organization or not having the confidence to take initiatives. Adopting practices based on evidence might have implications for financial resources of institutions as a change in practice might influence increase the need for professional nurses or purchasing new expensive equipment or consumables (Burns & Grove, 2009:618).

Textbox 2.4 indicates items for discussion which are barriers to implementing evidence-based practices based on resources. Without resources in organizations implementing evidence-based practices will prove to be challenging.

Textbox 2.4: Barriers to implementing evidence-based practices based on resources

- 2.6.1 Changing to evidence-based practices in the critical care unit
- 2.6.2 Lack of authority in the critical care unit related to evidence-based practice
- 2.6.3 Severity of the critically ill patient and the implementation of evidence-based practices
- 2.6.4 Insufficient resources in the critical care unit to change practice
- 2.6.5 Insufficient time to implement evidence-based practices in the critical care unit
- 2.6.6 Summary of the section

2.6.1 CHANGING TO EVIDENCE-BASED PRACTICE IN THE CRITICAL CARE UNIT

There is escalating scepticism amongst nurses about applying evidence-based practices in critical care units, a fear of applying unfamiliar nursing techniques or knowledge as well as concern about litigation. With the magnitude of journal articles published, nurses are also uncertain which articles qualify as 'evidence' (Smith *et al*, 2004:26). Unfamiliarity with evidence-based practices predisposes nurses to rely on knowledge from nurse specialists, peers, previous experience or in-service training. They are not comfortable about seeking knowledge themselves due to a lack of confidence in their own abilities or fear of the unknown (Barker, 2010:109).

Kalassian, Dremisizov and Angus (2002:11) note that nurses do not have the skills or confidence to appraise peer-reviewed literature critically. Even though guidelines may be available professional nurses may hesitate to use them without formal training or may even apply them incorrectly as they may not be suitable in a patient situation or techniques described can be incorrectly interpreted. Nurses may also be hesitant to apply practices in organizations which are profit-driven as most guidelines do not elaborate on financial implications for adopting evidence-based practices. Upton and Upton (2005:454) performed a research study to determine implementation of evidence-based practices. A self-administered

questionnaire was administered to 751 healthcare workers in Wales. Data obtained from the questionnaire that was statistically significant indicated that nurses consequently did not implement evidence-based practices due to lack of searching skills and an inability to translate research findings into clinical practice. From the above one may conclude that there may be apprehension in adopting evidence-based practices. A combination of unfamiliarity with evidence-based practices, coupled together with inadequate searching or critical appraisal skills may be the reasons why nurses may be hesitant to apply practices in the critical care unit. Resistance too may also be a result of having to incorporate unfamiliar nursing techniques in the care of the critically ill patient. Traditionally in the nursing profession nurses followed physicians' orders and information was sought in textbooks whereas the evidence-based practice movement relies on professional nurses accessing evidence themselves for clinical decision-making.

2.6.2 LACK OF AUTHORITY IN THE CRITICAL CARE UNIT RELATED TO EVIDENCE-BASED PRACTICE

A barrier to the implementation of evidence-based practices is that nurses perceive themselves as not having the authority to initiate practices based on evidence, particularly novices and lower category nurses, a view which may originate from nurses not having support from management or physicians within critical care units (Parahoo, 2006:422). A survey was conducted by Kocaman *et al* (2010:1909) involving 329 professional nurses working in a Turkish University Hospital using a self-administered questionnaire. Information derived from the data analysis indicated that 70% of the participants said that they lacked the authority to change to evidence-based practice within their nursing units. A descriptive cross-sectional survey conducted by Brown *et al* (2009:379) involving 458 professional nurses using a self-administered questionnaire. Findings from the survey revealed that 60% of the participants indicated that they lacked the authority to change to evidence-based practice.

From the above one may conclude that professional nurses may be of the opinion that they do not have the authority to change to evidence-based practice, which may be concerning as they may continue with tradition or ritualistic practices.

2.6.3 SEVERITY OF THE CRITICALLY ILL PATIENT AND THE IMPLEMENTATION OF EVIDENCE-BASED PRACTICES

Lawless, Wan and Zeng (2010:16) performed a survey in New Zealand involving 1003 nurses who participated in the research study through completing a self-administered questionnaire. Findings from the study indicated that professional nurses experienced high stress levels due to increasing heavy workloads. Derived from the data analysis showed 56% indicated a high patient acuity, 52% stated a high level of patient dependence; and 38% indicated the professional nurse-to-patient ratio was unsatisfactory which would influence implementation of evidence-based practices. Walsh (2010:26) conducted a mixed-methodology survey which revealed in structured interviews that participants found it challenging to implement evidence-based practices due to the high patient acuity. In a survey conducted by Majid *et al* (2011:232) 1486 professional nurses in a hospital in Singapore took part in the research study to identify the degree of adoption of evidence-based practices. Findings from the survey indicated that 40% of the participants had difficulty incorporating evidence-based practice into their nursing care because of a high patient acuity and heavy workloads, which hindered time spent reading journal articles or adapting to best-practice guidelines.

2.6.4 INSUFFICIENT RESOURCES IN THE CRITICAL CARE UNIT TO CHANGE PRACTICE

Resources may refer to professional nurses, funding, equipment or education. Without any of these evidence-based practices would be challenging (Barker, 2010:118). Therefore organizations should empower professional nurses with access to computers, journal articles or libraries to create an organization that embraces evidence-based practices (Gerrish & Lacey, 2010:496). Allocation of resources is dependent on management, physicians and medical aids. Therefore there are many stakeholders that may hinder the implementation or sustainability of evidence-based practices (Moule & Goodman, 2009:378).

Research studies indicate recommendations for practices; but they omit the impact on cost and nursing time which is in fact influential on whether practices will be adopted in organizations. For instance, blood glucose checking and

glycaemic control in the critically ill patients may require 2-hourly glucose monitoring. The time taken to perform the action, document the result and carry out the action accounts for nearly 2 hours in a 24-hour period. One evidence-based intervention has a calculated cost that amounts to 250 000 US dollars per year in four critical care units (Dracup & Bryan-Brown, 2006:356).

Resources are scarce in developing countries where supplies, professional nurses and equipment are barely enough to serve the population. The dilemma of implementing evidence-based practices in such an environment is impractical when financial resources are unavailable. On average in developing countries there are 76 doctors to a population of 100 000 compared to 253 doctors to 100 000 people in developed countries. In developing countries there are only 85 nurses to 100 000 people compared to developed countries where there are 900 nurses on average to a population of 100 000. Infrastructures such as clean water, electricity, transport, communication systems and fridges for medicines are non-existent in some developing countries. Best-practice guidelines are available through online sites which require internet connectivity, which may be non-existent in developing countries. These conditions pose a huge barrier to implementation of evidence-based practices where healthcare providers in those countries strive to ensure that communities survive only because basic needs met and essential medication is administered (Pearson & Jordan, 2010:97).

It thus appears that implementing a new practice in any critical care unit will require manpower or even perhaps new equipment, which might prove to be challenging especially in a developing country.

2.6.5 INSUFFICIENT TIME TO IMPLEMENT EVIDENCE-BASED PRACTICES IN THE CRITICAL CARE UNIT

In numerous research studies that have been conducted on barriers to the implementation of evidence-based practice, a lack of time has been one of the highest-ranked barriers noted consistently throughout the literature. Time is required to search for evidence and then read information which is sometimes not possible during working hours of professional nurses, who are burdened with

many tasks to perform and the focus which is, after all, on rendering patient care. Evidence-based practices have been met with resistance in some healthcare institutions. For instance, antimicrobial dressings may be recommended according to the highest level of evidence in best-practice guidelines. However, institutions may not adopt the practices as they may require time to train professional nurses on how to use the dressing, for instance, without realizing that the new product or technique could save time in the longer term and may be more cost-effective (Parahoo, 2006:421).

Breimaier, *et al* (2010:1744) performed a study to identify barriers and facilitators to research utilisation. The descriptive and exploratory cross-sectional survey was conducted in an Austrian university hospital with a target population of 1023 professional nurses. Data was collected from a structured questionnaire. Of the 1023 professional nurses, 70% stated that the lack of time to read best-practice guidelines or journal articles was a major obstacle to implementation of evidence-based practices.

In 2007 a similar Canadian survey was done by Squires *et al* (2007:17) to evaluate the role of the organisational research policies and procedures to promote research utilisation by professional nurses. Within the policy and procedure file eight practices were evaluated to check for consistency in accessing information regarding practices. The method of data-collection was a self-administered questionnaire that was given to professional nurses in 8 regions working in acute services. A sample of 248 nurses participated in the research study. A statistically significant barrier identified by 43% of participants was insufficient time to read or even search for evidence.

Inferences that can be made from the above are that insufficient time may be a barrier to implementation of evidence-based practices. In the critical care unit professional nurses are responsible for patients who are critically ill. Patients are mostly mechanically ventilated and on life-sustaining medication, various diagnostic tests need to be carried out and need assistance with essential care practices. Families may also require support from these professional nurses, and

doctors write orders that have to be carried out. The perplexity of the situation increases when caring for a haemodynamically unstable patient. These activities are just a few that require time and dedication from professional nurses in critical care units. Therefore an allocation of sufficient time for performing literature searches and accessing best-practice guidelines is crucial to ensure that the critically ill receive care that is founded on evidence.

2.6.6 SUMMARY OF THE SECTION

Strategies to bridge the chasm between research and practice are dependent to a large extent on the organization. Critical care nurses must have the freedom to perform searches or read latest evidence in an environment that is conducive to embracing evidence-based practices. The nursing profession must also reclaim the independent role in initiating evidence-based practices that is substantiated by a high level of recommendations.

2.7 BARRIERS RELATED TO FACILITATION AND SUPPORT STRUCTURES REQUIRED FOR EVIDENCE-BASED PRACTICE IMPLEMENTATION

To gain an understanding of the concept known as “facilitation” two definitions have been referred to consistently. The first definition by Kitson, Harvey and McCormack (1998:152) states that facilitation is a technique used by one person to make things easier for others, whether it be change in attitudes, behaviour, skill, thinking or action. The second definition by Harvey, Loftus-Hills, Rycroft-Malone, Seers (2002:579) define facilitation rather as a process of enabling the implementation of evidence into clinical practice.

Therefore facilitation bridges the gap between research and clinical practice by interplay of factors which promote implementation of evidence-based practices. The factors may be at various levels: the individual, organization, or characteristics of the evidence itself. Organizations must also take into account that facilitators are dependent on the local context of the critical care environment. In Textbox 2.5 a list of items which may facilitate evidence uptake in critical care units is presented.

Textbox 2.5: Barriers related to facilitation and support structures required for evidence-based practice implementation

- 2.7.1 Support for initiatives to change to evidence-based practices in the critical care unit
- 2.7.2 Nurse Managers are supportive of implementing evidence-based practices in the critical care unit
- 2.7.3 Physicians are supportive of implementing evidence-based practices in the critical care unit
- 2.7.4 Receptiveness to the use of best-practice guidelines in the care of the critically ill patient
- 2.7.5 Organizational support for best-practice guideline development and implementation
- 2.7.6 Institutional management and evidence uptake
- 2.7.7 Promotion of adherence to evidence-based practices
- 2.7.8 An evidence-based practice champion/mentor for the implementation of evidence-based practices
- 2.7.9 Best-practice guidelines and evidence uptake
- 2.7.10 Facilitating agents of evidence-based practice
- 2.7.11 Summary of section

2.7.1 SUPPORT FOR INITIATIVES TO CHANGE TO EVIDENCE-BASED PRACTICES IN THE CRITICAL CARE UNIT

LoBiondo-Wood and Haber (2010:420) indicate that the nursing profession plays an integral role in facilitation of evidence-based practices as they are direct providers of patient care. The goal of healthcare institutions should be to stimulate nurses to use evidence-based practices through various strategies, which may include: in-service training of all professional nurses on evidence-based practices; offering professional nurses opportunities to attend workshops that have interventions based on the latest evidence; and initiating best-practice guidelines that are part of quality improvement programmes within nursing units. Participation in evidence-based practices should form part of employees' yearly performance evaluations to assess active involvement in evidence-based practices in the critical care unit.

Schmidt and Brown (2009:43) add that the nurse's role should use a team approach and each nurse should have a clearly demarcated role. In Table 2.6 the nursing roles for facilitation of evidence-based practice is described. Pertaining to the critical care unit the level of the nurse executive may refer to support from the matron on duty responsible for the critical care unit. The advanced practice nurse pertaining to the critical care unit may refer to an evidence-based practices mentor or champion who searches and disseminates evidence to the rest of the professional nurses within the critical care unit. The nurse manager in the South African context refers to the unit manager of a nursing unit who encourages professional nurses to incorporate evidence-based practice in their nursing care. The nurse manager should also ensure that best-practice guidelines are used in the critical care unit. The professional nurse in the critical care unit is directly responsible for rendering evidence-based care to the critically ill population.

Table 2.1: Nursing roles in implementation of evidence-based practices

Professional Nurse	Nurse Manager	Advanced practice nurse	Nurse executive
Questions practice	Challenge professional nurses to seek evidence and resolve clinical issues and improve care	Serves as a coach and mentor	Ensures governance reflects evidence-based practices
Participates in evidence-based practices	Role model for evidence-based practices	Locates evidence	Assures organisational commitment to evidence-based practices
Participates as team member in evidence-based practices	Uses performance criteria about evidence-based practices when evaluating professional nurses	Synthesizes evidence	Ensures resources are available
Suggest resolutions for clinical issues based on evidence		Uses evidence in practice	
		Facilitate system change to evidence-based practices	

Source: (Schmidt and Brown, 2009:35)

Ring, Malcolm, Coull, Murphy-Back and Watterson (2005:1048) performed a descriptive study to explore adoption of evidence-based practices where 15 professional nurses participated in the qualitative research study which collected data through semi-structured interviews, fourteen participants were optimistic that evidence-based practices improved patient outcomes. Data obtained from interviews revealed that participants were of the opinion that in-service training and presence of an EBP champion would promote implementation of evidence-based practice into clinical practice.

2.7.2 NURSE MANAGERS ARE SUPPORTIVE OF IMPLEMENTING EVIDENCE-BASED PRACTICES IN THE CRITICAL CARE UNIT

Promotion of evidence-based practices is promulgated through the assistance of

management and strong leadership as a steering force (DiCenso *et al*, 2005:182). An exploratory study to identify research utilisation and facilitation was carried out on three bibliographic databases namely CINAHL, MEDLINE AND EMBASE. A total of 39 articles were used. Upon content analysis, several commonalities were found in articles that were identified as strongly ranked facilitators. Two facilitators that emerged as effective throughout peer-reviewed journal articles are strong leadership and support by nursing management. The presence of strong leaders who implement evidence-based practice in an organization has the potential to infiltrate enthusiasm for evidence-based practice amongst the rest of the team members. The role of nursing management may include organizing logistics such as meetings or disseminating the latest best-practice guidelines (Dogherty, Harrison & Graham, 2010:76).

Robinson, Driedger, Elliot and Eyles (2006: 467) performed a parallel case study in 5 provinces in Canada that were involved in disseminating heart health promotion guidelines, using a mixed method approach. Data was drawn from 53 provincial project reports and interviews as well. Participants identified facilitators that encouraged evidence uptake. There were 29% of the participants that indicated that support from nursing management was crucial for successful implementation of best-practice guidelines. Aarons, Sommerfield and Walrath-Greene (2008:83) conducted a survey across 17 communities in 16 states to ascertain if an organisational context had a role in implementing evidence-based practices. Participants from both the private and public sector took part in the research study. The survey was done via e-mail with a sample of 174 participants. Results from the study indicated that leadership and encouragement from all levels of nursing management verified adoption of evidence-based practices.

One may draw inferences from the above that consistent feedback from all levels of nursing managers, from top to middle management and to clinicians, will create an environment within the critical care unit that endorses evidence-based practices. Leaders can serve as role models to the rest of the healthcare team by adhering to best-practice guidelines. In the critical care unit leaders may refer to senior nurses or clinical nurse specialists who can serve as role models to

encourage other professional nurses to implement evidence-based practices.

2.7.3 PHYSICIANS ARE SUPPORTIVE OF IMPLEMENTING EVIDENCE-BASED PRACTICES IN THE CRITICAL CARE UNIT

Ubbink *et al* (2011:91) state that support from physicians is an important component in the successful implementation of evidence-based practices. Physicians need to be cooperative about new techniques being applied in caring for patients. Innovations or medication may also be beneficial for patients; therefore support from physicians is important. Ploeg *et al* (2007:210) conducted semi-structured telephonic interviews with 125 participants to identify which factors influenced best-practice guideline implementation. From the themes that emerged participants indicated that support from physicians encouraged them to implement evidence-based practices. From the above one may conclude that support from physicians is important for evidence uptake.

2.7.4 RECEPTIVENESS TO THE USE OF BEST-PRACTICE GUIDELINES IN THE CARE OF THE CRITICALLY ILL PATIENT

An exploratory study was done in Canada by Estabrooks, Scott, Squires, Stevens, O'Brien Pallas, Watt-Watson, Profetto-McGrath, McGilton, Golden-Biddle, Lander, Donner, Boschma, Humphrey and Williams (2008:391) with the purpose of investigating determinants of research use amongst professional nurses in nursing units. Professional nurses from seven nursing units participated over a period of six months with both qualitative and quantitative approaches being applied in the study. Results from the study revealed that professional nurses were optimistic about the implementation of evidence-based practices. Results also indicated that participants with postgraduate qualifications tended to appreciate the value of research, whilst younger nurses were more flexible in adopting practices based on evidence.

In a survey conducted by Caldwell *et al* (2007:518) a sample of 200 health care professionals participated in a cross-sectional quantitative survey by completing a structured postal questionnaire. Findings from the study revealed that 60% indicated that their colleagues would be supportive in implementing best-practice

guidelines. Sherriff *et al* (2007:363) conducted a study in Queensland with a sample of 57 professional nurses to explore their views on evidence-based practice. From the findings 87% of the participants indicated that they were willing to incorporate best-practice into their practice.

Conclusions from the above are that professional nurses will be open and receptive to implementing best-practice guidelines in the care of their patients. By following recommendations according to best-practice guidelines the critically ill patients can have improved outcomes.

2.7.5 ORGANIZATIONAL SUPPORT FOR BEST-PRACTICE GUIDELINE DEVELOPMENT AND IMPLEMENTATION

Before implementing any evidence-based practices the environment has to be assessed for readiness. Environmental readiness refers to how the environment will respond to the introduction of changes and implementation processes that will improve patient outcomes. Organisational readiness is a state of preparedness within an organization in response to change and has three dimensions: organisational culture, organization infrastructure and organisational resources.

Organisational culture

The organisational culture determines the norms, values and morals of an organization. Other aspects which are included are relationships amongst employees and the employer, the vision and mission statement of the organization, leadership styles and resources available. The interaction between these components may determine if an organization is indeed ready for adopting evidence-based practices. (Smith & Donze, 2010:62).

Organisational infrastructure

The organisational infrastructure refers to the goals, people, process, structure and results within an organization. An organization that is planning to adopt evidence-based practices must incorporate it as part of the goals of the organization. People that are committed to carrying out evidence-based practices are crucial (Smith & Donze, 2010:62)

Organisational resources

Human resources such as EBP champions are needed to dedicate time to search for evidence and disseminate it to others. Physical resources are the workforce using evidence-based practices directly for patients inclusive of the multidisciplinary team. Financial resources for new requisitions need to be allocated as part of the budget. Information resources can refer to accessibility to computers, libraries, textbooks and conferences (Smith & Donze, 2010:62).

A conclusion that may be drawn from the above is that an organization that embraces change is goal oriented and has the infrastructure and the resources that will cultivate a culture of evidence-based practices that thrives through leadership.

2.7.6 INSTITUTIONAL MANAGEMENT AND EVIDENCE UPTAKE

Ploeg *et al* (2007:214) mention that support from all levels of institutional management is crucial within organizations to promote implementation of evidence-based practices. Administrators within organizations should incorporate “striving to provide care that is evidence-based” in their mission statement. Implementing best-practice guidelines should be supported by institutional management. With regard to education, programmers on evidence-based practice management from all levels should attend to grasp the value that evidence-based practice can achieve in the healthcare environment. In a survey by Breimaier *et al* (2011:1750) of the 1825 professional nurses that participated in the survey 14% indicated that support from the human resource department and institutional management would promote evidence uptake.

2.7.7 PROMOTION OF AND ADHERENCE TO EVIDENCE-BASED PRACTICES

A professional nurse who aims to implement evidence-based practices should have a sufficient knowledge base which can only be achieved through educational programmes. Educational outreach programmes require an expert who provides on-the-spot training to others and is seen as an effective teaching strategy. Educational workshops that include interaction and discussion are one way of

successfully translating research into practice (DiCenso *et al*, 2005:192).

A cross-sectional survey was conducted by Ubbink *et al* (2011:87) to establish determinants of evidence-based practices in 5 departments in a hospital in Amsterdam in the Netherlands. A total of 305 doctors and 396 nurses participated in the study. The data-collection method was self-administered questionnaires. Results from the study indicated that participants ranked educational programmes as the third-highest-ranked facilitator of the implementation of evidence-based practices. A study conducted by Breimaier *et al* (2011:1751) indicated that 49% were of the opinion that educational programmes with adequate information on evidence-based practices would promote evidence uptake.

From the above one may deduce that adequate training programmes at colleges, universities or within organizations will empower critical care nurses with the skills needed to perform literature searches, accessing best-practice guidelines and thus ensuring that patients in critical care units are given the best possible care.

2.7.8 AN EVIDENCE-BASED PRACTICE CHAMPION / MENTOR FOR THE IMPLEMENTATION OF EVIDENCE-BASED PRACTICES

An intervention to promote evidence-based practices that has been mentioned throughout literature is the presence of EBP champions, also known as mentors (Mortaine & Fontaine, 2009:5). EBP champions are usually professional nurses within the clinical setting who are experts on evidence-based practice. They embrace innovation, are passionate to improve standards of care and communicate well with team players. Their function is to disseminate the latest evidence to peers; to remain updated regarding the latest research and technology; and then relay that information to all members of the multidisciplinary team. One or two EBP champions within a nursing unit that can perform these functions should be identified (LoBiondo-Wood & Haber, 2010:410).

In a quantitative study that was done in Singapore, a target population of 1486 professional nurses from two public hospitals participated in the study. Data was collected in the form of self-administered questionnaires to explore adoption,

attitudes, knowledge and barriers to implementing evidence-based practices. Results obtained from participants indicated that the presence of an EBP champion dedicating time to evidence-based practice within a nursing unit would stimulate evidence uptake (Majid, *et al*, 2011:235).

From the above observations inferences may be drawn that an EBP champion within a critical care unit who can dedicate time in searching for latest evidence and disseminating that to the rest of the nursing team could alleviate the workload of nurses who are still expected to perform individual searches. Best-practice guideline adherence can also dramatically improve as critical care nurses will be aware of the latest evidence and the EBP champion will ensure the team remains updated.

2.7.9 BEST-PRACTICE GUIDELINES AND EVIDENCE UPTAKE

Best-practice guidelines provide statements based on evidence to assist practitioners in making decisions in clinical circumstances with the ultimate goal of facilitating evidence-based practices. Characteristics of the best-practice guidelines that increase compliance are a user-friendly format and comprehensible information relevant to practice will ensure that the guideline is implemented (Cahill, Suurdt, Quелlette-Kuntz & Heyland, 2010:616).

During the development of best-practice guidelines nine principles have to be adhered to:

- Guideline development should be outcome-based;
- Guidelines should be based on best available evidence and describe the strength of recommendations;
- Guideline evidence should be the strongest method available to determine effect on clinical outcomes;
- Guidelines should be formulated by the multidisciplinary team;
- Guidelines should be adapted to the local context;
- Guidelines should be developed bearing resources in mind;
- Guidelines should be evaluated for effect, value, validity and usage;
- Guidelines should be reviewed and modified regularly to incorporate new evidence;

- Guidelines should be developed with consideration for the target audience (Courtney & McCutcheon, 2010:64).

Over the past few years best-practice guidelines (BPGs) have been developed on an international scale as well, with expert opinions and international peer-review articles as a solid foundation for ensuring robustness of these guidelines. In the United Kingdom, the National Institute for Clinical and Health Excellence (NICE), the Scottish Intercollegiate Guidelines Network (SIGN), and the Royal College of Nursing have developed guidelines which are recognized globally. In Australia the Johanna Briggs Institute has formulated best-practice guidelines that professional nurses can access. The Appraisal of Guideline Research and Evaluation (AGREE) instrument assesses the quality of a guideline by measuring six domains. Best-practice guidelines can also be developed at a local level as high-quality evidence is readily available in the form of systematic reviews (Gerrish & Lacey, 2010:504). In a study conducted by Walsh (2010:29) one of the themes that emerged from semi-structured interviews was that best-practice guidelines would ensure that there was consistency in the nursing care delivered to patients as it would be based on the best research evidence.

From the above one may conclude that the presence of best-practice guidelines in critical care units will ensure that consist care based on evidence will be rendered to critically ill patients.

2.7.10 FACILITATING AGENTS OF EVIDENCE-BASED PRACTICE

Other approaches which may be helpful in the facilitation processes have not been discussed thus far. Clinical audits and feedback sessions in nursing units are also processes that might be helpful in sustaining evidence-based practices. Reminders in the manual or electronic format and are effective in sustaining evidence-based practices (Craig & Smyth, 2007:324).

Courtney and McCutcheon (2010:114) add that a clinical audit is an instrument to evaluate practice and compare patient outcomes with quality standards, evidence-based practice and best practice guidelines. The overall intention of a clinical audit

is to improve the quality of care rendered to patients. Simpson and Doig (2007:709) conducted a survey in 14 critical care units in New Zealand and Australia to ascertain which interventions were effective in practice changes from the 18 evidence-based practices which were implemented. Participants were then required to rank interventions from “highly effective” to “least effective” which they perceived as helpful. A response rate of 100% was achieved. Active reminders (short friendly chats) were ranked as the highest amongst all 14 critical care units. According to Ubbink *et al* (2011:92) journal clubs may be established in organizations where professional nurses can search for evidence or best-practice guidelines; and once evidence is found discussions may follow to discuss the evidence.

From the above conclusions may be drawn that within the critical care units interventions such as clinical audits may easily be adapted to evaluate the effectiveness of adoption of best-practice guidelines.

2.7.11 SUMMARY OF SECTION

Adoption of evidence-based practice requires careful planning within organizations to guarantee successful endeavours in adoption of evidence uptake. An assessment of facilitators that will promote facilitation according to the context of a critical care unit will ensure that practices are sustained. In-service training is a crucial component to ensure that professional nurses are aware of the importance of implementing evidence-based practices and will provide a platform to ensure that professional nurses grasp the value of evidence. Strong leadership and the presence of an EBP champion is are integral components in shaping an evidence-based practice culture in the critical care unit.

2.8 SUMMARY OF CHAPTER

Implementing evidence-based practices in the critical care unit may prove to be an intricate process with many facets hindering success or sustainability. Barriers to implementing evidence-based practices may exist on diverse levels: the characteristics of evidence, the individual or the organization. Therefore before any practices are adopted a careful evaluation of the local context should be

considered. An evaluation of adequacy of staff, equipment, technology and financial resources should be undertaken. Ultimately, regardless of the barriers that lie on the path of evidence-based practices professional nurses should conscientiously strive toward delivering care that is based on evidence; therefore care that is founded on ritual or tradition will be minimized. Within Chapter Two studies have been carried in various contexts within different countries, and similar barriers have been identified. In Chapter Two a comprehensive literature review on evidence-based practice has been discussed in the following Chapter Three the research design and methods will be discussed.

CHAPTER THREE

RESEARCH DESIGN AND METHOD

3.1 INTRODUCTION

Two chapters have been explored thus far. Chapter One provided a brief overview of the research topic, the research problem was identified and research objectives were highlighted, the research design and method were listed and ethical principles which would be maintained during the research study were given. Chapter Two elaborated on a narrative literature review to enhance the readers' comprehension on the research topic: barriers to implementation of evidence-based practice within a critical care unit.

The purpose of Chapter Three is to explain the research design that was chosen by the researcher and the research methods that were applied in relation to the research study. The research design and methods signify the foundation of what steps are to be followed after identifying a research problem and determining what research objectives should be achieved. Without these crucial steps any research study may not be deemed reliable or robust. Before delving into the research methodology processes, the objectives of the research study that were stated in Chapter One are once again revisited.

3.2 RESEARCH OBJECTIVES

The objectives of the study were as follows:

- to explore and describe barriers to implementation of evidence-based practices within a critical care unit, and
- to make recommendations to enhance the implementation of evidence-based practices within a critical care unit.

3.3 RESEARCH DESIGN

A research design is the overall plan or guideline which provides structure in

addressing research questions (Jo Brown, 2009:19). The definition is supported by Rebar, Gersch, Macnee and McCabe (2011:175) stating that the research design is chosen according to which approach is best suited to answer the research question and ensure that results are valid. LoBiondo-Wood and Haber (2010:159) further state that the research design has three functions:

- to give rise to the blueprint or plan for the research study;
- to test research questions and hypotheses and
- to involve structure and strategy.

The overall goal of the research design is to assist the researcher in developing the research questions, then conducting the study and lastly, analysing data whilst using a systematic design. The multidimensional role of the research design encompasses constituents such as sampling, ethical principles, pilot studies, data-collection processes and extends to data analysis. The researcher has implemented a quantitative design that is descriptive, exploratory and contextual in nature for the research study which is to investigate barriers to the implementation of evidence-based practices within a critical care unit.

3.3.1 QUANTITATIVE RESEARCH

Quantitative research aims to produce numerical data by seeking to measure the correlation between different phenomena, to describe phenomena that are not extensively researched or to measure cause and effect relationships. The approach is formal, systematic and objective (Moule & Goodman, 2009:178). Leedy and Ormrod (2005:94) concur that quantitative research addresses relationships amongst variables through controlling, explaining or predicting phenomena.

Quantitative research has unique characteristics, as illustrated in Barker (2010:17):

- Research is based on scientific principles.
- Theory is converted into numerical data which is represented as statistics.
- Causal relationships exist amongst data.
- Processes are highly structured.

- The researcher is objective.
- The study usually involves large numbers of participants.

A quantitative approach was ideal in its measuring aspect which was suitable for answering the research question formulated in Chapter One. The systematic and structured format of the quantitative research design was stringently adhered to throughout the research study. The role of the researcher was objective, as input during data-collection processes was gleaned from participants only. Data was collected through a structured questionnaire which was then converted into statistics with the aid of a statistician using the Statistica version 10 Programme. Data will be presented according to graphs and percentages in Chapter Four.

3.3.2 EXPLORATORY RESEARCH

Exploratory research in quantitative studies incorporates an inquiry into a phenomenon of interest from manifestation to the impact of underlying factors which are related to the phenomenon (Polit & Beck, 2008:20). Exploratory research may investigate a phenomenon that is perhaps unfamiliar or new. Neuman (2006:33) mentions a research topic with a paucity of literature or none whatsoever in existence may be referred to as exploratory research. Definitive answers are seldom reached with exploratory research since the focus addresses the "what" question. Conducting this type of study can require researchers to be flexible and creative as there are few guidelines to follow.

An exploratory design was selected with the intention to explore the barriers to implementation of evidence-based practices in a private critical care unit within the Nelson Mandela Metropole. Data was collected from professional nurses working in the critical care unit.

3.3.3 DESCRIPTIVE RESEARCH

Polit and Beck (2008:274) maintain that descriptive research tends to describe, observe and document a situation. Therefore, in essence the purpose of descriptive research is to explain the relationships between variables of a research

study. As noted in Boswell and Cannon (2007:148), descriptive research serves as an investigation into the characteristics of one sample population. Instances when descriptive research is typically used are for clinical decision making, rationale for current practice or for theory development. Descriptive research dissects a problem and then establishes a description of variables being studied. A distinguishing characteristic of descriptive research is that variables are not manipulated and a situation is examined as it unfolds naturally, but the intention of the research type is not to explain cause-and-effect relationships. Descriptive research is often used in quantitative studies, with questionnaires being the chosen method for data-collection (Schmidt & Brown, 2009:149). A descriptive design was particularly selected to describe barriers to the implementation of evidence-based practices amongst professional nurses in the critical care unit, within the Nelson Mandela Metropole.

3.3.4 CONTEXTUAL RESEARCH

Contextualization relates to the time and place of an event. A context may be altered by the chronological sequence of events or the conditions of a setting (Johnson & Christensen, 2008:432). Social phenomena may be interpreted differently by individuals who base their context upon experience, perceptions and behaviour and this is referred to as contextual grounding (Saks & Allsop, 2007:82). According to Neuman (2006:158), when conducting a study emphasis should be given to the social context by being aware of events and surroundings. However, there might be divergence within the consistency of context. Within various cultures or historical eras the context or meaning can be interpreted differently; therefore that should be taken into account when conducting a research study.

This research study was conducted in the context of a critical care unit in a private hospital within the Nelson Mandela Metropole. The critical care unit consists of a twenty-three beds into which the adult and paediatric population are admitted. The critical care unit is a dynamic, fast-paced unit with a diverse patient population. Patient disease profiles may range from respiratory diseases such as pulmonary embolism, pulmonary oedema, Acute Respiratory Distress Syndrome (ARDS), pneumonia or respiratory distress. Other conditions may be post-surgical

conditions e.g. post-laparotomy, post-coronary artery bypass grafts, post-craniotomies etc. Other complex diseases may extend to septic shock, pancreatitis, diabetic keto acidosis (DKA) or polytrauma. Most of the patients admitted to the critical care unit are mechanically ventilated with various pharmacological agents as a mode of treatment. Professional nurses within the unit should have a comprehensive knowledge base when dealing with these patients. The latest technological advances or equipment such as cardiac monitors, cardiac output monitors, syringe/feeding or intravenous pumps are available in the critical care unit. Therefore it is imperative that patients receive nursing care that is based on the latest available evidence.

3.4 RESEARCH METHOD

Research methods encompass techniques used to structure a research study and information is accumulated and then evaluated in a systematic manner (Polit & Beck, 2008:765).

3.4.1 TARGET POPULATION

In research studies information is usually acquired from a particular population who meet certain criteria (Moule & Goodman, 2009:265). Parahoo (2006:256) concurs that the target population is defined as the population of interest from whom data can potentially be collected. Neuman (2006:224) adds that the target population is a concrete and specific large group of cases that the researcher identifies and from which he or she chooses a sample.

At the time of data-collection a total of seventy (n=70) professional nurses in critical care units at a private hospital within the Nelson Mandela Metropole participated in the research study. From the total of seventy participants, positions held within the critical care units comprised fifty-eight permanently employed professional nurses. From the fifty-eight professional nurses who worked in the critical care unit thirty five worked on a shift basis, nineteen were shift leaders and four were unit managers. The other twelve participants were agency workers who worked through a nursing agency. Therefore the majority of participants comprised participants who were permanently employed in the critical care unit.

3.4.2 SAMPLING METHOD

A sample is a set of elements taken from a larger population according to specific criteria. An element is a basic unit of the population, which may be an individual or a group. Sampling is the process of choosing a sample from the chosen population (Johnson & Christensen, 2008: 222). In quantitative studies the sampling approach focuses on subjects who match the population of interest. To eliminate bias, a sampling plan is adhered to once the sample is identified and recruited. Only then will data be analysed, which differs from the sampling process in qualitative studies (Rebar *et al*, 2011:119).

Researchers can select a sample by using either of two methods. The two categories of sampling are divided into probability and non-probability sampling. With probability sampling every element in the population has an equal chance for inclusion in the research study. However, with non-probability sampling the researcher has no way of predicting that every element will be represented in the sample. There is no randomization so some members of the population will not have a chance of being included in the sample (Schmidt & Brown, 2009:217). Brink (2006:132) adds that with non-probability sampling, the researcher selects subjects that will best describe a population. Professional nurses working in the critical care unit who volunteered to participate in the research study was included in the sample. Those who were on sick or study leave or those who refused to participate were excluded from the sample. There were no inclusion criteria, as all professional nurses working in the critical care unit were included in the sample owing to the limited number of professional nurses in the critical care unit at the private hospital; therefore non-probability sampling was the most appropriate method for this research study.

3.4.3 DATA-COLLECTION INSTRUMENT

In research data-collection instruments or tools often measure characteristics, performance, ideas, feelings or performance. A questionnaire is often the data-collection instrument that is used in quantitative studies to uncover what a participant thinks about a certain topic (Boswell & Cannon, 2007:191).

A questionnaire is a self-report data-collection instrument filled out by participants, in which they can express their beliefs, values, attitudes and perceptions. The researcher has to follow certain principles when constructing a questionnaire which are the following.

- The questionnaire items meets research objectives;
- Participants must comprehend questions being asked;
- Language used should be at the level of the participant's;
- Questions should not be leading;
- Double-barrelled questions are to be avoided;
- When to use open or close-ended questions must be determined;
- Different response categories should be available in closed- ended questions;
- Multiple items are to be used to measure abstract constructs;
- The questionnaire should be easy to complete;
- The questionnaire must be pilot tested (Johnson & Christensen, 2008:172).

For this research study the measuring instrument chosen by the researcher was a structured questionnaire. The researcher consulted previously validated questionnaires during the development of the questionnaire. However, due to the specific nature of the critical care context, a structured questionnaire was created. A thorough literature review was done on barriers to the implementation of evidence-based practices to serve as a guideline for which questions on the questionnaire should be asked. Various questions were presented in the questionnaire to yield data that would be congruent with the research objectives. Dichotomous questions were given to limit responses to a "Yes" or "No". Forced-choice questions compelled the participant to allocate one answer from a list of possible answers. There were a few open ended questions which prompted participants to write answers in an allocated space. Within the research study there were only a few filter questions which forced the participant to respond to a follow-up question. Apart from questions, scales also formed part of the questionnaire content. The Likert scale was created to assess the strength of a participant's opinion to about a statement provided.

Researchers determine the content of questionnaires based on the topic chosen. Usually, it is standardized; therefore all participants will receive the same questionnaire and will complete it themselves without any interference from the researcher (Moule & Goodman, 2009:300). Administration of questionnaires may range from posting them or the researcher hand-delivering them to participants. Response rates may vary and can be affected by factors such as the length of a questionnaire. Questions should be kept to as few as necessary to improve response rates. The questionnaire should also flow and be logical in the way the sections follow one other. A covering letter may increase response rates, therefore information such as confidentiality, purpose of the study, what will be done with the results and contact information should be stated in case the participant has any queries (Moore, 2006:127). Advantages of questionnaires are as follows: they are inexpensive, easy to use, confidentiality and anonymity may be maintained, abstract concepts may be measured and large amounts of data may be collected in a short space of time (Parahoo, 2006:285).

The questionnaire (Annexure A) was checked by the statistician to ensure the flow and sections were relevant to extract the data that was required. The questionnaire was subdivided into specific sections as outlined below:

- Section A: Demographic data;
- Section B: Implementation of evidence-based practices;
- Section C: Barriers related to knowledge of the nurse with regard to evidence-based practices;
- Section D: Barriers to finding and reviewing evidence;
- Section E: Barriers to implementing evidence-based practice based on relevant resources;
- Section F: Barriers related to facilitation and support structures required for evidence-based practice implementation.

Section A contains 6 items to explore the demographic data of participants. In section B there are 9 items to explore implementation of evidence-based practices. Section C comprises 14 items which explores the knowledge of a nurse with regard to evidence-based practices. Section D consists of 10 items which

ascertain barriers to finding and reviewing evidence. Section E contains 5 items to explore barriers to implementing evidence-based practices on the relevant resources. Section F contains 9 items which explores barriers related to facilitation and support structures required for evidence-based practice implementation.

3.4.4 DATA-COLLECTION METHOD

In quantitative research data-collection methods may range from interviews, questionnaires, observational schedules, self-reporting schedules to bio-physiological measures. The data-collecting instrument should also be appropriate in addressing the research question (Barker, 2010:71). Gerrish and Lacey (2010:23) add that data-collection methods often involve interaction with patients, staff or the public, depending on the method chosen. According to Polit and Beck (2008:381), data-collection protocols which may guide researchers describe the following:

- conditions when data is collected;
- recruitment of participants;
- rules that must be followed during data-collection;
- procedures for collecting data and
- management and storage of data.

Before commencement of the main study consent was granted by internal and external stakeholders. The unit manager was informed beforehand when the main study would be conducted. The study took place over approximately one week at the critical care unit at a private hospital in the Nelson Mandela Metropole as participants rotated from day and night shifts. Therefore participants from all shifts were involved in the research study. Participants were approached outside of peak times in the unit such as doctors' rounds, rendering of basic care or administering medication.

The researcher handed out questionnaires to participants and remained in the unit for at least 20 minutes to clarify any uncertainties about the questionnaire. Instructions were given to participants to enable that data retrieved would be easily analysed and not compromised in any way. Participants were told that the

questionnaire had to be completed before the end of their shift. At no point could they consult textbooks, the internet or their peers in answering questions. Each aspect of the participant letter (Annexure B) and informed consent (Annexure C) was explained to the participants. Once a participant decided to participate, the informed consent form was filled in with all the particulars of a participant. The questionnaire was handed to the participant and each section was explained. The researcher emphasized that each question had to be answered and instructions on how to answer the question had to be followed to allow the researcher to use that questionnaire. The consent form did not have to be attached to the questionnaire. The questionnaire was in no way marked. Participants could contact the researcher by telephone if there were any queries. Participants were reassured that anonymity and confidentiality would be adhered to throughout the research process.

Upon completion of the questionnaire participants were instructed to place the questionnaire into a sealed box at the central nursing station. The researcher returned to the unit to collect the sealed box and then replaced it with another empty sealed box. The researcher was the only person to access the sealed box. A total of 75 questionnaires were handed out and 70 were returned achieving a response rate of 93%. Five participants were excluded from the study as they changed their minds about participating in the study and others did not return the questionnaire before the end of their shift.

3.4.5 PILOT STUDY

A pilot study is conducted before the main study to test out a data-collection instrument. In quantitative studies a few participants with characteristics similar to those of main study will be given questionnaires; therefore the researcher can ascertain if questions are interpreted correctly. Any modifications to the questionnaire can be made after the pilot study. Results of the pilot study from quantitative studies are not published or included in the main study (Gerrish & Lacey, 2010:23). As noted in Polit and Beck (2008:213), a pilot study is described as a trial run designed to test methods to be used in the parent study, which is also known as the main study. Essential functions of pilot studies are:

- to evaluate the study methods and procedures;
- to determine involvement of participants;
- to check the effectiveness of instruments;
- to identify which variables need to be controlled and;
- to explore possible problems that could be encountered in the main study.

Pilot testing of the questionnaire will enlighten the researcher to whether participants understand the questionnaire in the same way. The suitability, structure and format of questions can also be tested according to responses of participants. Researchers will also be able to establish if questionnaires are of an appropriate length. Therefore by pilot testing the questionnaire strengths and weaknesses can be determined, and then modified before the main study (Parahoo, 2006:309).

Prior to conducting the main study, a pilot study was performed to test the questionnaire under similar conditions to the main study. Firstly, the researcher chose the exact location where the main study would be conducted. Consent was obtained in advance from hospital management and the unit manager of the critical care unit at the private hospital within the Nelson Mandela Metropole. On the day of the pilot study, the researcher liaised with the unit manager to avoid peak periods such as doctors' rounds, rendering of basic nursing care or administering medication. During a quiet period of the day, two participants agreed to participate in the pilot study. The researcher elaborated upon all aspects of the research study and answered all questions asked by the two participants. The two participants signed the informed consent. Afterwards, each participant received a questionnaire whilst the researcher remained in the critical care unit to address any issues pertaining to the questionnaire. Both participants completed the questionnaire before the end of their shift.

When the researcher evaluated the completed questionnaire the responses elicited were not as desired, therefore with the aid of the statistician six questions were added to the questionnaire. Questions that were added were to determine the comprehension of the concept of evidence-based practices and frequency in

accessing online evidence-based sources. The two participants were excluded from the main study to prevent any bias as they had exposure to the questionnaire in the pilot study. All data extracted from the pilot study will be kept in a safe place for a period of five years and will be discarded thereafter.

3.4.6 DATA ANALYSIS

When research questions are addressed through completion of questionnaires, any data collected has to undergo a process called data analysis. In quantitative studies the process only commences once all data is collected from participants (Parahoo, 2006:375). Computers enable data to be transformed into comprehensible results, therefore producing recommendations in accordance with research objectives. Software on computers to analyse data may range from a standard spread sheet to statistical analyses packages, such as Quantum or SPSS depending on the complexity of the research (Moore, 2006:133). The statistician who assisted with the data analysis process used Statistica Version 10. Neuman (2006: 344) describes the systematic processes related to data analysis when handling data that has been outlined below.

Coding data

Coding implies that data is converted into a form that a computer will be able to analyse. The researcher codes the data by assigning a number to a variable. For example: Males as 2 and females as 1. A codebook is a document that the researcher may implement to describe how each variable was coded. Once each variable is coded the data may be captured on the computer. With regard to the research study carried out before commencing with the coding procedure, each questionnaire was checked by the researcher for completeness. Questionnaires that were incomplete marked incorrectly or left blank were to be discarded but each question that was answered according to the instructions given, and included into the main study. A reference number was then allocated to each questionnaire. Once all raw data was acquired the researcher consulted the statistician on how each response should be coded. The statistician took a blank questionnaire and coded the question and responses by giving each one a code which was in numerical form. The data was then captured onto a Microsoft Excel graphical chart

which was constructed by the statistician. The coding process was conducted in a way that would allow data to be analysed.

Entering data

The data is entered into the computer onto a grid format and each row represents one participant with a column representing the variable. Therefore the researcher should be able to match the row and column to the questionnaire. For example, participant 5 will be on row 5 with question 2 being represented as variable number 2. The research study conducted required the researcher to enter the information onto the grid format. Across the horizontal plane each line represented data from the 70 participants and was labelled as P01 to P70. Each vertical row symbolized a variable that was being measured. In each vertical row responses elicited from participants were recorded. Once completed by the researcher the data cleaning processes followed to check that all data entered onto the spread sheet was indeed correct.

Cleaning the data

The researcher checked that data entered was correct by ensuring that there were no coding errors, a process known as data cleaning. Code cleaning checks variables for codes that are incorrect. For example, a variable with a code of 1 to 5 that, when checked has a code of 8, has a coding error. The other method is contingency cleaning which means that two variables are compared for impossible combinations. With regard to the research study that was carried out, the researcher checked data entered into the spread sheet was compared to and verified with the questionnaire to ensure the data captured was correct. The data cleaning process is the responsibility of the researcher and is an absolute vital step in data analysis, as omitting this step would skew results.

Data presentation

Hek, *et al* (2003:91) concur that descriptive statistics are used to describe results whereas with inferential statistics the researcher attempts to link a relationship between variables. According to Saks and Allsop (2007:198) data may be presented via descriptive or inferential statistics.

Descriptive statistics involves the graphs, tables or numerical representation of data as outlined below:

- Graphs: represents a variable through a pie, bar or histogram;
- Tables: The variable is represented according to frequency distribution;
- Numerical: Features of a distribution is represented in a single number.

Inferential statistics are defined as the numerical techniques for making conclusions about a population based upon information obtained from a random sample drawn from that population. Therefore inferential statistics test hypotheses to ascertain whether descriptive results are random or whether there is a relation between variables. In the study conducted data was represented in the graphical and numerical format, which is illustrated in Chapter Four.

3.4.7 QUALITY CONTROL OF THE RESEARCH STUDY

In order to achieve a research study of high quality reliance on a reliable and valid measuring instrument is critical. Through testing a measuring instrument for validity and reliability the soundness of a questionnaire can be established; for without the presence of the two concepts a research study may be deemed insignificant.

3.4.8 RELIABILITY

The term is concerned with investigating if a research study is replicable and dependable is known as reliability (Barker, 2010:145), which is quite often used in quantitative research to measure research variables (Polit & Beck, 2008:196). A study has reliability if the same results are yielded each time a particular technique is applied to the same object (Babbie, 2010:150). There are three types of reliability: stability reliability, representative reliability and equivalence reliability. Stability reliability assesses reliability over a period of time (which is whether the same results will be achieved at any point in time), representative reliability identifies reliability across various groups of people so results should be consistent; and equivalence reliability measures reliability across indicators. Therefore reliability suggests that the same results will be achieved in very similar

situations (Neuman, 2006:190).

To ensure that the measuring instrument was reliable, responses in the pilot study were compared to that of the main study. Responses elicited were very similar indicating that the measuring instrument had a high threshold of reliability. With the aid of a statistician it was concluded that responses were in alignment to concepts being measured. The researcher established reliability by seeking expert opinion in relation to the content of the questionnaire from the supervisor of the research study, the unit manager and the clinical facilitator of the critical care unit.

3.4.9 VALIDITY

The validity of a measurement instrument is the extent to which an instrument measures what it is supposed to (Leedy & Ormrod, 2005:28). According to Polit and Beck (2008:196), validity is a crucial concept for evaluating methods to measure research variables. Validity measures the soundness of a research study and ensures that results are unbiased and well grounded. An instrument is regarded as valid if it reflects characteristics that are being measured. There are also three types of validity that exist: content validity, criterion-related validity and construct validity. However, two types of validity pertain to this research study: namely, content and face validity.

Content Validity is obtained when researchers are sure that the instrument measures what it is supposed to and when researchers try to obtain face validity by allowing others to examine the measuring instrument and try to establish if the instrument measures what it intends to. Another method involves giving the measuring instrument to a panel of experts who then score the instrument according to the degree that the concept being measured is reflected in the instrument (Polit and Beck, 2008:196). To determine content validity the researcher aimed to prove that the content presented in a questionnaire actually measures what it is supposed to. When constructing the questionnaire, a thorough comprehensive background of literature guided the researcher in ensuring relevance of content in the questionnaire. The questionnaire was discussed with experts in the field such as the research supervisor, the statistician, the clinical

facilitator and physicians.

Face validity implies that the data-measuring instrument appears to measure the content that it is supposed to measure. Participants are also more compliant about filling out a questionnaire if they perceive the content of the questionnaire to be in line with the title of the research study (Burns & Grove, 2009:381). The statistician assisted with this type of validity as part of the content was related to barriers to implementing evidence-based practices in a critical care unit. Validity of the study was assured by discussing the content of the questionnaire with various experts in the field, including the clinical facilitator, the supervisor and professional nurses in the critical care unit.

3.4.10 ETHICAL CONSIDERATIONS

Ethics is defined as moral values that are concerned with the degree to which research procedures adhere to the professional, legal and social obligations to the research study participants (Polit & Beck, 2008:753). The American Nurses' Association (ANA) 2001 code of ethics states that five human rights should be protected when conducting research, namely:

- the right to anonymity;
- the right to self-determination;
- the right to privacy;
- the right to fair treatment and
- the right to protection from harm (Schmidt & Brown 2009:229)

Ethical considerations have to be taken into account when conducting research. The researcher will discuss the following ethical principles: informed consent, anonymity, confidentiality and privacy that were relevant to the study.

3.4.11 INFORMED CONSENT

The legal principle is based on an individual's decision to participate in a research study after all relevant information pertaining to the study is provided within a reasonable amount of time. Informed consent is usually provided in a written form

and is considered a legal document (Rebar *et al*, 2011:133). The purpose of the study, procedures, risks, benefits, and the duration of the study are elements to be mentioned in an informed consent (LoBiondo-Wood & Haber, 2010:255). As noted in Moule and Goodman (2009:60) emphasis should also be on the technical aspects of how information is provided. The informed consent form should be easily understood, unambiguous and easy to read. The tone of the information should be invitational and not coercive. All forms provided should also be dated with headings that are clear. Ruane (2005:19) adds that informed consent also implies that a participant may withdraw from the study at any time.

Before the main study was conducted, the research proposal had to be approved by various structures such as the DRC (Departmental Research Committee) and the FRTI (Faculty of Research, Technology and Innovation) at the Nelson Mandela Metropolitan University. The research study was approved at the FRTI (Faculty of Research, Technology and Innovation) level with the allocation of the reference number: HII-HEA-NUR-008. A participant letter (Annexure B) and an informed consent form was constructed before the main research study (Annexure C). Before the pilot and main studies were conducted consent was granted from hospital management (Annexure D) and the unit manager (Annexure E). In (Annexure F) written consent was granted from the nursing manager where the study was conducted.

During the research study each section of the form was thoroughly explained to participants so that they could also pose any questions or state sections that needed clarification. Once participants gave written consent they could participate in the research study. However, they were aware that they could withdraw from the study at any point in time if they wished to.

3.4.12 ANONYMITY AND CONFIDENTIALITY

Anonymity implies that the participant's identity cannot be linked to individual responses. Confidentiality exists when identities and information provided by participants are kept private and not divulged (LoBiondo-Wood & Haber, 2010:253). Johnson and Christensen (2008:119) concur and elaborate by stating

that anonymity means that not even the researcher can uncover the participant's identity. The context of confidentiality in a research study refers to the participants' identity not being revealed to the researcher. Wood and Ross-Kerr (2011:37) adds that confidentiality ensures that all records are kept closed and only the researcher will have access to the records.

In the research study that was performed the questionnaires (Annexure A) handed out to participants were not marked and names were not required as the researcher allocated a reference number to each questionnaire after the data-collection process. Participants were also instructed to sign the informed consent form (Annexure C) with the assurance that information collected would be kept strictly private. Therefore participants' anonymity was assured through these measures. During the study confidentiality was asserted as the researcher exclusively handled the completed questionnaires. Upon completion of the questionnaire participants were instructed to deposit it into a sealed box that was kept within the unit. When the boxes were collected from the unit, only the researcher opened the sealed boxes with the data. Each questionnaire was given a reference number and all of them will be kept in safe storage for a period of five years for audit purposes, after which all data will be destroyed.

3.4.13 PRIVACY

Privacy is maintained when the behaviour or responses of participants are in no way divulged to anyone except the researcher (Leedy & Ormrod, 2005:102). When the research study was conducted there were no factors that existed that could threaten privacy as data obtained were only accessed by the researcher. All data is stored in a safe place and will be kept for a period of 5 years. Participants did not disclose their names on questionnaires as a reference number was allocated to each questionnaire.

3.5 SUMMARY OF CHAPTER

This chapter comprehensively explained the research design and method employed when conducting the research study. The systematic application of a research design and methods are imperative when conducting any research

study. A quantitative, descriptive, exploratory and contextual design was adopted to ascertain barriers to the implementation of evidence-based practices within a critical care unit. In the following chapter a description of the results extracted and data analysis will be discussed.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION OF FINDINGS

4.1 INTRODUCTION

Three chapters have been discussed thus far. Chapter One introduced the reader to the method known as evidence-based practices. Chapter Two delved into a literature review on the topic, whereas Chapter Three focused on the research methodology that was applied when conducting the research study to identify barriers to the implementation of evidence-based practices within a critical care unit.

This chapter will describe:

- the sample of professional nurses used in the study and
- a discussion of all results obtained from the distribution of self-administered questionnaires to professional nurses in a critical care unit at a private hospital within the Nelson Mandela Metropole

The goal of this section is to address the research objectives which are as follows:

- to explore and describe barriers to the implementation of evidence-based practices in a critical care unit and
- to make recommendations to enhance implementation of evidence-based practices in a critical care unit

4.2 TARGET POPULATION OF PROFESSIONAL NURSES

A sample of seventy professional nurses (n=70) working in a private hospital within the Nelson Mandela Metropole participated in the research study. The sample included fifty-eight permanently employed professional nurses and twelve professional nurses working through a nursing agency. In Figure 4.1 the sampling process of the research study is outlined. Seventy-five questionnaires were handed out to participants at the commencement of the data- collection phase. However, some questionnaires were not returned before the end of the shift and one participant decided not to participate anymore; therefore

seventy questionnaires were returned. The response rate was 93%.

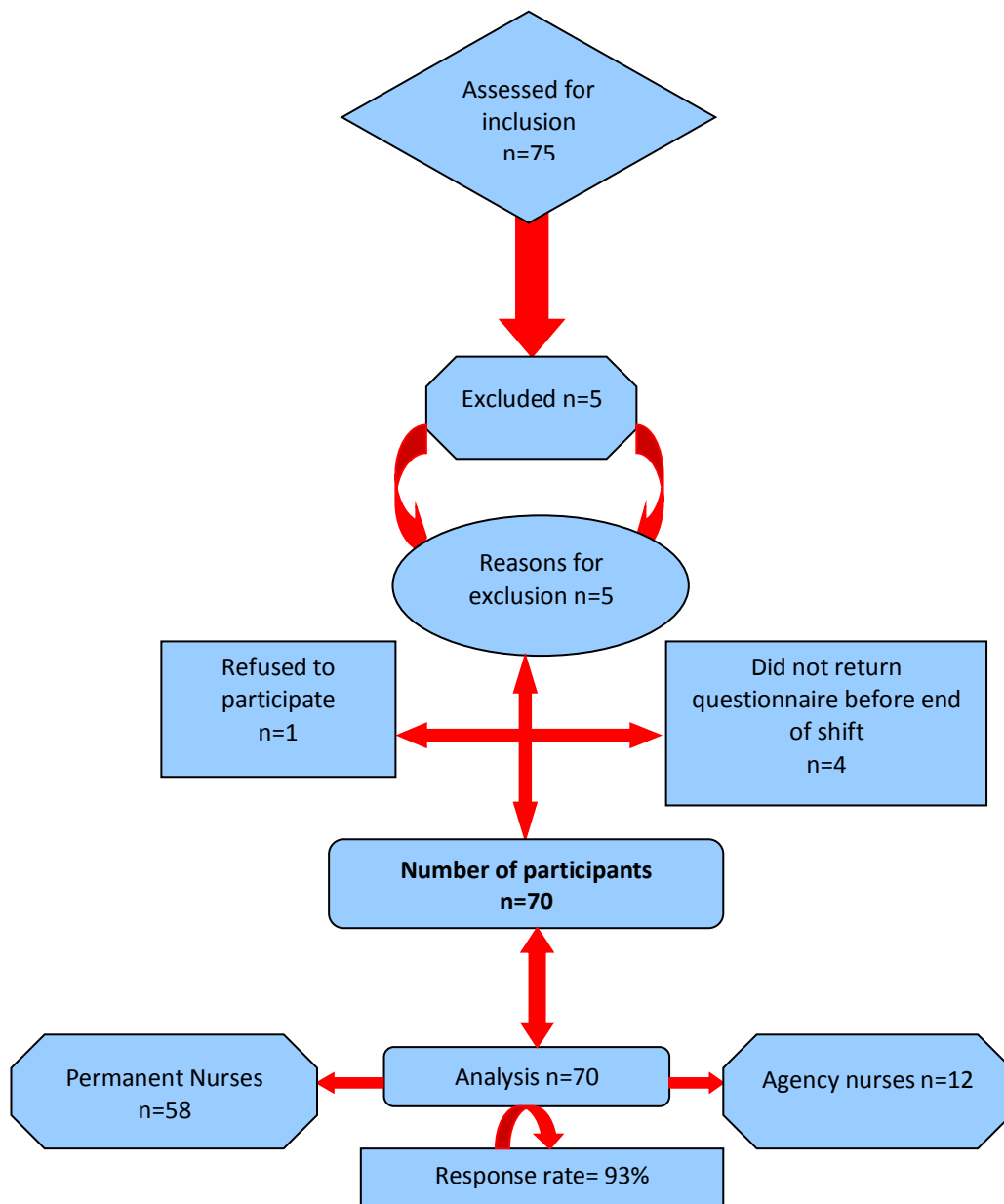


Figure 4.1: The sampling process

4.3 DATA ANALYSIS APPROACH

The data analysis approach was comprehensively described in Chapter Three. Data was analysed with the aid of a statistician; the programme used was Statistica version 10 and all data was entered using a spread sheet and frequency distributions were established. Descriptive statistics in this section will be displayed through tables and bar-graph charts.

All results presented in this chapter are from the research study: barriers to implementation of evidence-based practices within a critical care unit and are from the following:

- Section A: Demographic data
- Section B: Implementation of evidence-based practices
- Section C: Barriers related to knowledge of the nurse with regard to evidence-based practice
- Section D: Barriers to finding and reviewing evidence
- Section E: Barriers to implementing evidence-based practices based on the relevant resources
- Section F: Barriers related to facilitation and support required for evidence-based practice implementation

4.4 DEMOGRAPHIC DATA

The demographic profile of participants who participated in the research study will be elaborated upon in this section. A list of all items that will be discussed will be presented in the Textbox 4.1.

Textbox 4.1: Demographic data

4.4.1	Results
4.4.1.1	Gender
4.4.1.2	Age in years
4.4.1.3	Years of employment in the critical care unit
4.4.1.4	Current position in the critical care unit
4.4.1.5	Additional qualification with SANC
4.4.1.6	Specific additional qualification
4.4.2	Discussion pertaining to demographic profile
4.4.3	Summary of demographic profile

4.4.1 RESULTS

The results of the demographic data obtained from participants where the study took place will be displayed in Table 4.1.

Table 4.1: Demographic data

1. Indicate your gender	No:	%
Male	7	10%
Female	63	90%
2. Indicate your age in Years		
<25 years	2	3%
25-29 years	9	13%
30-39 years	18	26%
40-49 years	31	44%
>50 years	10	14%
3. Indicate the years you have been working in a critical care unit		
<1 year	5	7%
1-4 years	23	33%
5-9 years	10	14%
10-14 years	16	23%
>15 years	16	23%
4. As a professional nurse what position do you hold in a critical care unit?		
Permanently employed professional nurse on shift	35	50%
Agency worker	12	17%
Shift leader	19	27%
Clinical facilitator	0	0%
Unit manager	4	6%
5. As a professional nurse do you hold an additional qualification with SANC		
Yes	23	33%
No	47	67%
6. * If yes, please specify		
Master's degree in Critical Care nursing	2	3%
Honours degree in Critical Care nursing	6	9%
Diploma in Critical Care nursing	6	9%
Neonatal critical care nursing	1	1%
Nursing education	1	1%

Nursing administration	5	7%
Infection control nursing	2	3%
Paediatric nursing	2	3%
Occupational nursing	2	3
*Please note that some participants were in the possession of more than one additional qualification		

4.4.1.1 Gender

From the 70 participants who participated in the research study: barriers to the implementation of evidence-based practices in a critical care unit n=7(10%) were male and n=63 (90%) were female.

4.4.1.2 Age in years

Participants were required to stipulate their age in Section A of the self-administered questionnaire. There were n=31(44%) who were between 40 and 49 years age. A proportion of participants n=18(26%) participants were between the ages of 30 and 39 years while n=10(14%) were 50 years and older. There were some participants, n=9(13%) were between 25 to 29 years of age whilst there were n=2(3%) who were younger than 25 years of age.

4.4.1.3 Indicate the years you have been working in a critical care unit

The purpose of the section was to ascertain the time periods that participants worked in the critical care unit. Of the seventy participants there were n=23(33%) who had worked in the critical care unit for a period of 1 to 4 years. The study findings indicated there were n=16(23%) who had worked in the critical care unit for 10 to 14 years whilst there were n=16(23%) who had worked for a period of 15 years or more. There was a proportion of participants, n= 10(14%), who had worked in the critical care unit for a period of 5 to 9 years. Lastly, n=5(7%) indicated that they had been working in the critical care unit for less than one year.

4.4.1.4 Current position within the critical care unit

From the seventy participants that participated in the study there 58 professional nurses that were permanently employed. From the 58 professional nurses there were n=35(50%) that rotated from dayshift to nightshift; n=19(27%) who were shift leaders that were responsible for taking charge of the shift; and n=4(6%) who were unit managers. The remaining participants, n=12(17%), were professional nurses working through a nursing agency.

4.4.1.5 Additional qualifications with the South African Nursing Council

Results obtained from the demographic profile that is presented in Table 4.1 indicate that n=47(67%) do not hold an additional qualification with the South African Nursing Council. From the remaining participants n=23(33%) possess an additional qualification other than the basic four-year nursing diploma or degree for registration as a professional nurse.

4.4.1.6 Specific additional qualification

Of the seventy participants only 23% have additional post-basic qualifications. In Table 4.1, Question 6, there were also participants who had more than one additional qualification; therefore the percentages and numbers do not correlate with Question 5. Derived from the data analysis n=2 possessed two additional qualifications whilst n=1 possessed three additional qualifications with the South African Nursing Council.

With regard to an additional qualification n=6(9%) have an Honours degree in Critical Care Nursing and n=6(9%) have their Diploma in Critical Care Nursing. The results indicate that n=5(7%) have a Diploma in Nursing Administration. A proportion of participants, n=2(3%), who have their Masters degree in Critical Care Nursing. Of the seventy participants n=2(3%) have an additional Diploma in Infection Control Nursing; n=2(3%) have a qualification in Paediatric Nursing whilst n=2(3%) have an additional qualification in Occupational Nursing. A proportion of participants, n=1(1%), have Neonatal Nursing and n=1(1%) have a Diploma in Nursing Education.

4.4.2 DISCUSSION PERTAINING TO THE DEMOGRAPHIC PROFILE

The South African population comprises 47.9 million people. The patient population in critical care units in South Africa differs vastly from the rest of the world. Patients are admitted to critical care units nationally, for instance, due to increased prevalence of trauma such as gunshot wounds, stabbings, falls and motor vehicle accidents (De Beer, Brysiewicz & Bhengu, 2011:6). In a national audit to establish the availability of critical care resources it was found that there was a total of 4168 critical care beds in South African hospitals (Bhagwanjee & Scribante, 2008:4).

Gender was discussed under section A of the self-administered questionnaire. According to the South Africa Nursing Council (SANC), statistics were obtained by following the link (<http://www.sanc.co.za>). The SANC 2011 geographical statistics reflect that there are 118 262 professional nurses in South Africa. In the Eastern Cape Province there are 13 017 female professional nurses and 1101 male professional nurses yielding a total of 14 118. The estimated population-to nurse ratio in the Eastern Cape is 484:1. The findings of this research study indicated participants comprised 90% females and 10% males. The nursing profession is traditionally known for being a female-dominated profession, and the demographic profile from the research study is congruent with statistics from the South African Nursing Council.

The target population that took part in the research study varied in **age**. Participants had to indicate their age group in the self-administered questionnaire under the demographic data section. The South African Nursing Council (SANC) 2011 age statistics determined that, of the professional nurses 30% were between the ages of 40 and 49 years; 30% were between 50 and 59%; and 19% were 30-39 years of age. According to SANC the minority of professional nurses were younger than 30 years old. The data suggests that professional nurses registered with the South African Nursing Council are an ageing population. The findings of this research study revealed that of the participants 44% were between the ages of 40 and 49 years of age. The research findings are congruent with statistics from the South African Nursing Council.

Years that participants have worked in a critical care unit will be discussed in this section. Bhagwanjee and Scribante (2008:5) who performed a national audit ascertained that 43% of professional nurses working in critical care units in South Africa had between 0-5 years of critical care experience. Findings of this research study indicate that 33% of the professional nurses have 1 to 4 years of experience working in a critical care unit. The research findings are congruent with the statistics from the national audit that was conducted.

Position in the critical care unit was in the demographic data section.

De Beer, *et al* (2011:6) comment that professional nurses emigrating to other countries, coupled together with few entering the profession, has created a dilemma which has been solved by allowing agency workers to alleviate staff shortages. Challenges have arisen from sourcing agency workers though, because standards of care have been lowered and medico-legal risks have increased. Another reality is that agency workers may be permanently employed at one institution and work extra hours elsewhere; therefore level of functioning deteriorates as they do not get sufficient rest. Findings of this research study indicate that 83% of the professional nurses who participated in the study were permanently employed whilst 17% worked through a nursing agency.

Additional qualifications in the critical care unit.

In the national audit done in 2004-2005, it was estimated that 25.6% of nurses working within a critical care unit were ICU trained. The ideal should be 75% of professional nurses within any critical care unit. Statistically there was a shortage reported of 7 920 critical care nurses in South Africa (Scribante & Bhagwanjee, 2007:1317). In an ideal critical care unit there should be an intensivist that makes major decisions and collaborates with the rest of the team. Statistics have deduced that an intensivist is present in only in 4% of the critical care units in South Africa (Bhagwanjee & Scribante, 2008:5). Findings of this research study indicated that 33% of the participants had an additional qualification. Of those participants only 21% have an additional qualification that pertains to critical care nursing.

4.4.3 SUMMARY OF THE DEMOGRAPHIC PROFILE

The following results from the demographic data section were of significance. Of the seventy participants there were n=63(90%) who were female. With regard to the age group the predominant age group was n=31(44%) who were between 40 and 49 years of age. A proportion of participants, n=23(33%), had worked in a critical care unit for a period of 1 to 4 years. Of the seventy participants, n=58(83%), were permanent employees in the critical care unit. There were n=47(67%) of participants who did not possess an additional qualification with the South African Nursing Council.

4.5 IMPLEMENTATION OF EVIDENCE-BASED PRACTICES

This section comprised sections to explore how often nurses accessed evidence-based practices, their understanding of evidence-based practice and which online resources they accessed. For this section dichotomous, forced choice, open-and closed-ended questions were used in the questionnaire to yield relevant data.

Textbox 4.2: Implementation of evidence-based practices

- 4.5.1 Results
 - 4.5.1.1 Degree of familiarity with evidence-based practices
 - 4.5.1.2 The concept known as “evidence-based practice”
 - 4.5.1.3 Frequency of consulting evidence or to support clinical decision-making and nursing practice in the critical care unit
 - 4.5.1.4 Frequency of accessing best-practice guidelines in the critical care unit
 - 4.5.1.5 Information sources that are consulted to guide clinical decision-making
 - 4.5.1.6 Information sources that are used on which to base clinical decision-making
 - 4.5.1.7 Frequency of accessing online evidence-based sources
 - 4.5.1.8 Source to consult when weaning the patient from the mechanical ventilator
 - 4.5.1.9 Source of reference for prevention of ventilator-associated pneumonia
- 4.5.2 Discussion pertaining to the implementation of evidence-based practices.

4.5.1 RESULTS

The results were obtained from the seventy participants who completed the questionnaire. The section explored familiarity of evidence-based practices. The data derived will be schematically presented using bar graphs.

4.5.1.1 Degree of familiarity with evidence-based practices

Of the seventy participants $n=24(34\%)$ were to a moderate extent familiar with evidence based practices while $n=23(33\%)$ were to a great extent familiar with evidence-based practices. A proportion of participants, $n=12(18\%)$, were completely familiar with evidence-based practices; $n=8(11\%)$ were to a little extent familiar with the term evidence-based practice whilst $n=3(4\%)$ were not at all familiar with evidence-based practice.

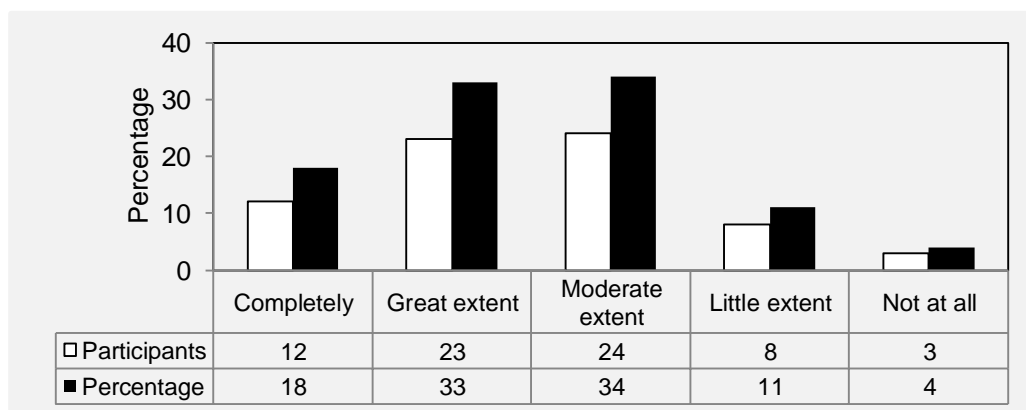


Figure 4.2: Degree of familiarity with evidence-based practices

4.5.1.2 The concept known as “evidence-based practice”

Figure 4.3 depicts the results from participants with regard to their understanding of evidence-based practice. Of the seventy participants $n=38(54\%)$ identified the correct answer, namely that evidence-based practice is the conscientious, explicit and judicious use of the current best evidence in making decisions about the care of patients. The other participants, $n=24(34\%)$, stated that their understanding of evidence-based practices was skills taught during their training as a professional nurse which is an incorrect answer whilst $n=6(9\%)$ were of the opinion that evidence-based practices were skills that were taught in the unit, which was also incorrect. The remaining participants, $n=2(3\%)$, thought that evidence-based practice referred to any article that was in a medical or nursing journal, which is

also incorrect.

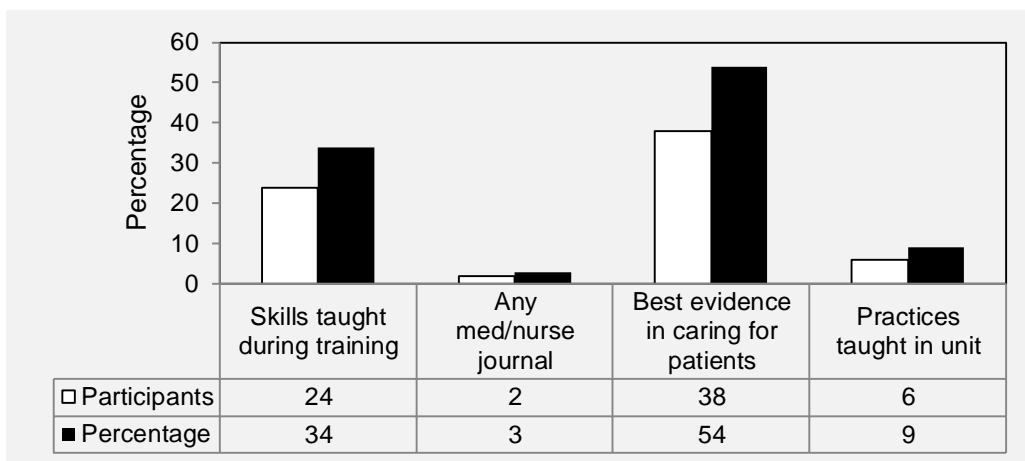


Figure 4.3: The concept known as “evidence-based practice”

4.5.1.3 Frequency of consulting evidence to support clinical decision-making and nursing practice in the critical care unit

From the data analysis of the seventy participants, n=40(57%) indicated that they only consulted evidence or research occasionally to support their clinical decision-making in the critical care unit. Some participants, n=16(23%), stated that they accessed evidence 1 to 3 times per month. There were some participants, n=8(12%), that accessed evidence or research on a weekly basis to support their clinical decision-making processes in the critical care unit. Of the seventy participants, n=5(7%), stated that they accessed evidence or research 1 to 3 times per year while n=1(1%) revealed that they never accessed evidence or research to guide clinical decision-making.

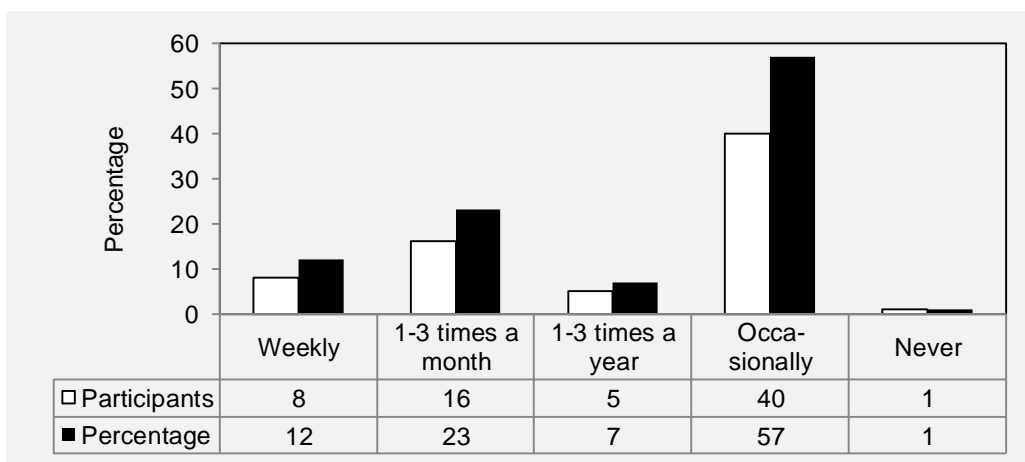


Figure 4.4: Frequency of consulting evidence to support clinical decision-making and nursing practice in the critical care unit

4.5.1.4 Frequency of accessing best-practice guidelines in the critical care unit

Figure 4.5 depicts the results of how often participants' access best-practice guidelines in the critical care unit. A total of $n=35$ (50%) revealed that they accessed evidence-based guidelines on an occasional basis. There were some participants, $n=14$ (21%), who accessed guidelines 1 to 3 times per month. However, $n=10$ (14%) consulted the best-practice guidelines in the critical care unit at least weekly. There were some participants who accessed the guidelines less frequently; $n=8$ (11%) did so 1 to 3 times a year whilst $n=3$ (4%) never accessed best-practice guidelines.

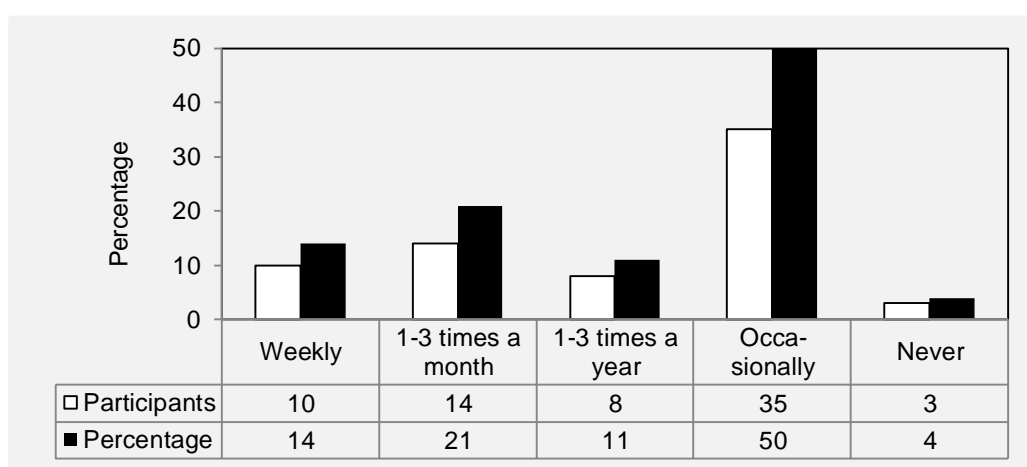


Figure 4.5: Frequency of accessing best-practice guidelines in the critical care unit

4.5.1.5 Information sources that are consulted to guide clinical decision-making

The statement was aimed toward ascertaining where participants sought information to guide them in decision-making processes. It is evident from Figure 4.6 that participants $n=30$ (43%) ask their colleagues or peers when seeking information to guide their decision-making. Of the seventy participants $n=24$ (35%) indicated that they preferred to search the internet when searching for information to guide them in rendering nursing care to critically ill patients; $n=8$ (11%) chose to read textbooks in searching for information to guide them in clinical decision-making and the remaining participants, $n=8$ (11%), stated that they preferred to access journal articles.

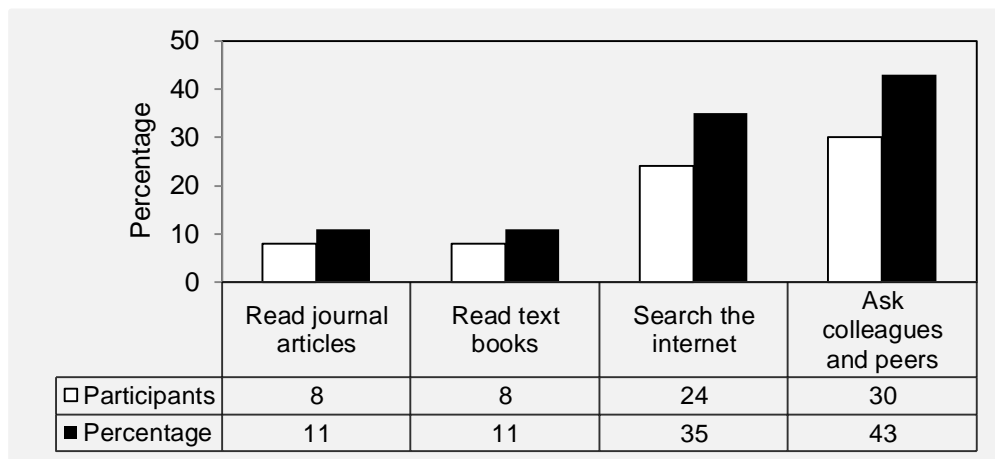


Figure 4.6: Information sources that are consulted to guide clinical decision-making

4.5.1.6 Information sources that are used on which to base clinical decision-making

The statement was aimed at determining from the participants on what sources they based their clinical decisions. The responses are reflected in Figure 4.7. The findings revealed that n=30(43%) based their clinical decisions on the latest available evidence. However, n=27(39%) indicated that they relied on knowledge and skills that they had been taught in the critical care unit. There was a proportion of participants, n=12(17%), that preferred to ask their colleagues or peers when making clinical decisions. The remaining participants, n=1(1%), indicated that they based their decisions on ritualistic practices.

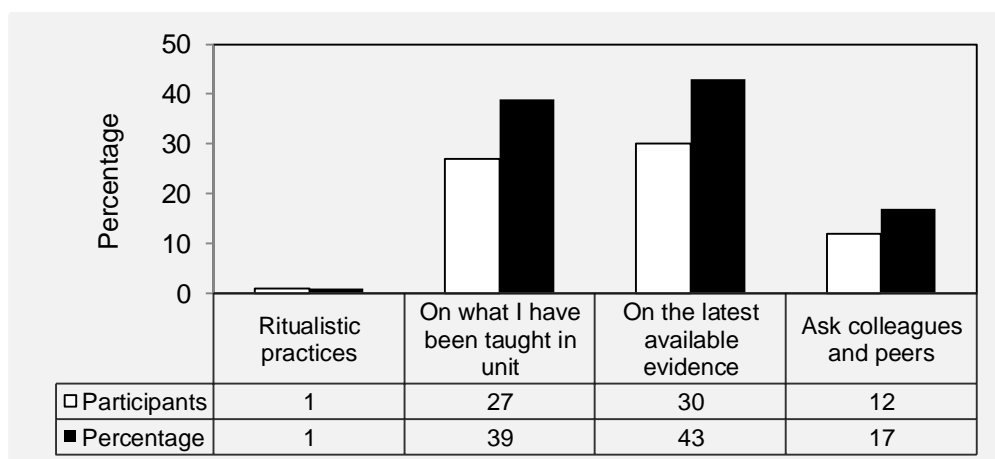


Figure 4.7: Information sources that are used on which to base clinical decision-making

4.5.1.7 Frequency of accessing online evidence-based sources

Table 4.2 graphically displays the results for the frequency of accessing online evidence-based sources from the list of twelve that were presented in the questionnaire. In Table 4.2 the most frequently accessed online sources are Google and Wikipedia. Participants also had the option to specify whether there were other sources that they used. Of the seventy participants $n=2(3\%)$ indicated that they accessed Medscape whilst $n=1(1\%)$ accessed Elsevier.

Table 4.2: Frequency of accessing online evidence-based sources

Online evidence-based sources	Never		Seldom		Frequent	
	Participants	%	Participants	%	Participants	%
EBSCO host	62	89	2	3	6	8
MEDLINE	50	72	10	14	10	14
Pubmed	58	82	6	9	6	9
The Cochrane Collaboration	64	91	4	6	2	3
National Guideline Clearinghouse	60	86	7	10	3	4
Registered Nurses Association of Ontario (RNAO)	61	87	5	7	4	6
Johanna Briggs Institute (JBI)	61	87	5	7	4	6
World-Views on Evidence-based Nursing	52	74	10	14	8	12
The International Journal of Evidence-based Healthcare	49	70	12	17	9	13
Google Scholar	45	65	10	14	15	21
Google	9	13	20	28	41	59
Wikipedia	32	46	12	17	26	37
Medscape			2	3		
Elsevier			1	1		

4.5.1.8 Source to consult when weaning the patient from the mechanical ventilator

Of the seventy participants $n=35(50\%)$ indicated they would refer to information taught in the critical care unit to assist them in weaning a patient from a mechanical ventilator, which was the incorrect answer. The only recommended answer that was identified by $n=21(30\%)$ indicated they would follow the latest best-practice guideline. There was a proportion of participants, $n=13(19\%)$, who stated that they would ask a colleague whilst $n=1(1\%)$ indicated they would consult their critical care textbook. The results are illustrated in Figure 4.8.

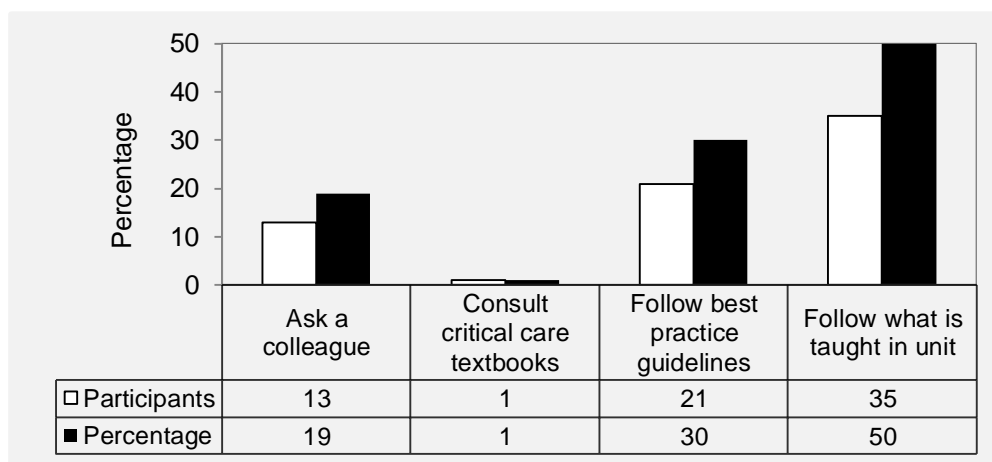


Figure 4.8: Source to consult when weaning the patient from the mechanical ventilator

4.5.1.9 Source of reference for the prevention of ventilator-associated pneumonia (VAP)

The purpose of the question was to ascertain to which source participants would refer a novice nurse for, the prevention of ventilator-associated pneumonia (VAP). Of the participants $n=39(56\%)$ listed referring the novice nurse to the latest best-practice guideline, which was the recommended answer. There was a percentage of incorrect responses from, $n=26(37\%)$ who would refer her to the Standard of Operating Practice (SOP) which is an institution's policy and procedure manual; $n=3(4\%)$ participants that stated they would refer her to a critical care textbook and the remaining participants, $n=2(3\%)$, revealed that they would tell her to Google the term "ventilator-associated pneumonia".

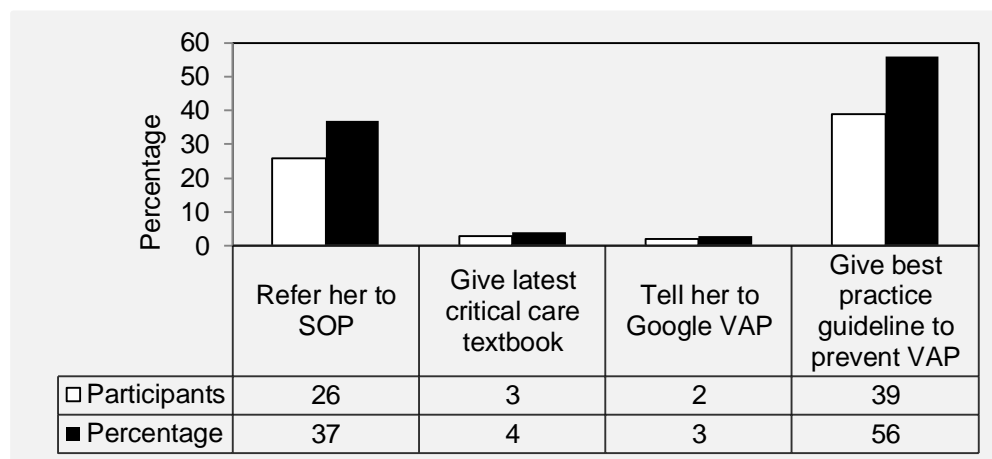


Figure 4.9 Source of reference for the prevention of ventilator associated pneumonia (VAP)

4.5.2 DISCUSSION PERTAINING TO THE IMPLEMENTATION OF EVIDENCE-BASED PRACTICES

A survey conducted by Koehn and Lehman (2007:213) revealed that **the utilisation of evidence-based practice might be unfamiliar to professional nurses**. According to Alspach (2006:11), findings from their study revealed that 31% of participants were completely familiar with the term known as evidence-based practices; 45% were moderately familiar while 24% were unfamiliar with evidence-based practice.

The findings of this research study revealed that 34% of the participants were moderately familiar with the implementation of evidence-based practice. The study findings are congruent with the above-mentioned studies.

Aveyard and Sharp (2011:6) highlight that the **concept known as “evidence-based practice”** has been the most widely quoted by Sackett *et al* (2000) in 1996 who explained that evidence-based practice is the conscientious, explicit and judicious use of the current best evidence in making decisions about the care of all patients. Polit and Beck (2012:25) add that in the year 2000 Sackett *et al* (2000) refined the definition of evidence-based practice by stating that evidence-based practice was the integration of the best evidence while taking into account patients’ values and clinical expertise of practitioners. Craig and Smyth (2007:10) state that nurses must access the latest evidence that has been critically

appraised and then apply findings to a similar clinical situation, taking patient preferences into account and the clinical expertise of professional nurses.

The findings of this research study revealed that 54% of the participants indicated that evidence-based practice was the conscientious, explicit and judicious use of the best evidence in making decisions about the care of critically patients, which was the correct answer.

In a survey conducted by Pravikoff *et al* (2005:46), participants had to indicate **frequency of consulting information-based evidence or best-practice guidelines**. The survey revealed that 33% indicated they sought information on a weekly basis; 29% accessed information several times a week; 27% did so on an occasional basis while 12% accessed information monthly. In a survey that was conducted by Thiel (2008:186), 62% of the participants indicated that they read journal articles on a monthly basis whilst 39% stated that they searched for information on a weekly basis to guide them in caring for patients.

The findings of this research study revealed that 57% of the participants searched for evidence or research on an occasional basis to support clinical decision-making in caring for the critically ill patient. With regard to best-practice guidelines findings from this research study indicated that 50% of the participants sought best-practice guidelines on an occasional basis to assist them with clinical decision-making. The findings from this research study are congruent with the above- mentioned studies.

In a survey done by Pravikoff *et al* (2005:46) participants were asked **which information sources they consulted to guide clinical decision-making in the care of patients**. The results from that survey revealed that 56% of participants never sought assistance from a librarian; 52% indicated that they frequently asked colleagues or peers when seeking information; 42% stated that they never accessed bibliographical databases; and 42% that read journals or textbooks frequently. In a survey by Rolfe *et al* (2008:440) 89% of the participants indicated they would ask their peers or colleagues when seeking information.

The findings of this study revealed that 43% of the participants would consult their

colleagues or peers when seeking information. The findings of this study are congruent with the above-mentioned studies.

Range of information sources used by nurses on which to base clinical decision-making. A survey was done by Gerrish *et al* (2008:66) with 598 participants who had to indicate which sources they frequently used. The highest-ranked sources were tradition or ritual, intuition, information obtained from peers or colleagues and information from policy/procedure manuals. However, 50% of the participants indicated that they were novices at integrating research into practice. In a survey done by Rolfe *et al* (2008:440), 69% of participants indicated they used their intuition to guide them and 49% referred to best-practice guidelines on which to base clinical decisions.

The findings of this research study revealed that 43% referred to the latest evidence to guide them with clinical decision-making. The findings of this study are congruent with the above-mentioned studies.

Evidence-based resources can be accessed via diverse sources, namely, the Joanna Briggs Institute (JBI) which provides best practices in the form of summaries on topics that pertain to nursing. The National Guideline Clearinghouse provides good quality guidelines on various topics that comprise the best evidence. The Cochrane Collaboration contains a list of systematic reviews that have been formulated primarily from randomized control trials. Bibliographic databases such as MEDLINE and Pubmed may be helpful as journal articles are on these online resource sites. MEDLINE has a large medical database that comprises journal articles. Pubmed is an online database that has been created by the National Centre for Biotechnology Information at the US National Library of Medicine (Craig & Smyth, 2007:61).

Jo Brown (2009:251) mentions that EBSCO host is a search engine that focuses on a topic of interest. The Registered Nurses' Association of Ontario (RNAO) disseminates best-practice guidelines which are aimed toward professional nurses. Craig and Smyth (2007:320) further explain World-views on Evidence-based Nursing and the International Journal of Evidence-based Healthcare

provides the best quality research evidence through commentaries or concise summaries. Barker (2010:42) adds search engines such as Google or Wikipedia which are useful but information on the site lacks quality control and in many instances is not scientific. Courtney and McCutcheon (2010:82) state that Google Scholar is a search engine that allows the researcher to search using specific terms.

In a survey by Pravikoff *et al* (2005:49) findings indicate that 87% of the participants never accessed databases such as CINAHL and 69% never used MEDLINE. The findings of this research study which are illustrated in Table 4.2 indicate that 59% of the participants frequently use Google when searching for information. The findings of this research study are congruent with the above-mentioned study.

Best-practice guidelines are derived from systematic reviews that are from the best research evidence and recommendations are graded according to the level of evidence (Jo Brown, 2009:219). Courtney and McCutcheon (2010:60) describe clinical guidelines as a mechanism that bridges the research practice gap. Through using the best evidence that is graded according to the level of evidence and recommendations, variances in practices can be eliminated.

In response to which source to consult when weaning the patient from the mechanical ventilator, the findings from this research study indicated that 50% of the participants would follow what was taught in the unit, which was incorrect. In response to what reference to recommend for the prevention of ventilator-associated pneumonia (VAP), the findings of this research study indicated that 56% of participants would refer to the latest best-practice guideline, which is the correct response.

4.6 BARRIERS RELATED TO KNOWLEDGE OF THE NURSE WITH REGARD TO IMPLEMENTATION OF EVIDENCE-BASED PRACTICE

Barriers to the implementation of evidence-based practice may occur at the individual level of the professional nurse in the critical care unit. There were 14

statements that were presented to professional nurses. The section comprised a 5-point Likert scale. Participants had to choose one response to each statement ranging from “strongly agree” to “strongly disagree”.

Textbox 4.3: Barriers related to knowledge of the nurse with regard to implementation of evidence-based practice

4.6.1 Results

4.6.1.1 Insufficient time to change to evidence-based practice

4.6.1.2 Clinical decisions are based on information gained during training as a professional nurse

4.6.1.3 Intuition about what seems to be “right” for the critically ill patient guides decision-making.

4.6.1.4 Minimal benefits for the nurse or patient when implementing evidence-based practice in the critical care unit.

4.6.1.5 Nurses in the critical care unit should not be responsible for conducting their own literature reviews

4.6.1.6 Critical reflection is not necessary when new treatments and medications are prescribed in the care of the critically ill patient.

4.6.1.7 Implementing evidence-based practices is a waste of time.

4.6.1.8 Minimal rewards for using research findings

4.6.1.9 Resistance to implementing evidence-based practice

4.6.1.10 Traditional/ritual practices outweigh evidence-based practices.

4.6.1.11 Evidence-based practices do not improve the quality of patient care.

4.6.1.12 Evidence-based practices are not necessary for daily practice in the critical care unit

4.6.1.13 Heavy workload

4.6.1.14 Lack of efficient evidence translation into clinical practice.

4.6.2 DISCUSSION PERTAINING TO BARRIERS RELATED TO KNOWLEDGE OF THE NURSE WITH REGARD TO IMPLEMENTATION OF EVIDENCE-BASED PRACTICE

The results that have been derived from data analysis will be discussed. The purpose of the section was to explore barriers related to knowledge of the nurse with regard to evidence-based practice.

4.6.1.1 Insufficient time to change to evidence-based practice

Of the seventy participants $n=27(39\%)$ disagreed whilst $n=11(15\%)$ strongly disagreed that they lacked time or commitment to change to evidence-based practice. However, $n=12(16\%)$ agreed while a further $n=6(9\%)$ strongly agreed with the statement. The remaining participants, $n=14(21\%)$, had a neutral stance toward the statement. Results are displayed in Figure 4.10.

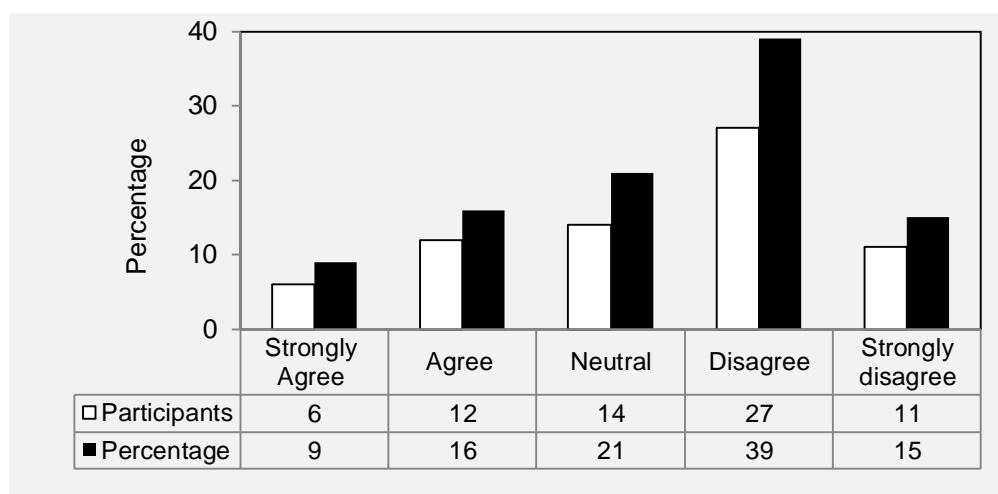


Figure 4.10: Insufficient time to change to evidence-based practices

4.6.1.2 Clinical decisions are based on information gained during training as a professional nurse

The statement was aimed at exploring if participants based their clinical decisions on theoretical and practical skills they had obtained during training as a professional nurse. Results indicate that $n=41(59\%)$ agreed while $n=18(25\%)$ strongly agreed that they based their clinical decision making in caring for the critically ill patient on information that they had been taught during their training as a professional nurse. A proportion of participants, $n=4(6\%)$, disagreed with the statement while $n=1(1\%)$ strongly disagreed that they based clinical decision-making on information they had obtained during their training. There were $n=6(9\%)$ who had a neutral opinion about the statement.

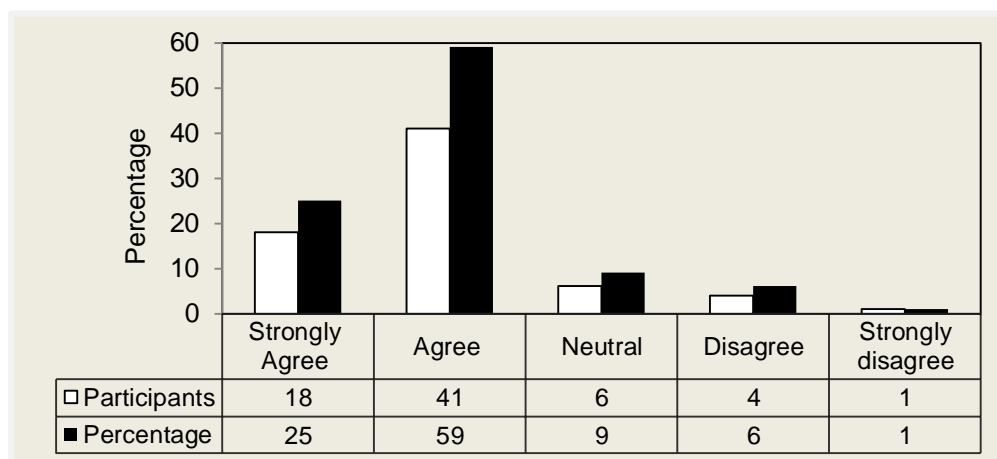


Figure 4.11: Clinical decisions are based on information gained during training as a professional nurse

4.6.1.3 Intuition about what seems "right" for the critically ill patient guides decision-making

The purpose of the statement was to ascertain if participants used their intuition as part of clinical decision-making in caring for the critically ill patient. Results are graphically displayed in Figure 4.12. Of the seventy participants n=25(36%) agreed while n=12(17%) strongly agreed that they used their intuition in decisions concerning patient care in the critical care unit. There were n=14(20%) that disagreed while n=12(17%) strongly disagreed that intuition guided their clinical decision-making in caring for patients. The remaining participants, n=7(10), had a neutral opinion about the statement.

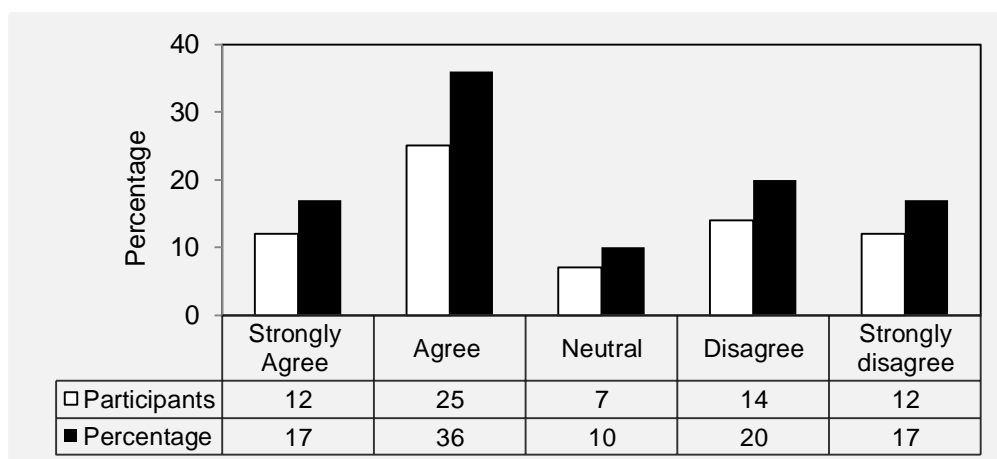


Figure 4.12: Intuition about what seems to be 'right' for the critically ill patient guides decision-making

4.6.1.4 Minimal benefits for the nurse or patient when implementing evidence-based practice in the critical care unit

As illustrated in Figure 4.13, of the seventy participants $n=33(47\%)$ disagreed whilst $n=26(37\%)$ strongly disagreed that there were minimal benefits for the nurse or patient when implementing evidence-based practices in the critical care unit. There were some participants, $n=6(9\%)$, who had a neutral stance toward the statement. A proportion of participants, $n=3(4\%)$, agreed with the statement while $n=2(3\%)$ strongly agreed that there were minimal benefits with implementing evidence-based practice in the critical care unit.

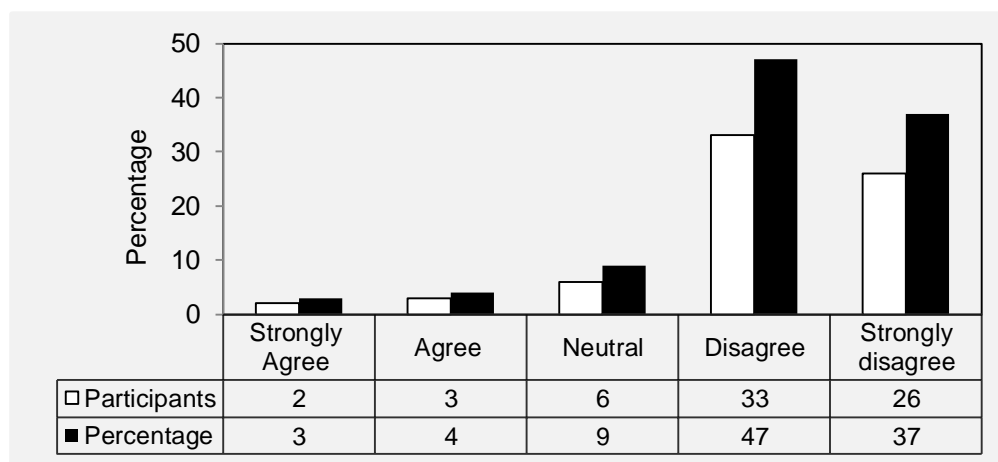


Figure 4.13: Minimal benefits for the patient or nurse when implementing evidence-based practice in the critical care unit

4.6.1.5 Nurses in critical care units should not be responsible for conducting their own literature reviews

In response to the statement $n=22(31\%)$ disagreed while $n=8(11\%)$ strongly disagreed with the statement. There were $n=16(23\%)$ who agreed with the statement while $n=6(9\%)$ strongly agreed with the statement. There were $n=18(26\%)$ who had a neutral stance toward the statement. The results are schematically represented in Figure 4.14.

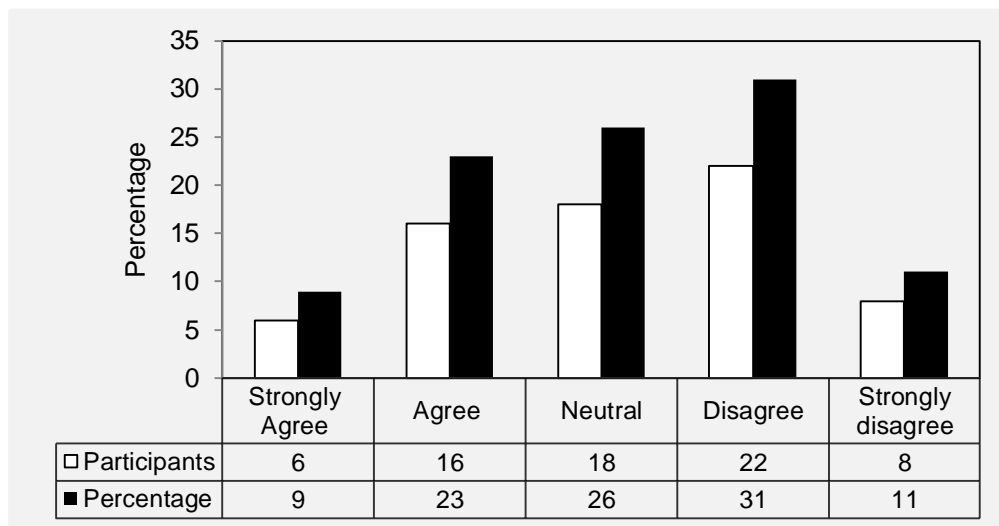


Figure 4.14: Nurses in the critical care unit should not be responsible for conducting their own literature reviews

4.6.1.6 Critical reflection is not necessary when new treatments and medications are prescribed for the critically ill patient

As illustrated in Figure 4.15 there were n=42(60%) who disagreed while n=11(15%) strongly disagreed with the statement. There were n=9(13%) who had a neutral opinion about the statement. A proportion of participants, n=6(9%), agreed whilst 2(3%) strongly agreed that critical reflection was not necessary in caring for the critically ill.

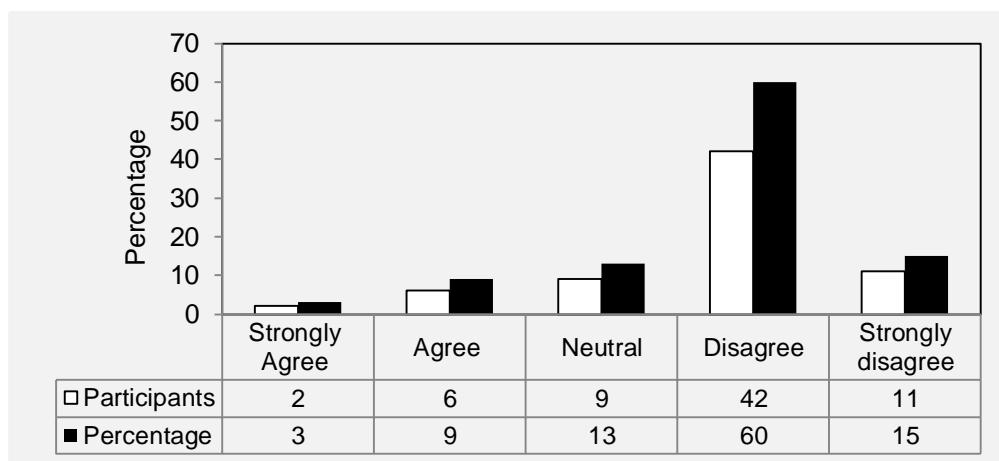


Figure 4.15: Critical reflection is not necessary when new medicines and treatments are prescribed for the critically ill patient

4.6.1.7 Implementing evidence-based practices is a waste of time

Results reflected in Figure 4.16 indicate that n=32(46%) strongly disagreed while

n=32(46%) disagreed that implementing evidence-based practice was a waste of time. Of the participants n=2(3%) agreed whilst 1(1%) strongly agreed with the statement. The remaining participants, n=3(4%), had a neutral opinion about the statement.

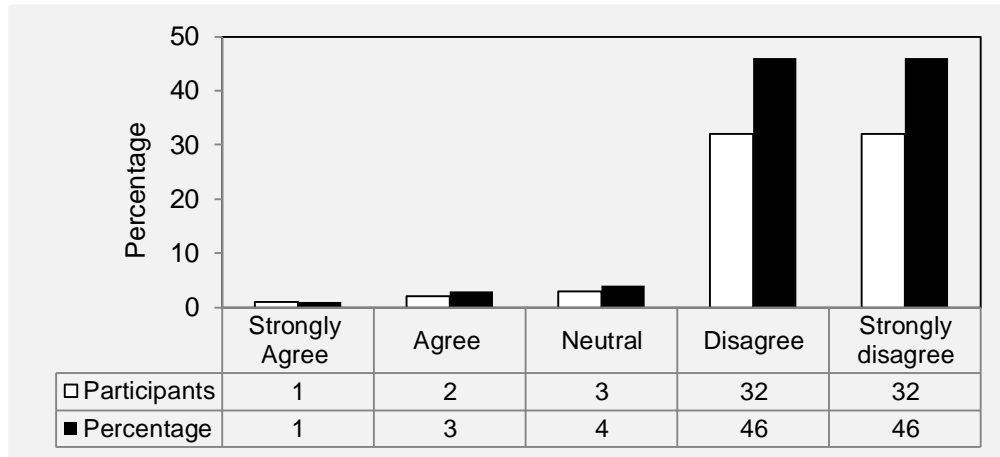


Figure 4.16: Implementing evidence-based practices is a waste of time

4.6.1.8 Minimal rewards for using research findings

Of the seventy participants n=29(41%) disagreed whilst n=21(30%) strongly disagreed that there were minimal rewards when using research findings and applying it to clinical practice. There were some participants, n=13(19%), who agreed whilst n=4(6%) strongly agreed that there were minimal rewards for using research results. The remaining participants, n=3(4%), had a neutral opinion toward the statement. Figure 4.17 depicts the results.

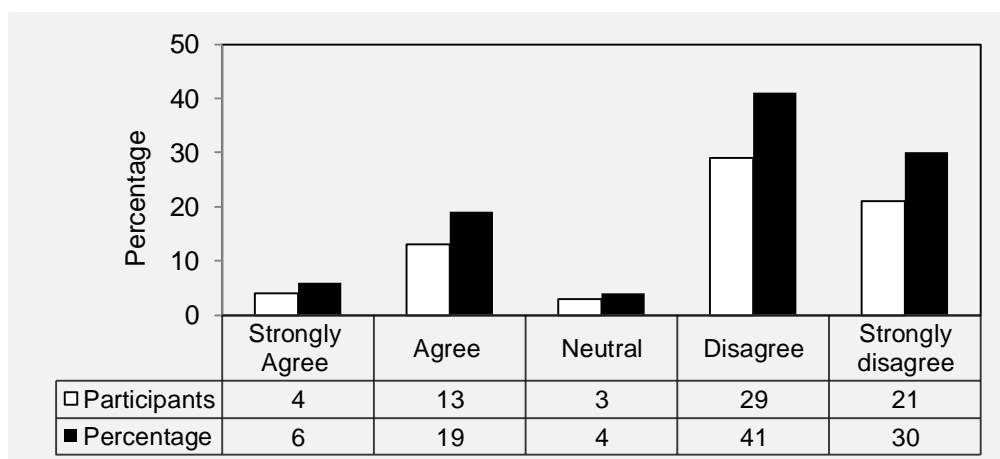


Figure 4.17: Minimal rewards for using research findings

4.6.1.9 Resistance to implementing evidence-based practice

The purpose of the statement was to determine if professional nurses were resistant to implementing evidence-based practice. There were n=34(49%) who agreed whilst n=7(10%) strongly agreed with the statement. Of the seventy participants n=13(19%) disagreed whilst n=9(12%) strongly disagreed with the statement. A proportion of participants, n=7(10%), had a neutral stance toward the statement. The results are schematically presented in figure 4.18.

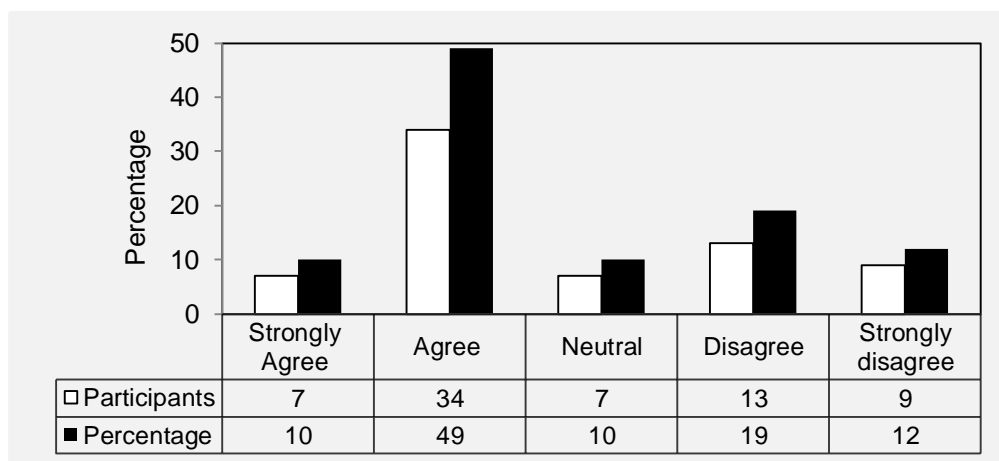


Figure 4.18: Resistance to implementing evidence-based practice

4.6.1.10 Traditional/ritual practices outweigh evidence-based practices

Of the seventy participants there were n=17(25%) who disagreed whilst n=14(20%) strongly disagreed with the statement. The remaining participants, n=23(33%), agreed whilst n=8(11%) strongly agreed that tradition or ritual was more significant than evidence-based practices. The remaining participants, n=8(11%), have a neutral opinion about the statement. The results are illustrated in Figure 4.19.

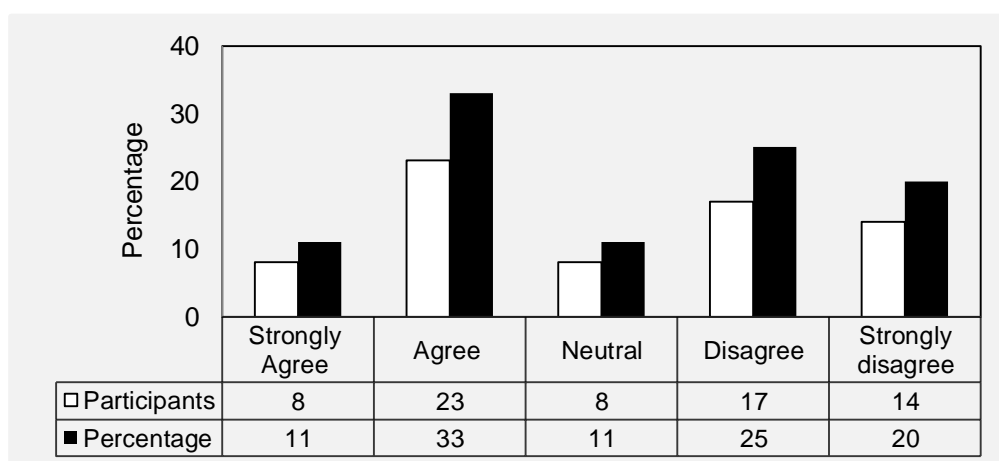
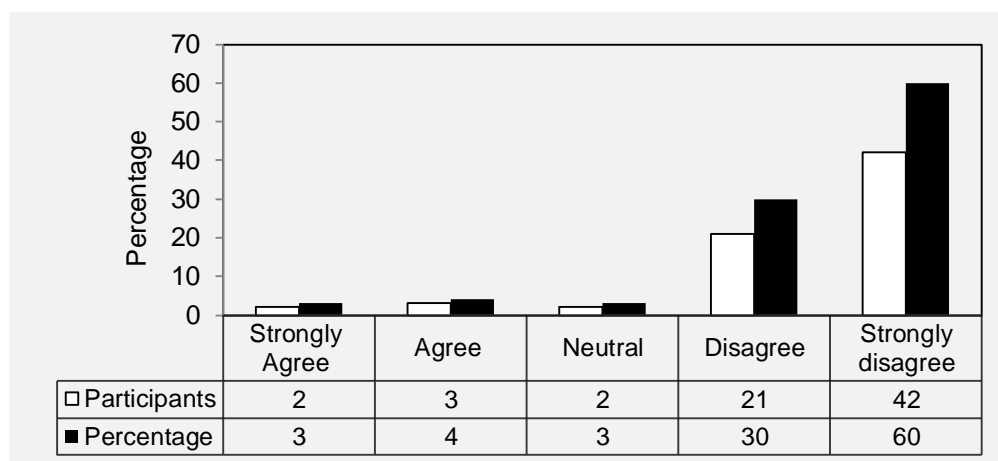


Figure 4.19: Traditional/ritual practices outweigh evidence-based practices**4.6.1.11 Evidence-based practices do not improve the quality of patient care**

A summary of the responses is graphically represented in Figure 4.20. Results reflect that n=42(60%) strongly disagreed while n =21(30%) disagreed that evidence-based practices did not improve the quality of patient care. Of the seventy participants n=3(4%) agreed while n=2(3%) strongly agreed with the statement. There were n=2(3%) that had a neutral stance about the statement.

**Figure 4.20: Evidence-based practices do not improve the quality of patient care****4.6.1.12 Evidence-based practice are not necessary for daily practice within the critical care unit**

The purpose of the statement was to explore whether evidence-based practice should be incorporated in daily practice. From the data analysis n=40(57%) strongly disagreed while n=26(37%) disagreed that evidence-based practice was not necessary for daily practice. A proportion of participants, n=2(3%), agreed whilst n=0(0%) strongly agreed with the statement. There were n=2(3%) that had a neutral opinion about the statement. Figure 4.21 depicts the results.

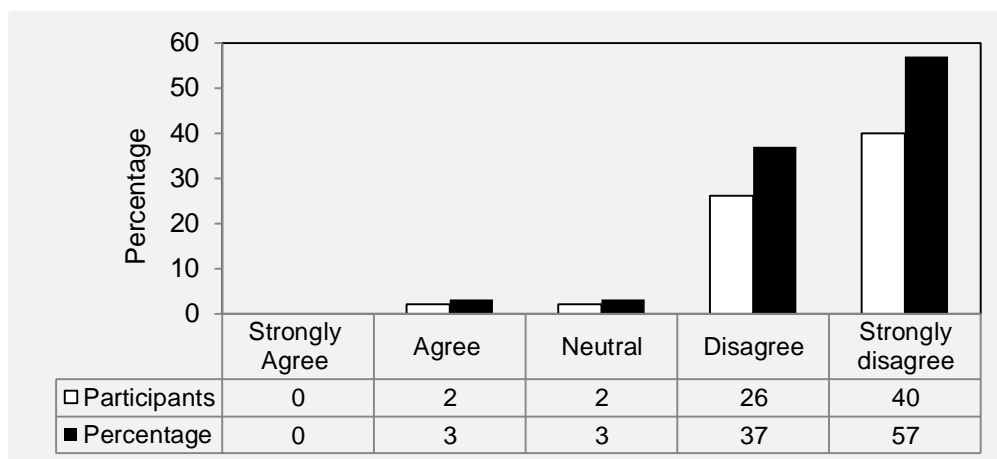


Figure 4.21: Evidence-based practices are not necessary for daily practice within the critical care unit

4.6.1.13 Heavy workload

Figure 4.22 displays the responses to the statement. A proportion of the participants, n=20(29%), agreed while n=19(27%) strongly agreed that the workload of nurses was too heavy to keep up with evidence-based practices. Of the seventy participants n=16(22%) disagreed whilst n=4(6%) strongly disagreed with the statement. There were n=11(16%) who had a neutral opinion about the statement.

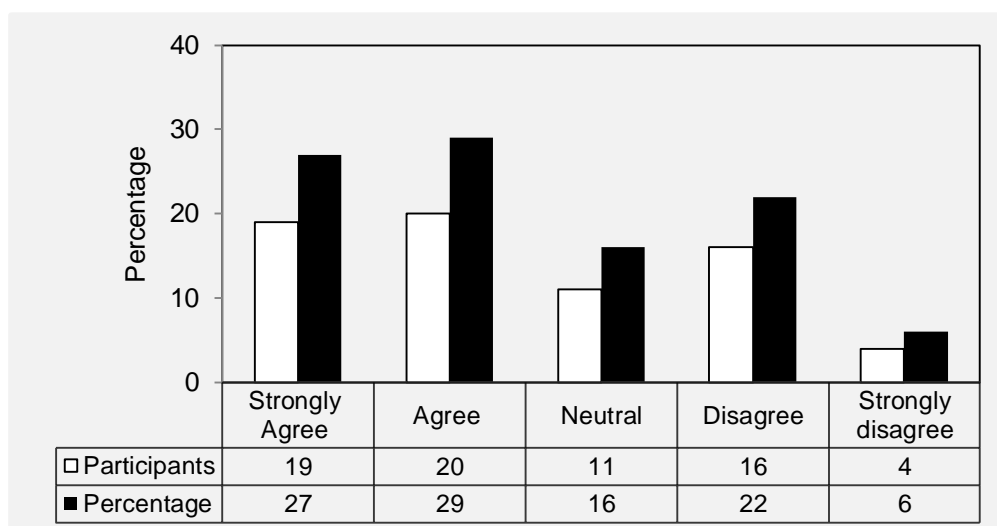


Figure 4.22: Heavy workload

4.6.1.14 Lack of efficient evidence translation into clinical practice

As illustrated in Figure 4.23 the responses to lack of evidence translation into clinical practice is displayed. Of the seventy participants n=30(43%) agreed while

n=13(19%) strongly agreed that there was lack of efficient evidence translation into practice. There were n=14(20%) that had a neutral opinion toward the statement. A proportion of participants, n=10(14%), disagreed whilst n=3(4%) strongly disagreed with the statement.

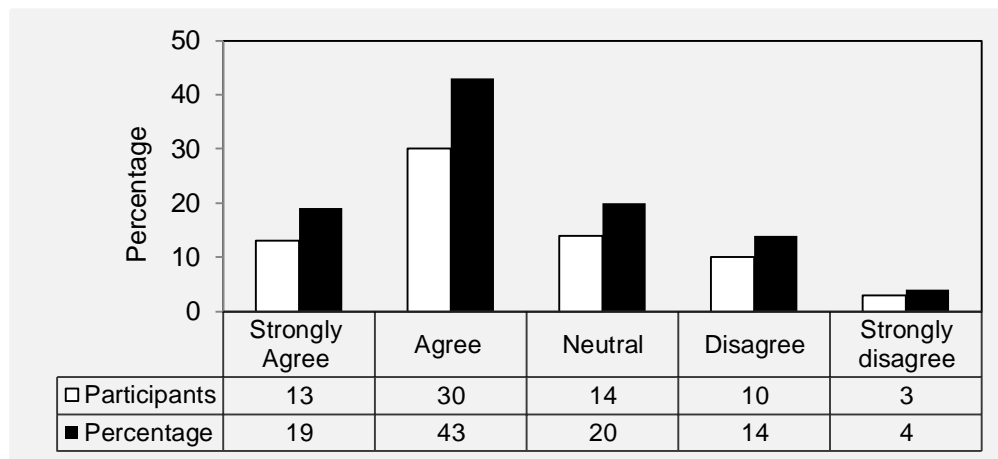


Figure 4.23: Lack of efficient evidence translation into clinical practice

4.6.2 DISCUSSION PERTAINING TO BARRIERS RELATED TO KNOWLEDGE OF THE NURSE WITH REGARDS TO EVIDENCE-BASED PRACTICE

According to DiCenso *et al* (2005:15) **changing practice requires long term commitment and insufficient time to perform searches hinders evidence uptake**. Insufficient time to access or read evidence-based practices is one of the main contributing factors to the chasm of research and practice (Gerrish & Lacey, 2010:512). In a survey by Kocaman *et al* (2010:1912), 85% of the participants indicated they had insufficient time to carry out evidence-based practice. In a survey by Koehn and Lehman (2008:213) 39% of the 422 participants stated they had insufficient time to change to evidence-based practices.

The findings of this research study indicated that 39% disagreed while 15% strongly disagreed that they lacked time or commitment to implement evidence-based practice. The findings of this research study are incongruent with the above-mentioned studies.

Quite often clinical decision-making pertaining to the care of the critically ill patient is based on various sources. **Nurses base clinical decisions on information**

that they were given through training. Nurses usually seek information from authorities with clinical expertise in specific areas. But often authority figures base decisions or actions on unscientific previous experiences. Trial and error is a method that is applied in situations until a solution is achieved (Polit & Beck, 2012:10). Gerrish *et al* (2007:334) performed a survey in which one of the highest ranked sources accessed by 524 participants was referring to knowledge they had obtained during their training. In a survey by Brown *et al* (2009:381) 30% of participants indicated use of knowledge they had acquired through training to guide practice.

The findings of this research study indicated that 59% agreed while 25% strongly agreed that they used information they had gained from training as a professional nurse to guide clinical decision-making in the care of the critically ill. The findings from this research study are congruent with the above-mentioned studies.

Intuition about what seems 'right' for a patient often guides decision-making. However, this non-scientific method is founded on instinct or hunches and should not be considered as a reliable source (Polit & Beck, 2012:10). In a survey by Flynn and Sinclair (2005:143) involving nineteen professional nurses through semi-structured interviews, participants used their intuition in caring for the patient. They instilled saline when suctioning a patient's artificial airway, based on intuition even though the best-practice guideline indicated such practice was not recommended.

The findings of this research study indicated that 36% agreed while 17% strongly agreed that they used their intuition to guide clinical decision-making in the care of the critically ill. The findings of this research study are congruent with the above-mentioned studies.

Nurses may perceive evidence-based practice as insignificant and **having little benefit for themselves or the patient in the critical care unit.** The perception may arise from lack of awareness or realizing the value of evidence-based practices (Polit & Beck, 2012:29). In a survey by Majid *et al* (2011:232) 38% of the participants disagreed that evidence-based practice had little benefit for self or the

patient. In a survey by Kocaman *et al* (2010:1908) 71% were of the opinion that evidence-based practice had no benefit for self or patient. In a survey by Brown *et al* (2009:371) 34% of the participants indicated that there were minimal benefits for themselves or patients in adopting evidence-based practice.

The findings of this research study indicated that 47% disagreed while 37% strongly disagreed that there were minimal benefits for self or patient in the care of the critically ill. The findings of this research study are congruent with the above-mentioned studies.

The nurse in the critical care unit should not be responsible for conducting their own literature reviews to answer clinical questions. However, nurses may not be equipped with skills to perform searches. Another challenge that exists is that once evidence is found it may be difficult to interpret as the statistics and medical jargon increases the complexity (Aveyard & Sharp, 2011:129). Evidence-based practice has prompted the nursing profession to become aware of evidence-based practice and realize that each nurse is responsible for accessing, reading and appraising evidence (Moule & Goodman, 2009:374).

The findings of this research study indicated that 31% disagreed while 11% strongly disagreed that the nurse in the critical care unit should not conduct literature reviews.

Critical reflection on new treatment and medication when caring for the critically ill patient will ensure that clinical practitioners strive to deliver the best possible care to their patients. Craig and Smyth (2007:215) add that reflective practice is a learning opportunity to analyse the clinical situation that occurred. During this process professional nurses evaluate alternative methods that can achieve desired outcomes and the effectiveness of an intervention is also scrutinized.

The findings of this research study indicated that 60% disagreed while 15% strongly disagreed that critical reflection on new treatment and medication was not necessary. The findings from this research study are congruent with the above-

mentioned studies.

Evidence-based practice is viewed as a waste of time by some practitioners. They value information from colleagues, textbooks or their own experiences. The view is supported by the belief that evidence-based practice does not address patients as individuals who need unique care (Aveyard & Sharp, 2011:129). In a systematic review by Kajermo *et al* (2010:3) a barrier noted was that nurses did not value research in practice. In a survey by Breimaier *et al* (2011:1744) 52% of the participants were of the opinion that research had no value in clinical practice. In a survey by Oranta *et al* (2002:208) 52% of the participants indicated they did not see the value of research for clinical practice.

The findings of this research study indicated that 46% disagreed while 46% strongly disagreed that implementing evidence-based practice was a waste of time. The findings are incongruent with the above-mentioned studies.

Professional nurses in the critical care unit are resistant to change and trying new ideas. Barker (2010:109) mentions that most people are resistant to change because they are trapped in their "comfort zones". In a study by Gerrish *et al* (2008:67), participants indicated that they did not have a culture supporting evidence-based practice. Oranta *et al* (2002:212) conducted a study in which almost 50% of the participants indicated nurses did not want to change practice. In a study done by Brown *et al* (2009:30) a barrier that was reported by 37% of participants was that professional nurses were resistant to change.

The findings of this research study indicated that 49% agreed while 10% strongly agreed that professional nurses were resistant to change. The findings of this research study are congruent with the above-mentioned studies.

Traditional or ritualistic practices outweigh evidence-based practices in organizations that do not have a culture of promoting evidence-based practices. Individuals may use out-of-date practices and practitioners also do not challenge those utilizing outdated practices (Aveyard & Sharp, 2011:129). Moule and Goodman (2009:19) describe tradition as knowledge that is passed through

generations and is based on traditional understanding. Intuition is a process that incorporates an individual's "sixth sense" or previous experience to make a clinical judgment.

The findings of this research study indicated that 25% disagreed while 20% strongly disagreed that tradition or ritual outweighed evidence-based practice.

Evidence-based practice does not improves the quality of patient care by ensuring that nurses use the best relevant evidence (Barker, 2010:4). According to Burns and Grove (2009:618), not only does evidence-based practice improve patient outcomes, but also impacts on the health institutions, families, nurses and physicians as complications and hospital stays are decreased. Findings from a survey done by McInerney and Suleman (2010:90) suggested that more than 75% of participants believed that evidence-based practices improved patient care.

The findings of this research study indicated that 60% strongly disagreed while 30% disagreed with the statement. The findings from this research study are congruent with the above-mentioned studies.

According to Moule and Goodman (2009:373) the **application of evidence-based practices is not necessary for daily practice within the nursing profession** to ensure that delivery of patient care is safe, relevant and effective. Results from a survey done by McInerney and Suleman (2010:90) showed that the perception of participants revealed that evidence-based practices should be part of daily nursing practices. In a survey done by Breimaier *et al* (2011:1750) 55% of the participants disagreed that evidence-based practice was not necessary for daily practice.

The findings of this research study indicated that 57% strongly disagreed while 37% disagreed with the statement. The findings from this research study are congruent with the above-mentioned studies.

According to Gerrish and Lacey (2010:512), evidence-based practices have not been embraced **as nurses perceive it as increasing their workload**. Pravikoff *et al* (2005: 48) undertook a study in which participants stated that they had other priorities and evidence-based practice was on a lower category of priorities. In a survey by Koehn and Lehman (2007:212) findings ascertained that participants regarded their workload as too great which hindered evidence uptake.

The findings of this research study indicated that 29% agreed while 25% strongly agreed that the workload was too heavy to keep up with evidence-based practice. The findings of this research study are congruent with the above-mentioned studies.

Barker (2010:107) highlights the fact, that even though people are aware of evidence-based practice, there is no guarantee that they will adopt new practices. **There is lack of translation of evidence into practice** as a result of barriers on an individual, organisational, national level or due to the characteristics of evidence itself.

The findings of this research study indicated that 43% agreed while 19% strongly agreed that the workload was too heavy to keep up with evidence-based practice. The findings of this research study are congruent with the above-mentioned studies.

4.7 BARRIERS TO FINDING AND REVIEWING EVIDENCE IN THE CRITICAL CARE UNIT

The section delves into barriers to finding and reviewing evidence in a critical care unit. Professional nurses may have difficulty in locating evidence resulting in evidence-based practices not being implemented effectively. Once evidence is found, a further challenge that might exist is the inability to understand research reports or the implications for clinical practice. The section comprised 10 statements that were presented to participants.

Textbox 4.4: Barriers to finding and reviewing evidence in the critical care unit

4.7.1	Results
4.7.1.1	Difficulty in locating evidence to guide clinical decision-making
4.7.1.2	Insufficient time to find and read research reports
4.7.1.3	Research reports are difficult to understand
4.7.1.4	Difficulty in critical appraisal of journal articles or guidelines
4.7.1.5	Implications of research findings for clinical practice are unclear
4.7.1.6	Access to evidence is poor (slow or no computers available in the critical care unit)
4.7.1.7	Research reports are not readily available in the critical care unit
4.7.1.8	The amount of literature related to critical care is overwhelming
4.7.1.9	Research reports related to issues in the critical care unit are not published fast enough
4.7.1.10	Best-practice guidelines are difficult to interpret
4.7.2.	Discussion pertaining to the barriers to finding and reviewing evidence

4.7.1 RESULTS

The following section is a compilation of results obtained from the data analysis. The purpose of the section in the questionnaire was to identify if there were any barriers to finding evidence in the critical care unit. The results for this section will be illustrated using bar graphs.

4.7.1.1 Difficulty in locating evidence to guide clinical decision-making

The results are schematically presented in Figure 4.24. Of the seventy participants $n=24(34\%)$ disagreed whilst $n=20(29\%)$ strongly disagreed that they had any difficulty in accessing evidence which guided clinical decision-making. A proportion of participants, $n=16(23\%)$, agreed while $n=3(4\%)$ strongly agreed with the statement which indicated that they did have difficulty in locating evidence. The remaining participants, $n=7(10\%)$, had a neutral stance toward the statement.

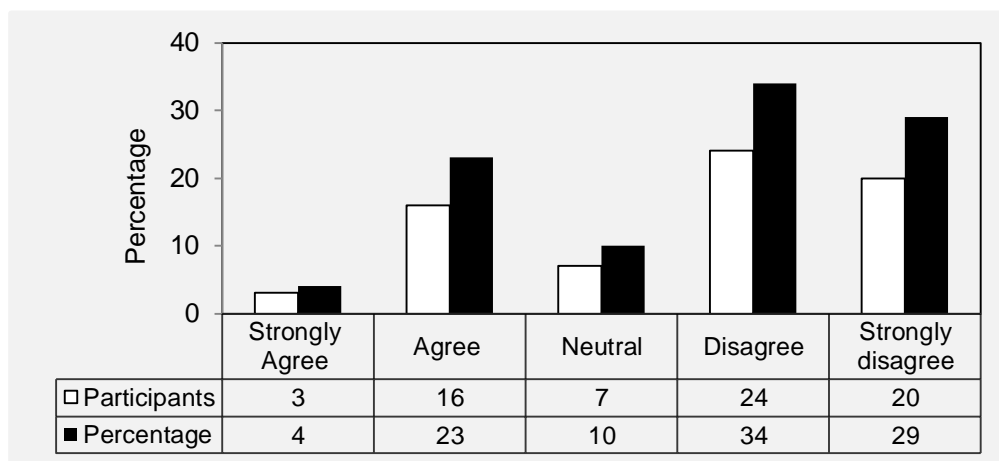


Figure 4.24: Difficulty in locating evidence to guide clinical decision-making

4.7.1.2 Insufficient time in the critical care unit to find and read research reports

The intention of the statement was to determine if there was insufficient time in the critical care unit to find and read research reports. As illustrated in Figure 4.25, the results indicate that n=24(34%) agreed whilst n=19(28%) strongly agreed that there was insufficient time in the critical care unit to find or read research reports. A proportion of participants, n=12(17%), disagreed whilst n=5(7%) strongly disagreed that time was an issue within the critical care unit. The remaining participants, n=10(14%), had a neutral opinion about the statement.

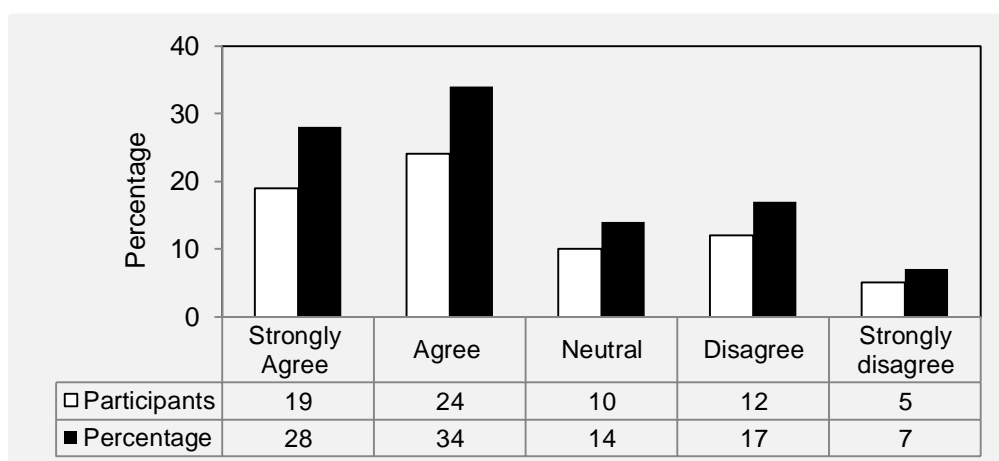


Figure 4.25 Insufficient time in the critical care unit to find and read research reports

4.7.1.3 Research reports are difficult to understand

The purpose of the statement was to ascertain if participants had difficulty in

understanding research reports. Data analysis results reflected in Figure 4.26 indicated that $n=39(56\%)$ disagreed whilst $n=7(10\%)$ strongly disagreed that they had any difficulty in understanding research reports. Of the seventy participants $n=14(20\%)$ had a neutral opinion toward the statement. However, $n=9(13\%)$ indicated that they agreed about having difficulty in understanding research reports whilst $1(1\%)$ strongly agree that they had difficulty in understanding research reports.

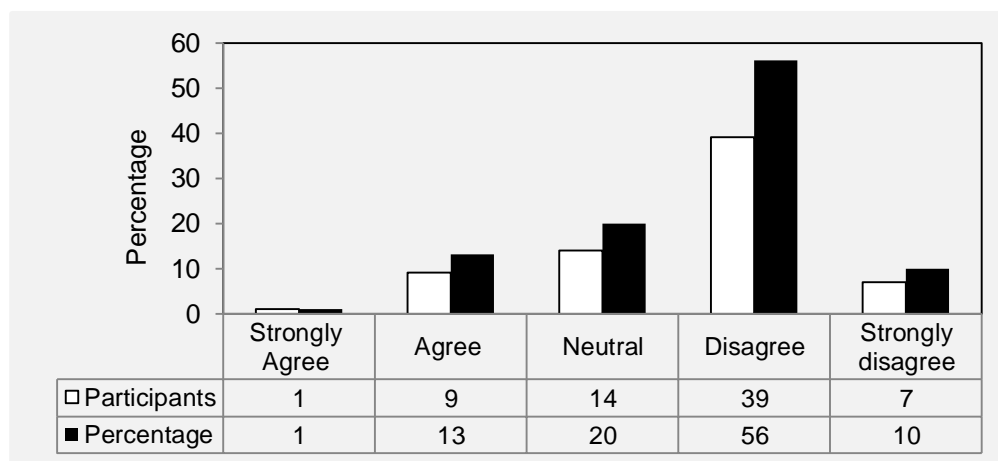


Figure 4.26 Research reports are difficult to understand

4.7.1.4 Difficulty in critical appraisal of journal articles or guidelines

The statement was intended to explore if participants encountered any difficulty in critically appraising journal articles or guidelines. The study findings reflected in Figure 4.27 indicated that $n=21(30\%)$ disagreed that they experienced any difficulty in the critical appraisal process whilst $n=9(13\%)$ strongly disagreed with the statement. A proportion of participants, $n=25(36\%)$, indicated that they agreed and there were no participants that strongly agreed with the statement. The remaining participants, $n=15(21\%)$, had a neutral stance toward the statement.

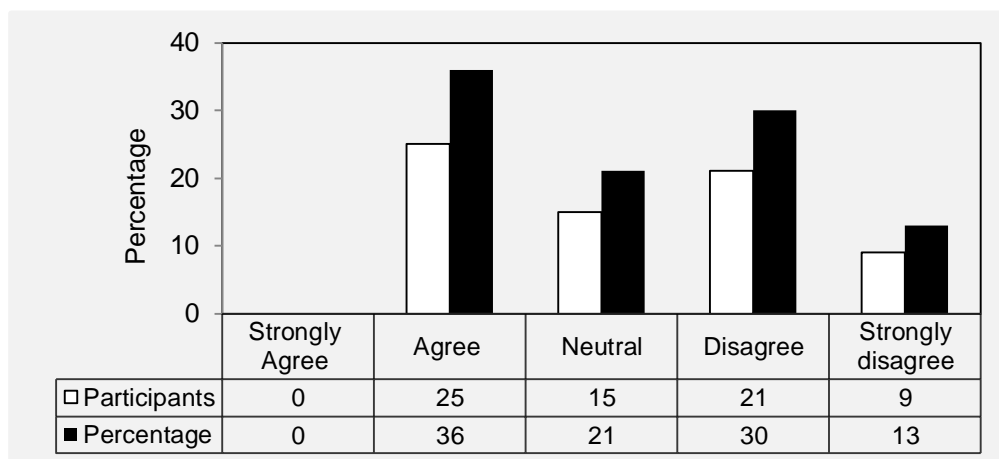


Figure 4.27 Difficulty in critical appraisal of journal articles or guidelines

4.7.1.5 Implications of research findings for clinical practice are unclear

The purpose of the statement was to explore if participants experienced difficulty in applying research findings to clinical practice. Figure 4.28 graphically displays the results indicating that n=25(36%) disagreed whilst n=9(13%) strongly disagreed with the statement. Of the seventy participants n=18(26%) had a neutral opinion toward whether the implications of research findings for clinical practice were unclear. However, n=15(21%) agreed whilst n=3(4%) strongly agreed with the statement.

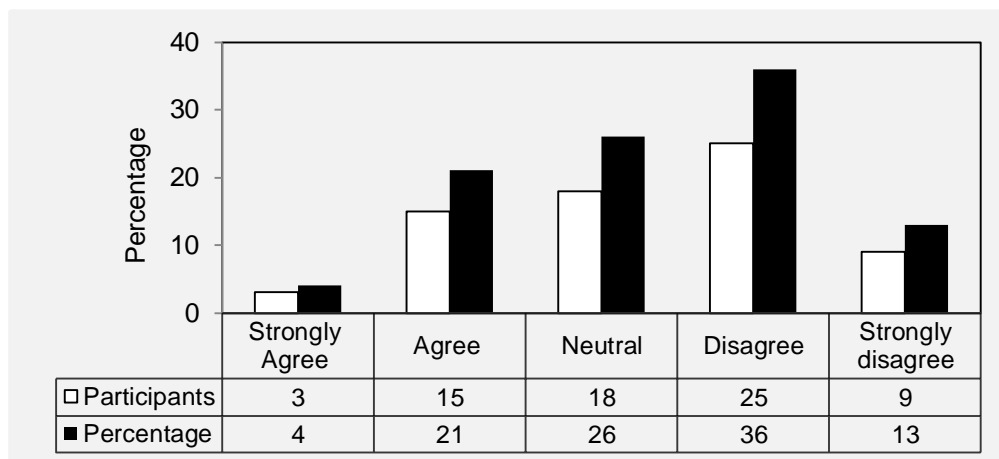


Figure 4.28: The implications of research findings for clinical practice are unclear

4.7.1.6 Access to research evidence is poor (slow or no computers in the critical care unit)

The statement aimed to explore if a lack of access to computers played a role in

influencing implementation of evidence-based practice as information was largely available on various online resources. Of the seventy participants $n=34(49\%)$ agreed while $n=12(17\%)$ strongly agreed that there is poor access to computers within the critical care unit. A proportion of participants $n=15(21\%)$ indicated that they disagreed with the statement while $n=5(7\%)$ strongly disagreed with the statement. The remaining participants, $n=4(6\%)$ had a neutral stance toward the statement. The results are schematically presented in Figure 4.29.

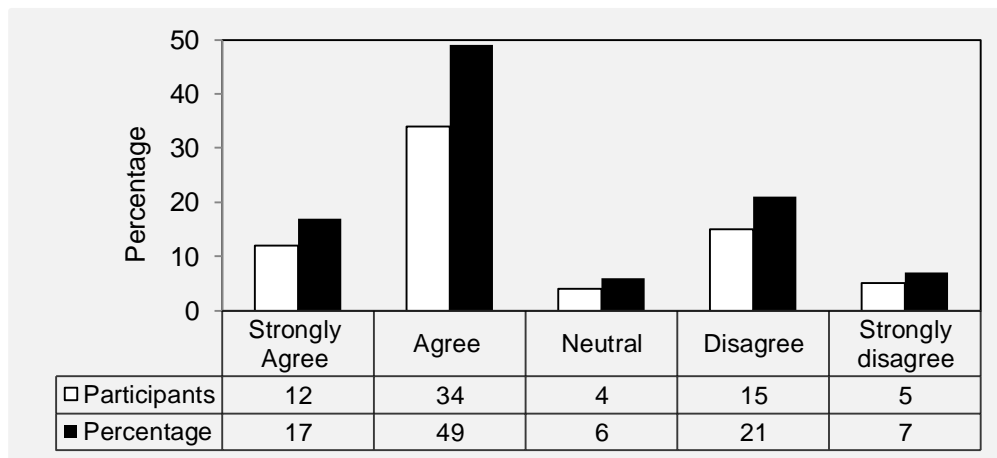


Figure 4.29: Access to research evidence is poor (slow or no computers are available in the critical care unit)

4.7.1.7 Research reports are not readily available in the critical care unit

The results are schematically presented in Figure 4.30. Of the seventy participants $n=42(60\%)$ agreed while $n=9(13\%)$ strongly agreed that research reports were not readily available in the critical care unit. There were $n=14(20\%)$ that disagreed with the statement while $n=1(1\%)$ strongly disagreed with the statement. Of the remaining participants $n=4(6\%)$ had a neutral stance toward the statement.

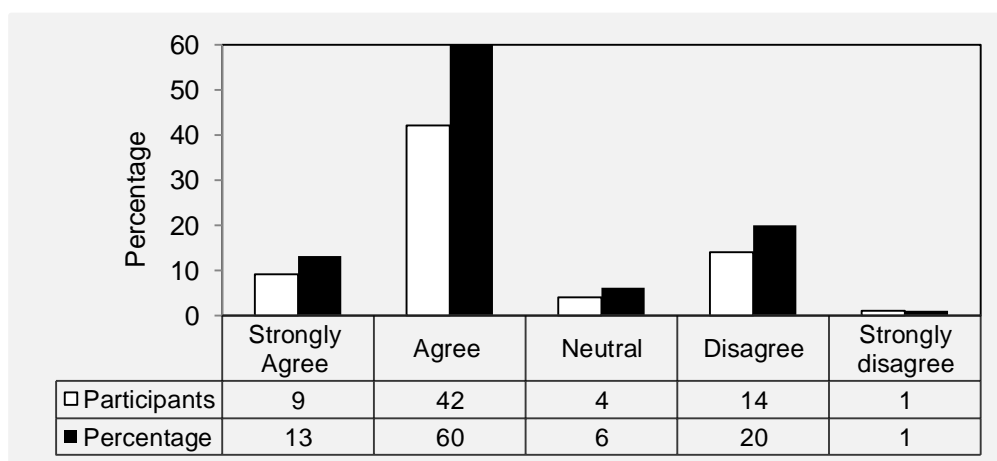


Figure 4.30: Research reports are not readily available in the critical care unit

4.7.1.8 The amount of literature related to critical care is overwhelming

In Figure 4.31 the results are depicted indicating that n=28(40%) agreed whilst n=14(20%) strongly agreed that there was an overwhelming amount of literature pertaining to critical care. There were n=12(17%) who disagreed while n=3(4%) strongly disagreed that there was an overwhelming amount of literature pertaining to the speciality of critical care. A total of n=13(19%) had a neutral opinion about the statement.

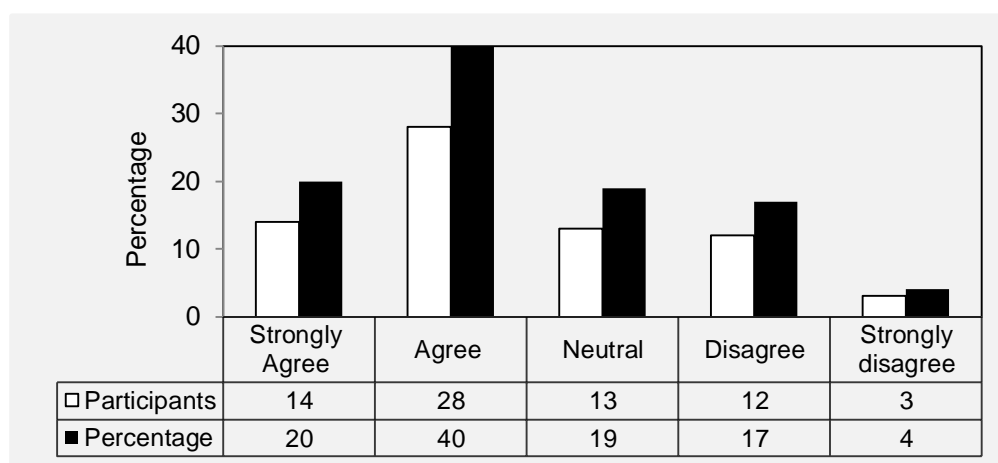


Figure 4.31: The amount of literature related to critical care is overwhelming

4.7.1.9 Research reports related to issues in the critical care are not published fast enough

The statement ascertained whether research reports within the critical care unit were published at a slow rate. The results are reflected in Figure 4.32 indicating that n=21(30%) agreed that research reports were not published fast enough while 5(7%) strongly disagreed with the statement. Of the seventy participants n=23(33%) had a neutral opinion toward the statement. Derived from the data analysis n=16(23%) disagreed while n=5(7%) strongly agreed with the statement.

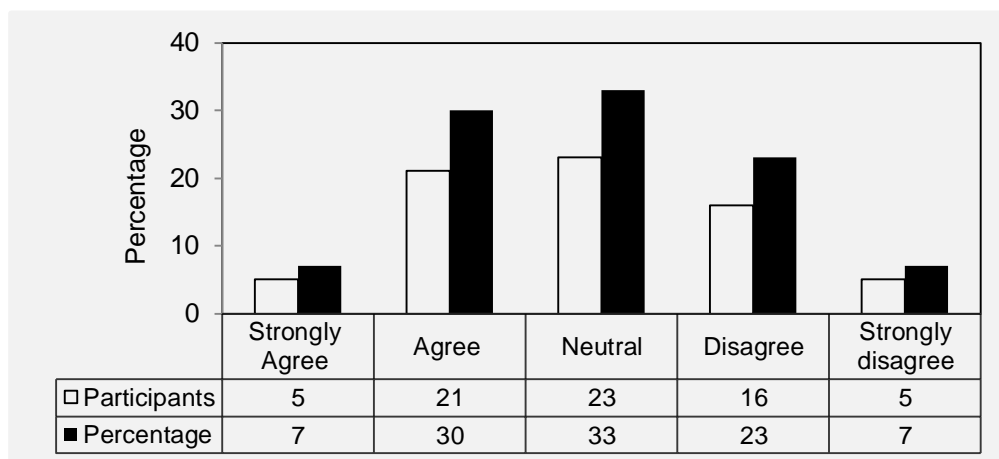


Figure 4.32 Research reports related to issues in critical care are not published fast enough

4.7.1.10 Best-practice guidelines are difficult to interpret

Of the seventy participants who participated in the study n=33(47%) disagreed while n=12(17%) strongly disagreed that best practice guidelines were difficult to interpret. However, n=11(14%) agreed while n=4(6%) strongly agreed with the statement. There were n=10(14%) who had a neutral stance on whether best-practice guidelines were difficult to interpret.

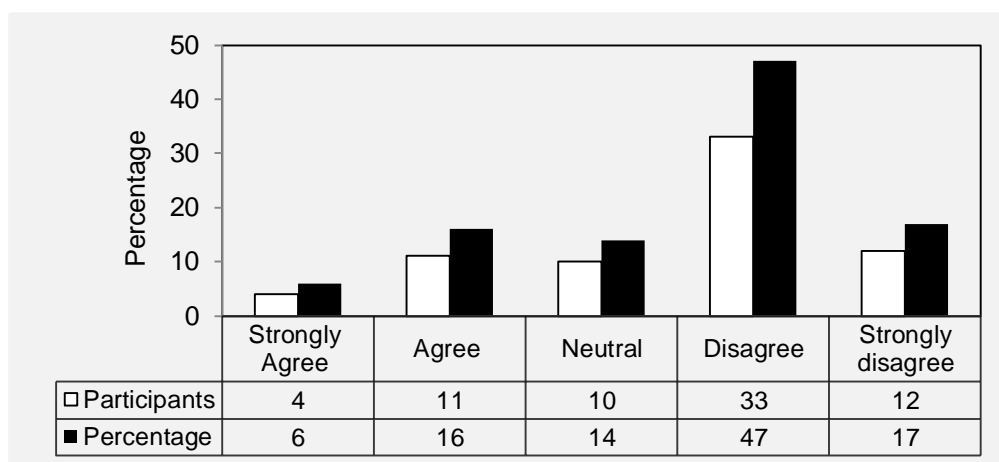


Figure 4.33: Best-practice guidelines are difficult to interpret

4.7.2 DISCUSSION PERTAINING TO BARRIERS TO FINDING AND REVIEWING EVIDENCE

Nurses in the critical care unit have **difficulty in locating evidence to guide clinical decision-making** due to the immense amount of literature published in

the written or electronic format. A challenge that exists with online resources is the lack of quality control of evidence or research studies due to the wealth of literature available on the internet. Quite often evidence in the written format is not located in one place in nursing units or accessibility to online resources remains a problem as professional nurses do not have access to computers (Courtney & McCutcheon, 2010:79). A survey done by Caldwell *et al* (2007:518) revealed that 40% of the participants had never accessed databases such as MEDLINE and 76% of the participants stated they have never received any formal training on conducting literature searches. In a survey done by Rosebaum *et al* (2008:1472) involving thirty two participants 75% of the participants had difficulty in locating The Cochrane Library and struggled to search for specific information on the site. The findings of this research study revealed that 34% disagreed whilst 29% strongly disagreed that they had any difficulty in locating evidence. The findings of this research study are incongruent with the above-mentioned studies.

In a study done by Gerrish *et al* (2007:67) **insufficient time to search for or read research reports** was one of the main barriers stated by participants. Parahoo (2006:421) adds lack of time as one of the main reasons for not accessing or sustaining evidence-based practices. In a survey done by Brown *et al* (2009:378) inadequate time during working hours was regarded as the highest-ranked barrier by 67% of the participants. Factors such as shortage of staff, high patient acuities and meeting deadlines were some of the main reasons for non-compliance with evidence-based practices as stated by participants. In a systematic review done by Kajermo *et al* (2010:3) from a total of 53 studies reviewed, in 49 of those studies, inadequate time to read research or implement evidence-based practices was one of highest ranked barriers by participants.

The findings of this research study indicated that 34% agreed whilst 28% strongly agreed with that there was insufficient time to find or read research reports. The findings of this research study are congruent with the above-mentioned studies.

One of the main constituents in the growing chasm in the research practice gap is the **inability to understand research reports** (Barker 2010, 109). Aveyard and Sharp (2011:129) add that certain aspects of research reports such as medical jargon, language, statistics and presentation may make it more difficult to

understand research reports. According to Oranta *et al* (2002:209), research reports may be difficult to understand especially in countries where English is not the first official language. There were 71% of participants who indicated that research reports were not user-friendly due to the medical jargon and presentation of statistical analysis.

The findings of this research study identified that 56% disagreed whilst 10% strongly disagreed that they had any difficulty understanding research reports. The findings are incongruent with the above-mentioned studies.

Courtney and McCutcheon (2010:84) propose that the research practice gap exists due to nurses' **lack of critical appraisal skills**. Before evidence is applied in the clinical setting, nurses must evaluate the validity and quality of the evidence. Currently, there are online appraisal tools for the different types of research articles. However, most nurses have never received any formal training on how to proceed with the appraisal process which may contribute to hesitation in initiation of evidence-based practices. Barker (2010:54) adds that a detrimental misconception of nurses is that all published literature is of good quality. Therefore critical appraisal of the evidence is a crucial step that must never be omitted before research findings are adopted in clinical practice. In a survey done by Brown *et al* (2009:371) 53% of the participants indicated that they experienced difficulty in the critical appraisal of journal articles and guidelines.

The findings of this research study indicated that 30% disagreed while 13% strongly disagreed that they had any difficulty with the critical appraisal process. The findings of this research study are incongruent with the above-mentioned studies.

Even though research studies describe patient populations and recommendations for evidence-based practices, nurses may struggle on whether to apply these in clinical practice (Burns & Grove, 2009:617). According to Mortaine and Fontaine (2009:5) **the implications of research findings for clinical practice may be unclear** for many nurses who read research reports. Gerrish and Lacey (2010:496) concur by stating that even though research studies are carried out,

issues in clinical practice are not being addressed. In a survey done by Majid *et al* (2011:233) amongst 1486 professional nurses 41% indicated that they had difficulty in determining the implications of research findings for clinical practice. In a similar survey done by Oranata *et al* (2002: 208), 67% of the participants indicated that the practical implications of research results were too vague for application to clinical practice.

The findings from this research study revealed that 36% disagreed whilst 13% strongly disagreed that implication of research findings for clinical practice was unclear.

Perhaps one of the main barriers to the implementation of evidence-based practices relates to **inaccessibility to computers**, as most of the latest and relevant evidence is available online (Burns & Grove, 2009:618). In a survey done by Pravikoff *et al* (2005:40), 46% of the participants indicated that access to computers within the workplace was inadequate.

The findings of this research study revealed that 49% agreed and 17% strongly agreed that inaccessibility to computers was a barrier to the implementation to evidence-based practices. The findings of this research study are congruent with the above-mentioned study.

One of the barriers to finding and reviewing evidence may be a result of **research reports not being readily available** in nursing units. If research were readily available staff could easily access and read reports. Professional nurses within the critical care unit are expected to search for evidence themselves which may present a barrier to the implementation of evidence-based practices (Gerrish *et al*, 2008:67). In a survey done by Kocaman *et al* (2010:1908) involving 329 professional nurses 58% indicated that one barrier to the implementation of evidence-based practice was that research reports were not readily available. In a survey done by Brown *et al* (2009:379) 48% of the participants indicated that research reports were not readily available.

The findings of this research study identified that 60% agreed whilst 13% strongly

agreed that research reports were not readily available in the critical care unit. The findings of this research study are congruent with the above-mentioned studies.

The amount of literature related to critical care is overwhelming according to Courtney and McCutcheon (2010:5) who state that it is an impossible task for nurses to keep updated with literature. In the specialty of surgical nursing for instance, there are approximately one thousand publications on a yearly basis.

Aveyard and Sharp (2011:129) concur by adding that a barrier to implementation of evidence-based practice may relate to too much published literature. Barker (2010:1) mentioned that there were 3011 articles in response to the search term "evidence-based practice". Salmond (2007:114) adds that there are 1500 new articles published daily. In a survey done by Kocaman *et al* (2010:1908), 58% of the participants indicated that there was an overwhelming amount of literature that pertained to patient care in the critical care unit.

The findings of this study revealed that 40% agreed while 20% strongly agreed that the amount of literature pertaining to critical care was overwhelming. The results of this study are congruent with the above-mentioned studies.

According to Brown *et al* (2009:380), one of the barriers that has been identified by participants is that **research reports are not published fast enough**. In a systematic review done by Kajermo *et al* (2010: 35) in 23 studies from a total of 53 studies, participants have ranked one of the barriers the fact that research reports are not being published fast enough. In a survey done by Kocaman *et al* (2010:1908) 60% of the participants indicated that research reports were not published fast enough.

The findings of this research study revealed that 30% agreed while 7% strongly agreed that research reports were not published fast enough. The results are congruent with the above-mentioned studies.

Over the past couple of years clinical evidence has been presented in the form of best-practice guidelines. There was a growing popularity for providing evidence through this method of communication amongst healthcare professionals.

However, **best-practice guidelines may be difficult to interpret**. A pitfall may be that it is not at the level of the target audience, usually professional nurses who have to apply the guidelines to patient care. Sometimes the medical jargon or language used is complex and not user-friendly. Nursing interventions within the guideline may sometimes be vague or complex which will decrease compliance in application of the guidelines (Courtney & McCutcheon, 2010:59). The findings of this research study indicate that 47% disagreed whilst 17% strongly disagreed that best practice guidelines were difficult to interpret.

4.8 BARRIERS TO IMPLEMENTING EVIDENCE-BASED PRACTICE BASED ON RELEVANT RESOURCES

Adequate resources are essential to ensure implementation of evidence-based practices in the critical care unit. Resources may refer to human resources, financial resources or consumables. The section comprised 5 statements presented to participants who then had to allocate one response to each statement. The purpose of the section was to explore if access to resources was a barrier to evidence-based implementation in the critical care unit in the Nelson Mandela Metropole where the study took place.

Textbox 4.5: Barriers to implementing evidence-based practice based on relevant resources

4.8.1 Results

4.8.1.1 Lack of confidence about changing to evidence-based practices in the critical care unit

4.8.1.2 Lack of authority in the critical care unit to change to evidence-based practice

4.8.1.3 Severity of the critically ill patient influences implementation of evidence-based practice

4.8.1.4 Insufficient resources to change practice in the critical care unit

4.8.1.5 Insufficient time to implement evidence-based practices in the critical care unit

4.8.2 Discussion pertaining to barriers to implementing evidence-based practice based on the relevant resources

4.8.1 RESULTS

The results of the data analysis will be discussed in this section. The objective of the section was to explore the impact of resource availability in the critical care unit in relation to implementation of evidence-based practices.

4.8.1.1 Lack of confidence about changing to evidence-based practices in the critical care unit

The purpose of the statement was to explore whether participants felt comfortable about initiating evidence-based practices of their own accord in the critical care unit. Of the seventy participants $n=26(37\%)$ disagreed, while $n=9(13\%)$ strongly disagreed that they lacked the confidence to change to evidence-based in the critical care unit. A proportion of participants, $n=21(30\%)$, agreed, while $n=4(6\%)$ strongly agreed with the statement. The remaining participants, $n=10(14\%)$, had a neutral opinion toward whether they would have the confidence to change to evidence-based practice in the critical care unit.

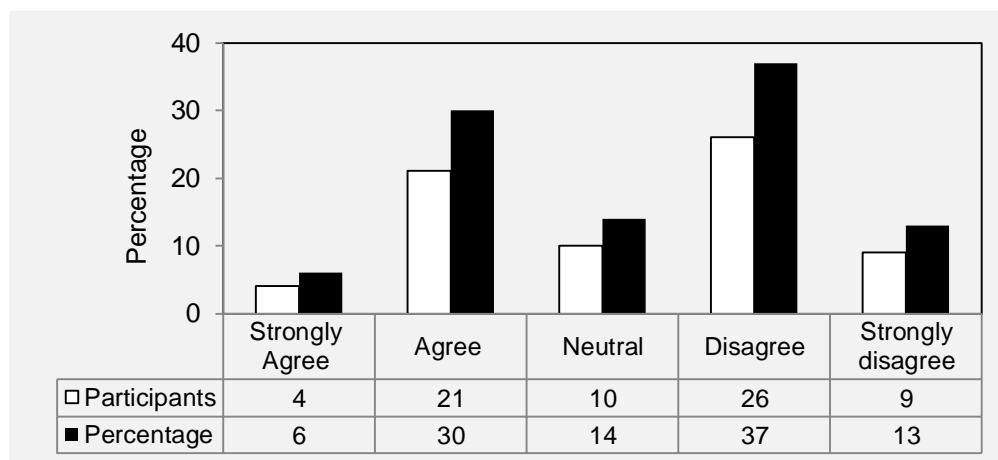


Figure 4.34: Lack of confidence about changing to evidence-based practices in the critical care unit

4.8.1.2 Lack of authority in the critical care unit to change to evidence-based practice

The intention of the statement was to explore participants' level of authority within the critical care unit to change practice to evidence-based practice. Derived from the data analysis $n=24(34\%)$ agreed whilst $n=16(23\%)$ participants strongly agreed that they lacked authority in the critical care unit to change practice. However, there were

n=18(26%) who disagreed, whilst n=5(7%) strongly disagreed with the statement. Of the remaining participants, n=7(10%), had a neutral stance toward the statement. See Figure 4.35 for an illustration of the findings.

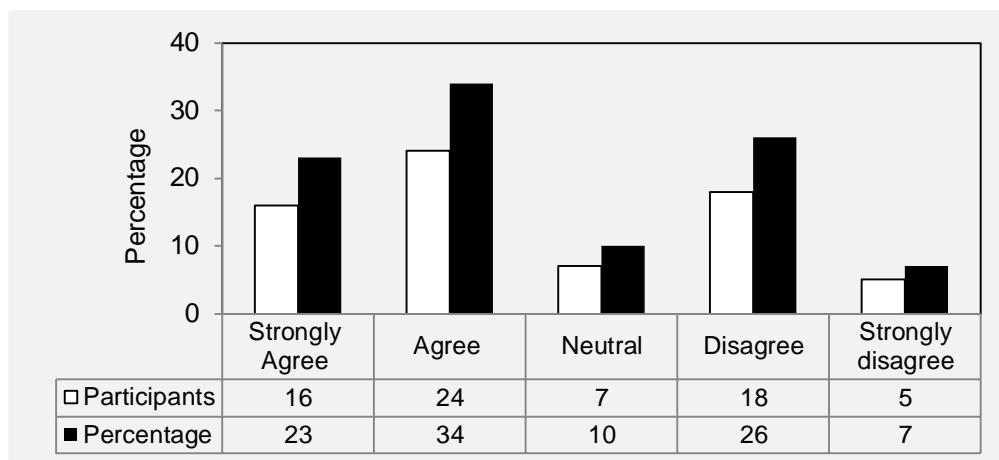


Figure 4.35: Lack of authority in the critical care unit to change to evidence-practice

4.8.1.3 Severity of the critically ill patient influences implementation of evidence-based practices

Figure 4.36 depicts the results of whether the severity of the critically ill patient influences implementation of evidence-based practice in the critical care unit. Of the seventy participants n=24(34%) agreed whilst n=10(14%) strongly agreed that a severe critically ill patient influenced evidence uptake. However, n=18(26%) disagreed whilst 5(7%) strongly disagreed with the statement. The remaining participants, n=13(19%), had a neutral opinion toward whether the severity of the critically ill patient influenced implementation of evidence-based practices.

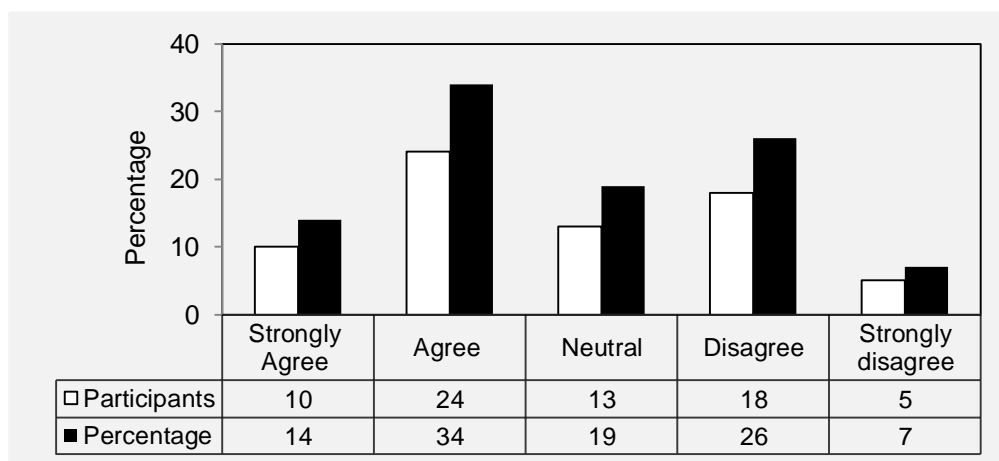


Figure 4.36: Severity of the critically ill patient influences implementation of

evidence-based practices

4.8.1.4 Insufficient resources to change practice in the critical care unit

The response to this statement is schematically presented in Figure 4.37. Of the seventy participants $n=22(31\%)$ disagreed while $n=11(16\%)$ strongly disagreed with the statement. There were some participants, $n=14(20\%)$, who agreed whilst $n=7(10\%)$ strongly agreed that there were insufficient resources in the critical care unit. From the data analysis $n=16(23\%)$ had a neutral opinion on whether there were sufficient resources within the critical care unit to change to evidence-based practice.

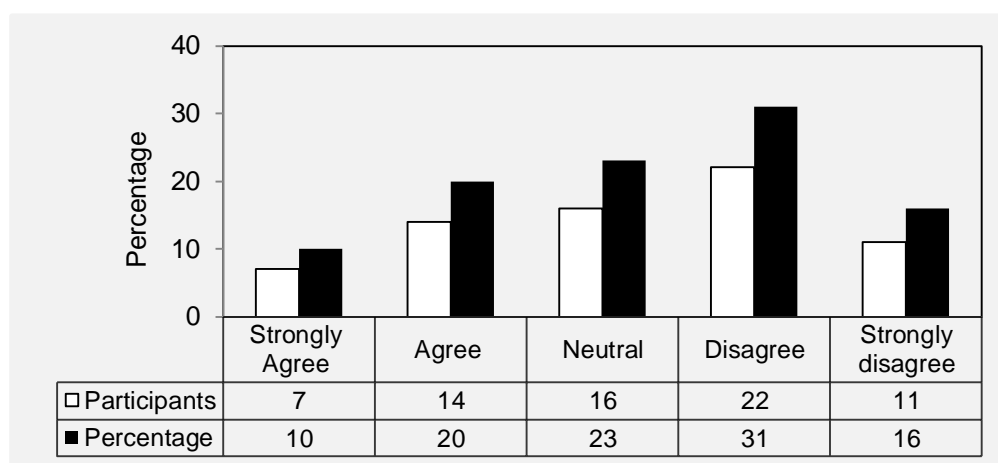


Figure 4.37: Insufficient resources to change practice in the critical care unit

4.8.1.5 Insufficient time to implement evidence-based practices in the critical care unit

Of the seventy participants $n=22(31\%)$ agreed whilst $n=15(21\%)$ strongly agreed that time was a barrier to the implementation of evidence-based practices within the critical care unit. From the data analysis $n=20(29\%)$ disagreed whilst a total of $n=6(8\%)$ strongly disagreed with the statement. The remaining participants $n=7(10\%)$ had a neutral opinion toward time as a barrier to the implementation of evidence-based practices in the critical care unit.

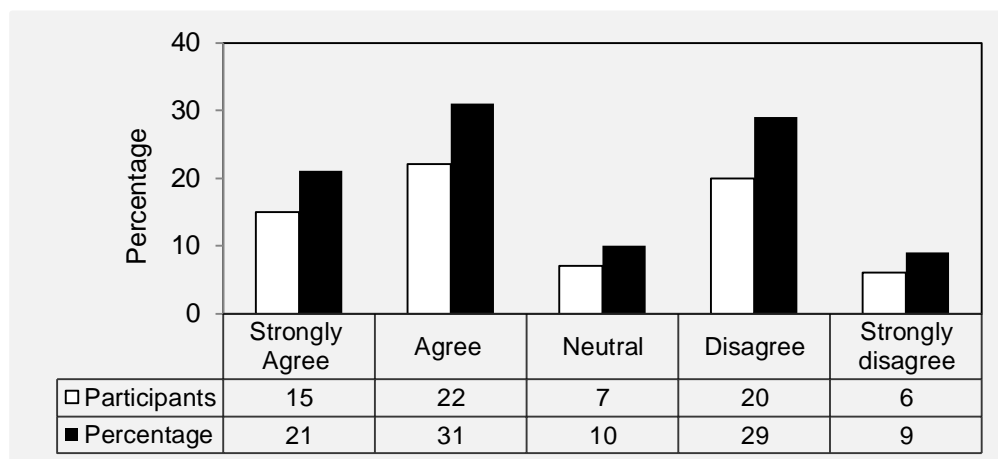


Figure 4.38: Insufficient time to implement evidence-based practice in the critical care unit

4.8.2 DISCUSSION PERTAINING TO THE BARRIERS TO IMPLEMENTING EVIDENCE-BASED PRACTICE BASED ON RELEVANT RESOURCES

Lack of confidence about changing practice to evidence-based practices in the critical care unit may stem from nurses' limited participation in research studies, inexperience with critical appraisal or even insufficient searching skills (Moule & Goodman, 2009:379). Since new evidence is not incorporated into practice nurses lack confidence about changing practice to that which is evidence-based. They tend to rely on nurse specialists instead of themselves for the acquisition of new knowledge. This is also a temptation for nurses to continue with traditional or ritualistic practices (Barker, 2010:109). The findings of this study indicated that 37% disagreed whilst 13% strongly disagreed that they lacked confidence about changing practice to that which was evidence-based.

One barrier to the implementation of evidence-based practice is the **lack of authority in the critical care unit to change practice**, especially in an organization that does not promote evidence-based practices (Burns & Grove, 2009:618). In a survey conducted by Gerrish *et al* (2008:67) the fourth highest-ranked barrier that was statistically significant was the lack of authority in the workplace to change practice. The findings of this study revealed that 34% of participants agreed whilst 23% strongly agreed that they lacked the authority to

change practice in the critical care unit where the study took place. The findings of this study are congruent with the above-mentioned studies.

Severity of the critically ill patients may be influential in the uptake of evidence. In a study done by Koehn and Lehman (2007:212), 40% of the participants indicated that their heavy workload prevented implementation of evidence-based practice as there was inadequate time. From the interviews that were conducted another theme that emerged was inadequate staffing which influenced the quality of patient care rendered, therefore searching for evidence was not perceived as a high priority by participants. In a study done by Lawless *et al* (2010:16), 56% of the participants indicated that a high patient acuity was one of the factors contributing to non-compliance with evidence-based practices. Thompson *et al* (2008:539) add that nurses are also not in control of their own time. Interruptions within units arise from the multidisciplinary team, the pressure of families or from managing alarms from the ventilators and pumps. Caring for a high-acuity patient requires vigilance in monitoring and treating abnormalities with the ultimate goal of stabilizing the patient.

The findings of this research study revealed that 34% of participants agreed whilst a further 14% strongly agreed that the severity of the critically ill might influence evidence uptake in the critical care unit. The findings of this research study are congruent with the findings of the above-mentioned studies.

According to Schmidt and Brown (2009:9), resources are essential to promote and sustain implementation of evidence-based practices. **Insufficient resources in the critical care unit** will hinder translation of evidence into clinical practice. Resources may refer to staffing, equipment, computers, journals or written evidence-based guidelines. Without adequate resources the success rates in implementation of evidence-based practices will dwindle. Brown *et al* (2009:15) add that resources refer specifically to the support within organizations. Any adoption of a new practice will require the manpower for in-service training, and costs for purchasing new stock or equipment will be as per recommendations within evidence-based guidelines. The reality is that some organizations are not willing to invest in new practices because of these financial implications. In a

survey that was conducted, 43% of the participants indicated that lack of access to resources e.g. a computer, journals was considered a major barrier by participants (Melnyk *et al*, 2004, 188).

The findings of this study indicated that 31% disagreed whilst 16% strongly disagreed that there were insufficient resources in the critical care unit to implement evidence-based practices. The findings of this study are incongruent with the above-mentioned studies. However, the context of where the study took place has to be considered, namely a critical care unit in a private hospital in the Nelson Mandela Metropole. The latest equipment is available in the unit and there are sufficient professional nurses to care for patients. However, there are no written journal articles or computers for nursing staff which indicates that there are insufficient resources in the critical care unit.

Aveyard and Sharp (2011:129) propose that **insufficient time to implement evidence-based practice in the critical unit** is the main barrier identified by nurses. In the work environment low staffing levels, high patient acuities, busyness and meeting deadlines contribute to non-compliance with evidence-based practices. Apart from the work environment nurses do not want to invest their personal time in accessing evidence due to family or other commitments. In a study done by Kocaman *et al* (2010:1909), 84% of a sample of 329 nurses stated that they had inadequate time within the nursing unit to implement practices based on evidence.

The findings of this research study were obtained from the 70 participants, of whom 31% agreed whilst 21% strongly agreed that insufficient time was a barrier preventing them from adopting evidence-based practices. The findings of this research study are congruent with the above-mentioned studies.

4.9 BARRIERS RELATED TO FACILITATION AND SUPPORT STRUCTURES REQUIRED FOR EVIDENCE-BASED PRACTICE IMPLEMENTATION

The section comprises facilitators and support structures to promote

implementation of evidence-based practice, namely, nine statements that were listed to explore facilitators of evidence-based practice in the critical care unit.

Textbox 4.6: Barriers related to facilitation and support structures required for evidence-based practice implementation

- | | |
|---------|---|
| 4.9.1 | Results |
| 4.9.1.1 | Nursing colleagues are supportive of initiatives to change to evidence-based practices in the critical care unit |
| 4.9.1.2 | Nurse managers are supportive of implementing evidence-based practice in the critical care unit |
| 4.9.1.3 | Physicians are supportive of implementing evidence-based practices in the critical care unit |
| 4.9.1.4 | Professional nurses are open and receptive to the use of best practice guidelines in the care of the critically ill patient |
| 4.9.1.5 | The organisation will be able to support best-practice guideline development and implementation |
| 4.9.1.6 | The institutional management is open and willing to participate in evidence uptake |
| 4.9.1.7 | In-service training will promote understanding of, and adherence to, evidence-based practices |
| 4.9.1.8 | An evidence-based mentor or champion is needed for implementation of evidence-based practice |
| 4.9.1.9 | Best-practice guidelines will promote evidence based practices |
| 4.9.2 | Discussion pertaining to barriers related to facilitation and support structures required for evidence-based practices |

4.9.1 RESULTS

The section comprises all the results that have been derived from data analysis. The results are presented graphically using bar graphs. The questionnaire comprised nine statements that will be discussed in this section.

4.9.1.1 Nursing colleagues are supportive of initiatives to change to evidence-based practices in the critical care unit

Of the seventy participants $n=24(34\%)$ agreed whilst $n=6(9\%)$ strongly agreed that their nursing colleagues were supportive of implementing evidence-based practice. However, $n=24(34\%)$ disagreed whilst $n=3(4\%)$ strongly disagreed that nursing colleagues were supportive of implementing evidence-based practices. As illustrated in Figure 4.39 there were a few participants, $n=13(19\%)$, that had a neutral stance toward the statement.

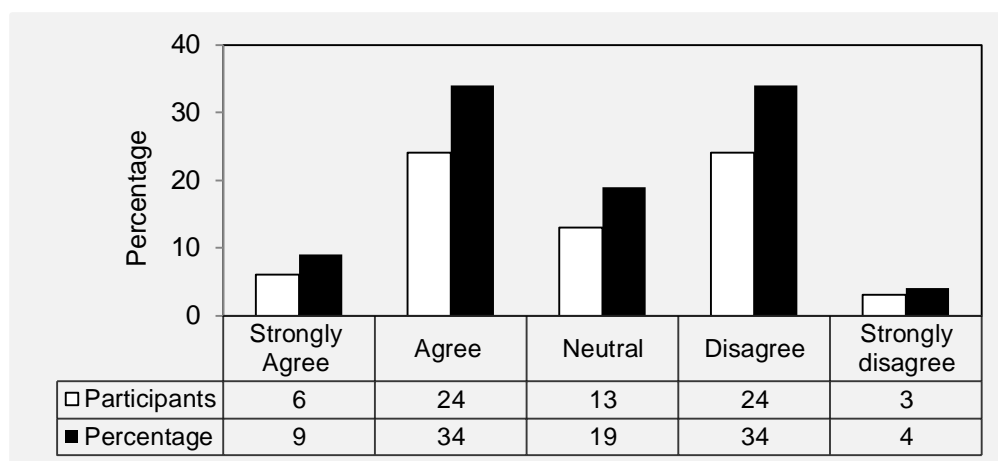


Figure 4.39: Nursing colleagues are supportive of initiatives to change to evidence-based practices in the critical care unit

4.9.1.2 Nurse managers are supportive of implementing evidence-based practice in the critical care unit

The statement was aimed toward determining whether the participants were of the opinion that nurse managers were supportive of the implementation of evidence-based practice. Figure 4.40 depicts the results from the data analysis, which indicate that $n=33(47\%)$ agreed whilst $n=13(19\%)$ strongly agreed that nurse managers were supportive of implementing evidence-based practices. There were $n=16(23\%)$ who disagreed while $n=3(4\%)$ strongly disagreed with the statement. The remaining participants, $n=5(7\%)$, had a neutral opinion about the statement.

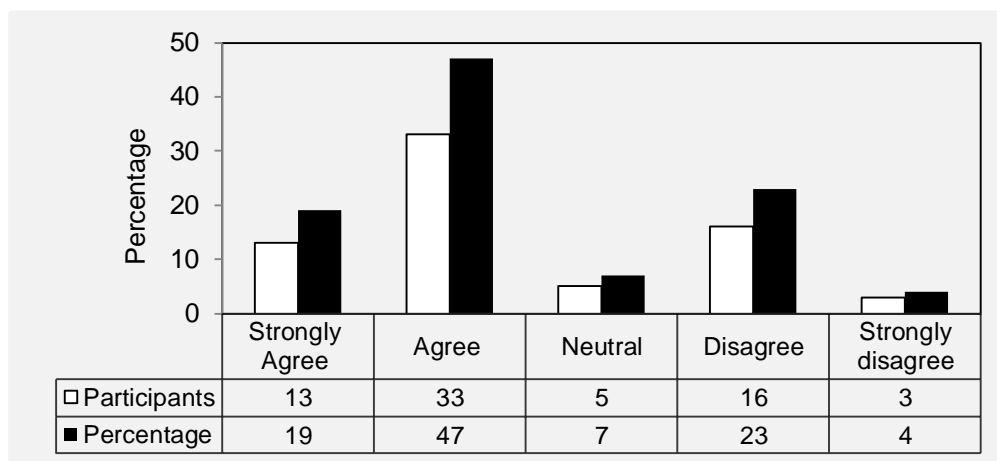


Figure 4.40: Nurse managers are supportive of implementing evidence-based practice in the critical care unit

4.9.1.3 Physicians are supportive of implementing evidence-based practices in the critical care unit

The purpose of the statement was to ascertain whether physicians at the institution were supportive of implementing evidence-based practices in the critical care unit. A proportion of participants, n=19(27%), agreed whilst n=6(9%) strongly agreed with the statement. Of the remaining participants n=18(26%) disagreed while n=6(9%) strongly disagreed with the statement. Derived from the data analysis n=21(29%) had a neutral stance toward the statement that physicians were supportive of implementing evidence-based practices in the critical care unit.

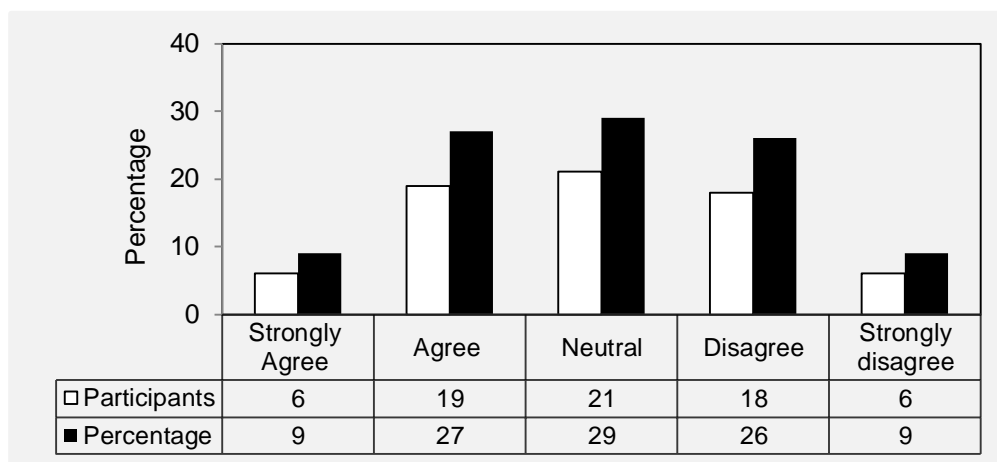


Figure 4.41: Physicians are supportive of implementing evidence-based practices in the critical care unit

4.9.1.4 Professional nurses are open and receptive to the use of best-practice guidelines in the care of the critically ill patient

Figure 4.42 provides a summary of responses on whether professional nurses are open to using best-practice guidelines in the critical care unit. Of the seventy participants $n=34$ (49%) agreed whilst $n=8$ (11%) strongly agreed that professional nurses were open to using evidence-based guidelines. However, a total of $n=14$ (20%) disagreed whilst $n=2$ (3%) strongly disagreed that professional nurses were open to the use of evidence-based practice. A proportion of participants, $n=12$ (17%), had a neutral stance towards the statement

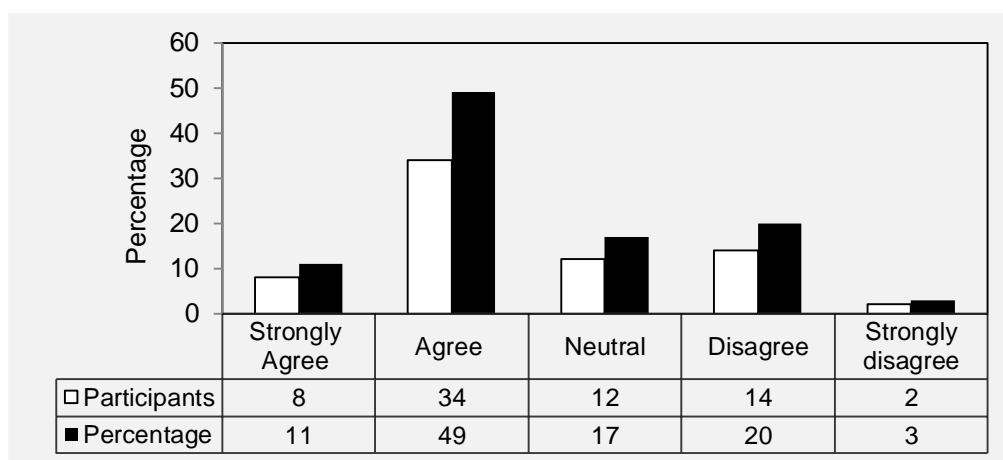


Figure 4.42: Professional nurses are open and receptive to the use of best practice guidelines in the care of the critically ill patient

4.9.1.5 The organization will be able to support best-practice guideline development and implementation

The statement was posed to participants to obtain their opinion of whether the organization would be supportive of implementing best-practice guidelines. Results reflected in Figure 4.43 indicate that $n=35$ (50%) agreed whilst $n=5$ (7%) strongly agreed with the statement. A proportion of participants, $n=12$ (17%), disagreed with the statement whilst none of the participants indicated that they strongly disagreed with the statement. The remaining participants, $n=18$ (26%), had a neutral stance toward whether the organization would be able to support best-practice guideline development and implementation.

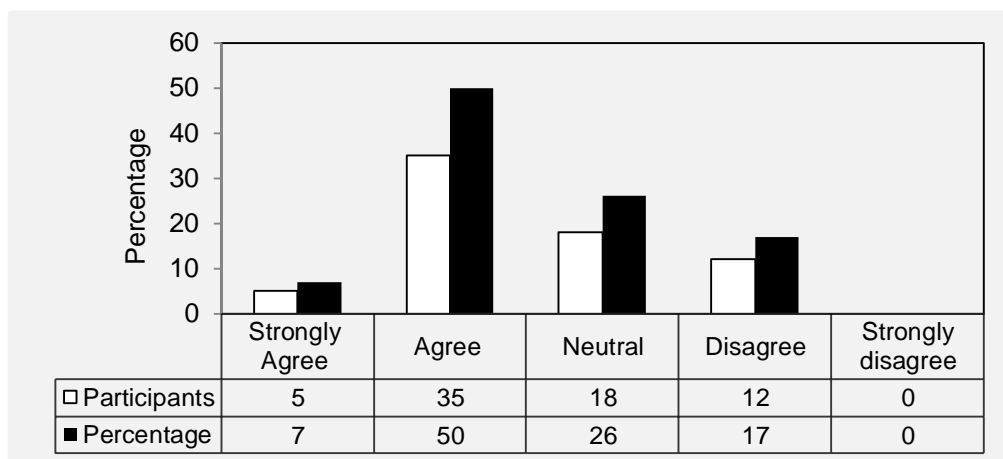


Figure 4.43 The organization will be able to support best-practice guideline development and implementation

4.9.1.6 The institutional management is open and willing to participate in evidence uptake

As illustrated in Figure 4.44 a proportion of participants $n=22(31\%)$ agreed whilst $n=6(9\%)$ strongly agreed that the institution would be open to participating in evidence uptake. There was a percentage, $n=28(40\%)$, who had a neutral opinion toward whether the institutional management was open to adopting evidence-based practices. However, $n=13(19\%)$ disagreed whilst $n=1(1\%)$ strongly disagreed that the institution would participate in evidence translation.

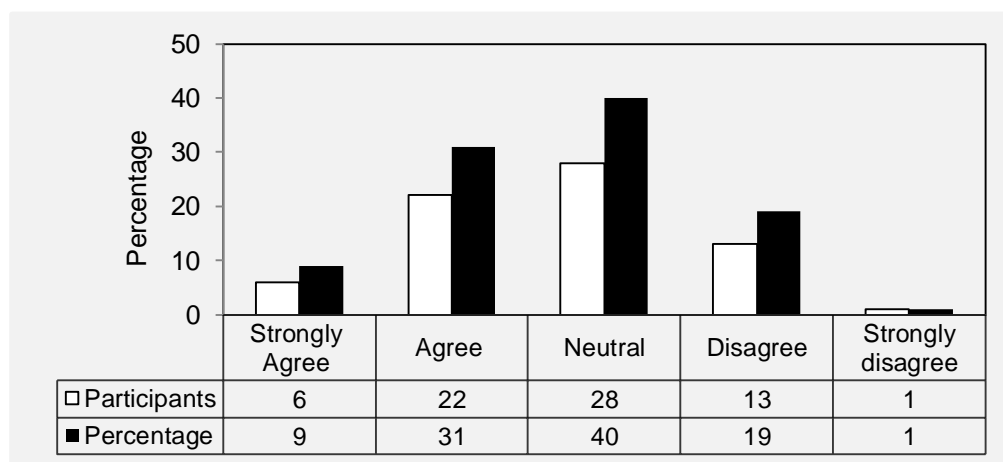


Figure 4.44: The institutional management is open and willing to participate in evidence uptake

4.9.1.7 In-service training will promote your understanding of, and adherence to, evidence-based practices

The statement was presented to participants to determine whether in-service education would promote their understanding of, and adherence to, evidence-based practice in the critical care unit. The results are schematically presented in Figure 4.45 indicating that n=35(50%) participants agreed whilst n=33(47%) strongly agreed that in-service education would promote understanding of, and adherence to, evidence-based practice. There were n=2(3%) who had a neutral stance toward evidence uptake. None of the participants disagreed or strongly disagreed with the statement.

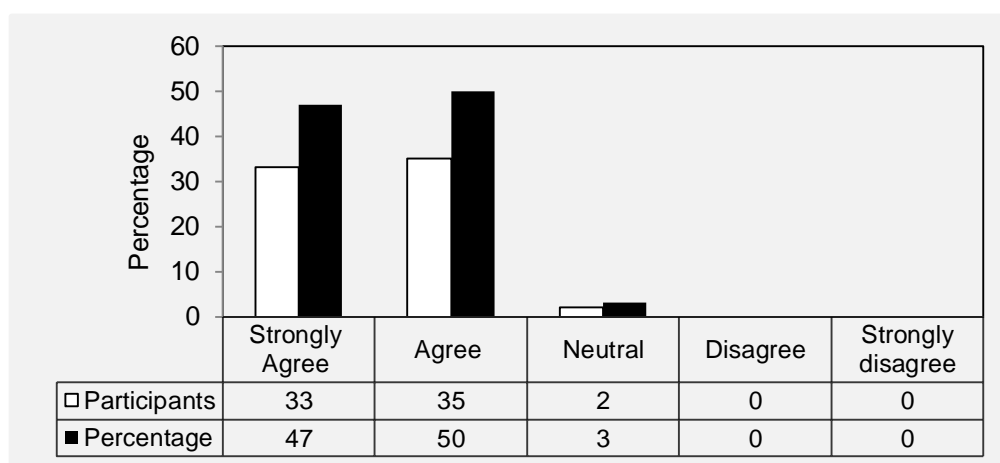


Figure 4.45: In-service training will promote your understanding of and adherence to evidence-based practices

4.9.1.8 An evidence-based practice mentor or champion is needed for implementation of evidence-based practices

Of the seventy participants n=33(47) agreed whilst n=31(44%) strongly agreed that an EBP mentor would facilitate evidence uptake. A proportion of participants, n=4(6%), had a neutral stance toward the statement. However, n=2(3%) disagreed with the statement whilst none of the participants strongly disagreed with the statement. The findings are illustrated in Figure 4.46.

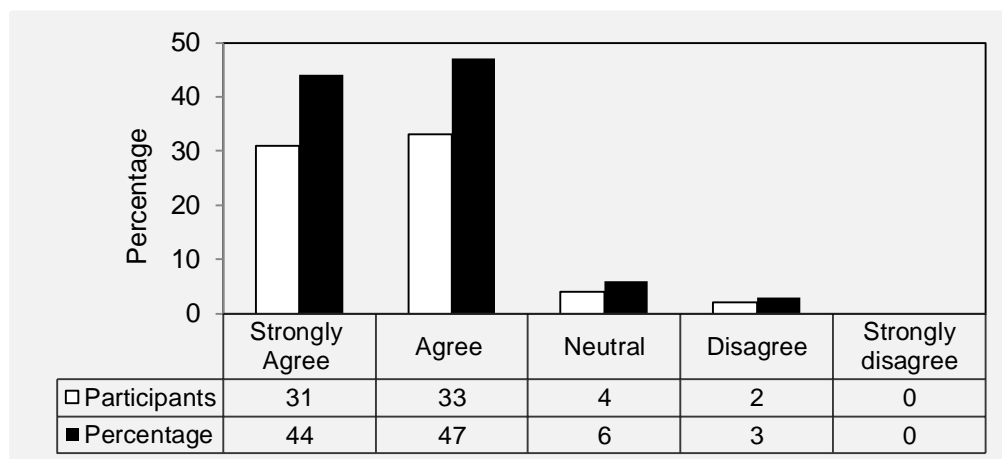


Figure 4.46: An evidence-based practice mentor or champion is needed for implementation of evidence-based practice

4.9.1.9 Best-practice guidelines will promote evidence-based practices

From the data analysis displayed in Figure 4.47 there were n=35(50%) who strongly agreed while n=32(46%) agreed that best-practice guidelines could promote evidence uptake. There were n=2(3%) who had a neutral stance toward the statement. There were n=1(1%) who disagreed whilst there were no participants who strongly disagreed with the statement.

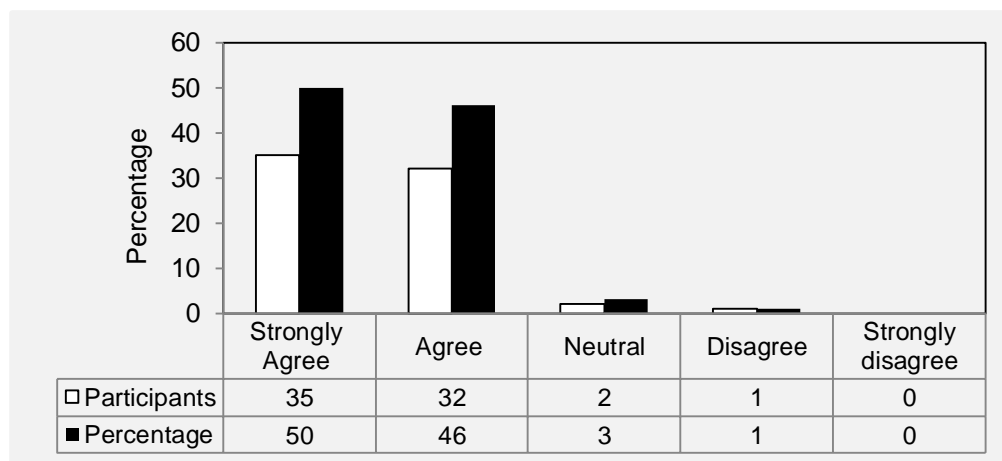


Figure 4.47: Best-practice guidelines will promote evidence-based practices

4.9.2 DISCUSSION PERTAINING TO FACILITATION AND SUPPORT STRUCTURES REQUIRED FOR EVIDENCE-BASED PRACTICE IMPLEMENTATION

Support of EBP by nursing colleagues within the critical care unit can occur

by encouraging teamwork. The workload can be equally divided when initiating new practices. Management should allocate a time period to enable staff to perform searches, read evidence-based guidelines and discuss findings with team members (Schmidt & Brown, 2009:373). In a survey done by Gerrish *et al* (2007:334) it was found that a facilitator of implementing evidence-based practice was that nursing colleagues were supportive of one another during implementing practices based on evidence. According to Ploeg *et al* (2007:214), 125 participants participated in the research study. A theme that was identified in the semi-structured interviews was that teamwork was necessary for successful implementation of evidence-based practice.

The findings of this research study revealed that there were 34% agreed whilst 9% strongly agreed that support by nursing colleagues was important for successful implementation of evidence-based practices. The findings of this study are congruent with the above mentioned studies.

According to Schmidt and Brown (2009:35), the **role of nurse managers** is crucial to the promotion of evidence-based practices. They should act as role models by integrating evidence into their duties and encourage staff to base clinical decision-making on evidence. Staff should also be evaluated according to EBP involvement during yearly performance appraisal to ensure that practices based on evidence are sustained. LoBiondo Wood and Haber (2010:415) concur that strong leadership plays an integral role in adoption of evidence-based practices. In a survey done by Breimaier *et al* (2011:1751), 39% of the participants indicated that support from nurse managers was necessary for implementation of evidence-based practice within an organization.

The findings from this study revealed that 47% agreed while 19% strongly agreed that nurse managers were supportive of implementing evidence-based practice. The findings of this study are congruent with the above-mentioned studies.

For implementation of evidence-based practices to be successful, support from the multidisciplinary team is essential. That includes **support from physicians** (Gerrish, *et al*, 2007:68). According to Lang *et al* (2007:359) physicians can be

resistant to change, which may be the result of knowledge deficits or perhaps comfort with traditional practices. A combination of interventions to promote physicians implementing evidence-based practices in the critical care unit may range from educational workshops and reminders to audits. In a survey done by Kocaman *et al* (2010:1909), 78% of the participants stated that physicians within their organization were resistant to change. In a systematic review 26 of 53 studies ranked lack of physician support as one of the top ten barriers to evidence-based practices (Kajermo *et al*, 2010:32).

The findings of this research study indicated that 27% agreed while 9% strongly agreed that physicians were supportive of implementing evidence-based practice. The findings of this study are incongruent with the above-mentioned studies.

According to Craig and Smyth (2007:238), **professional nurses implementing best-practice guidelines** can facilitate evidence uptake in clinical practice. Guidelines may be developed at national or international level. Rigorous guidelines based on the best research evidence are available on online sites such as the National Institute of Clinical Health and Excellence (NICE), The Registered Nurses Association of Ontario (RNAO) or The National Guideline Clearinghouse is based on the latest clinical evidence. The guidelines on those sites, for instance, stipulate the hierarchy of evidence used as well as the rationale for recommended practices.

The findings from this research study revealed that 49% agreed while 11% strongly agreed that professional nurses were open to using best practice guidelines in the critical care unit.

Organizations that support implementation of evidence-based practices are imperative to improve success of evidence uptake and sustainability (Mortaine & Fontaine, 2009:5). An organisational culture that possesses strong leadership support an all nursing levels, encourages teamwork and the presence of EBP champion will facilitate implementation of evidence-based practices (Ploeg *et al*, 2007, 213). An organization must also possess the necessary infrastructure needed to adopt new evidence-based practices. Staffing, policies and procedures should all be aligned to encourage evidence-based practice (Smith & Donze,

2010:61).

The findings of this research study indicated that 50% agreed whilst 7% strongly agreed that the organization would be able to support initiatives to implement evidence-based practices. The results of this study are congruent with the above-mentioned studies.

Translation of evidence to practice is guaranteed with the **support of the institutional management**. Administrators who value EBP should be recruited to organizations. The institutions management vision and mission statements should be congruent with providing care to patients based on the best evidence (Schmidt & Brown, 2009:9). In a study done by Robinson *et al* (2006:471), 29% stated that support from management within organizations would encourage them to implement evidence-based practice.

The findings of this research study revealed that 31% agreed whilst 9% strongly agreed that institutional management would be open to evidence uptake. The findings of this study are congruent with the above-mentioned studies.

DiCenso *et al* (2005:17) propose that successful implementation of evidence-based practices should encompass multifaceted interventions that use a variety of strategies instead of a single intervention. **In-service training within organizations** is one method that will enlighten staff about methods of providing evidence-based practice when providing care to critically ill patients. During these sessions learners can actively participate with experts on the topic. Empowering staff with literature searching skills can also be included in these sessions. Salmond (2007:117) adds that part of training should focus on enrichment of computer skills, how to perform searches and how to appraise journal articles or guidelines critically. In a survey by Breimaier *et al* (2011:1751) 49% indicated that educational programmes would promote implementation of evidence-based practice.

The findings of this research study revealed that 50% agreed while 47% strongly agreed that in-service education on EBP would promote evidence uptake. The

findings of this study are congruent with the above-mentioned studies.

The presence of an **EBP champion or mentor** is one effective strategy that has been described in literature to promote implementation of evidence-based practice (Mortaine & Fontaine, 2009:5). An EBP champion is an expert clinician within the nursing unit who searches for and disseminates evidence to the rest of the team (LoBiondo-Wood & Haber, 2010:410). Organizations must provide EBP champions who will have the time and skills dedicated to evidence-based practices, and then inform the rest of the staff of the latest evidence. Therefore nursing staff is not pressurized to perform individualized searches for evidence. The strategy enables care rendered to be based on the latest updated evidence (Smith & Donze, 2010:61).

The findings of this research study revealed that 47% agreed while 44% strongly agreed that an EBP mentor was necessary in the critical care unit to perform searches and disseminate that information to the rest of the staff. The findings of this study are congruent with the above-mentioned recommendations.

Best-practice guidelines based on evidence can promote evidence-based practices by ensuring safe practice and correct treatment. Variations in practice will also be avoided (Craig & Smyth, 2007:260). In a study done by Sherriff *et al* (2007:363), participants were optimistic toward developing guidelines or searching for existing guidelines based on EBP. They indicated that they were willing to search and appraise evidence as long as time was allocated during working hours.

The findings of this research study revealed that 50%strongly agreed while 46% agreed that best-practice guidelines implemented by professional nurses within the critical care unit could facilitate evidence uptake. The findings of this research study are congruent with the above mentioned recommendations.

4.10 SUMMARY OF THE CHAPTER

The chapter was a discussion of data that was analysed from the data-collection

instrument, which was a structured questionnaire that explored the barriers to the implementation of evidence-based practices. The data was extracted from 70 professional nurses working in a critical care unit in a private hospital within the Nelson Mandela Metropole. Data has been presented using graphs. Descriptive statistics have been used.

It is quite evident from the study findings that many barriers exist that are congruent with information presented in research studies that explore barriers to the implementation of evidence-based practice. The results are concerning as patients who are in the critical care unit are already in a compromised state and nurses using methods not based on scientific evidence can further contribute to the patient developing complications. However, it is also evident that many participants were optimistic about the integration of evidence into clinical practice by stating the need for possible facilitators to implement evidence-based practice. The following chapter will discuss recommendations to enhance the implementation of evidence-based practice in the critical care unit.

CHAPTER FIVE

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The purpose of this research study was to identify barriers to the implementation of evidence-based practices in a critical care unit. Derived from the data analysis were all the research findings that were described in Chapter Four. Findings from the research study highlighted that there were barriers to the implementation of evidence-based practice in the critical care unit that will be discussed later in this chapter. Conclusions, limitations and recommendations for the research study will be discussed in this chapter. Recommendations will be presented in two parts namely pertaining to various dimensions such as nursing research, nursing education, nursing practice and recommendations for data analysis of this research study.

5.2 CONCLUSIONS OF THE RESEARCH STUDY

There were two research objectives that were stipulated for the research study. The research objectives that were listed in Chapter One are follows:

- to explore and describe barriers to the implementation of evidence-based practices in the critical care unit, and
- to make recommendations to enhance implementation of evidence-based practices in the critical care unit.

The findings of this research study revealed that there were barriers to the implementation of evidence-based practice resulting in lack of efficient evidence translation in the critical care unit. According to the data analysed certain conclusions can be deduced that will be elaborated on in this section. Results reflected that participants were not completely familiar with evidence-based practices. Information from colleagues or peers was the most frequently accessed sources by participants in the research study. Results of

this research study also revealed that professional nurses based their practices on what they had been taught in the critical care unit when caring for critically ill patients.

From the online sources that were listed in the questionnaire search engines such as Google and Wikipedia were the most frequented by participants. These search engines lack quality control and may contain information that lacks validity or reliability. Another aspect which guided clinical decision-making in the care of the critically ill patient was intuition. However, intuition is not based on scientific principles or evidence at all. There is too much reliance on instinct or gut feeling. Participants also stated that a barrier to the implementation of evidence-based practice arose as a result of resistance to change, from professional nurses in the critical care unit. A barrier that was identified for hindering evidence uptake was a heavy workload experienced by professional nurses in the critical care unit. There was general consensus that currently, a research-practice gap existed within the critical care unit.

Furthermore, a conclusion drawn was that it was difficult to locate evidence. Even though evidence was found insufficient time to read articles or best-practice guidelines within the critical care unit posed a problem. Participants from the study also revealed that inaccessibility to computers was a reality in the critical care unit. A concern for participants was the amount of literature that pertains to critical care nursing. An issue that has arisen from the research study is that participants stated they lacked the authority to change to evidence-based practices in the critical care unit.

5.3 RECOMMENDATIONS RELATED TO NURSING RESEARCH, NURSING EDUCATION, NURSING PRACTICES AND DATA ANALYSIS

The aim of this section is to highlight the implications of this research study in the nursing arena. Recommendations to enhance the implementation of evidence-based practices in the critical care unit will be elaborated upon later in the chapter.

5.3.1 RECOMMENDATIONS RELATED TO NURSING RESEARCH

The research study has prompted future studies with regard to evidence-based practices. Future descriptive studies can explore facilitators promoting and sustaining evidence-uptake within critical care units. As the study was conducted in a single critical care unit in the Nelson Mandela Metropole it is recommended that forthcoming studies incorporate both the public and private sectors to provide a true reflection of the barriers to evidence-based practices in critical care units.

Further research can be done to explore barriers to the implementation of evidence-based practices in other clinical settings such as operating theatres, nephrology units, trauma units or general wards. Research studies that can be conducted in the future may explore an aspect of evidence-based practice from a qualitative viewpoint. Qualitative studies exploring perceptions or attitudes toward evidence-based practices can be explored through interviews or focus groups. Furthermore, future research studies could explore the impact training on literature-searching skills and critical appraisal has on evidence uptake within critical care units.

5.3.2 RECOMMENDATIONS RELATED TO NURSING EDUCATION

With regard to evidence-based practices it is imperative that they are incorporated at the under-graduate and post-graduate levels. Exposing nursing students to the components of evidence-based, literature-searching skills, critical appraisal of journal articles and implementing best-practice guidelines is crucial in an era when nursing practice no longer relies on tradition. Professional nurses already working in clinical practice should attend short learning programmes on evidence-based practices.

5.3.3 RECOMMENDATIONS RELATED TO NURSING PRACTICE

Derived from the data analysis recommendations related to nursing practices can be suggested. Strategies to promote evidence uptake in the critical care unit have been explored and short learning programmes intended for professional nurses working within critical care units may also overcome barriers. However, it is imperative that stakeholders such as nursing and institutional management attend

these programmes to ensure that the organization embraces change. Programme content may include the historical context of evidence-based practice, the components of evidence-based practices, how to interpret research articles or best-practice guidelines, how to access scientific online resource sites and teaching skills such as literature searching and critical appraisal. Creating awareness will prompt professional nurses to use critical thinking and reflective practice with the purpose of providing the best research evidence to critically ill patients.

Within organizations healthcare workers should be compelled to attend workshops to remain abreast of the latest updated evidence-based practices. Another strategy may be to incorporate professional nurses' contribution to evidence-based practices within the critical care unit as part of their yearly performance appraisal. Best-practice guidelines on specific clinical conditions can ensure that evidence is rendered to critically ill patients according to the best research evidence. Organizations should adopt best-practice guidelines in caring for patients. The establishment of journal clubs within the critical care unit can ensure that high-level evidence is accessed and by doing so professional nurses can base their care on the latest evidence. For instance, if each professional nurse reads a journal article on a specific topic during monthly meetings time can be saved in comparison to an individual practitioner trying to keep up to date. Other strategies that should be incorporated are reminders or audits that can be developed in critical care units to ensure sustainability of evidence-based practices.

5.3.4 RECOMMENDATIONS RELATED TO DATA ANALYSIS OF THIS RESEARCH STUDY

For this section significant results extracted from this research study will be presented and recommendations for the findings will be made. The recommendations will be substantiated with literature. The findings presented in this section have already been discussed in Chapter Four.

5.3.4.1 Section B: Implementation of evidence-based practices

Findings:

- 34% of the participants were to a moderate extent familiar with evidence-based practices
- 54% of the participants indicated that “evidence-based practice is the conscientious explicit and judicious use of the current best evidence in making decisions about the care of patients”
- 57% of the participants searched for evidence occasionally to support clinical decisions
- 50% of the participants accessed best-practice guidelines occasionally
- 43% of the participants indicated they would ask their peers/ colleagues when they need information to guide clinical decision-making
- 59% of the participants frequently accessed Google
- 50% of the participants would wean a patient from the mechanical ventilator according to information that was taught in the unit

Recommendations:

According to Walsh *et al* (2010:30) a global initiative should be undertaken in the nursing profession to highlight the importance of integrating evidence into clinical practice. Education programmes intended for professional nurses on the topic of evidence-based practice will raise awareness and enhance familiarity of evidence-based practices. LoBiondo-Wood and Haber (2010:419) add that evidence-based practice should be incorporated into an organization’s mission, vision and strategic plan to create a culture of evidence-based practice. In a survey done by Ubbink *et al* (2011:91) involving 696 participants who revealed the highest-ranked facilitator that would promote evidence-based practice was dedicated time to learn and practice the translation of evidence into practice.

It is thus recommended that short learning programmes or workshops be presented to professional nurses in the critical care units, which will enhance the familiarity with evidence-based practices. The content of such courses may extend from the concept known as evidence-based practice, accessing sources of evidence, how to perform literature searches, how to conduct a critical appraisal

and how to interpret research reports. Stakeholders for instance unit managers and other members of the multi-disciplinary team in the critical care unit should be made more aware of evidence-based practice and the benefits thereof for the critically ill patient.

Smith and Donze (2010:67) mention that available, recent and relevant evidence should be accessed to ensure validity of evidence-based practices. According to Burns and Grove (2009:618) best-practice guidelines provide a gold standard for patient care resulting improved patient outcomes and in effect a decrease in morbidity and mortality rates. Salmond (2007:117) state pre-appraised summaries or best-practice guidelines on databases such as the Cochrane library can enhance translation of recent evidence into practice as it is accessible.

Recommendations can thus be made that best-practice guidelines based on evidence be accessed regularly to minimize variations in practice and bridge the research-practice gap. Best research evidence should be consulted when seeking information.

Relying on information from colleagues or peers may be unreliable as it may be based on tradition, ritual or personal experience. In a survey done by Gerrish *et al* (2008:66) the third highest-ranked source that was frequently used by participants was the knowledge that their colleagues or peers shared. Parahoo (2006:8) highlight accessing the best research evidence is the best recommended practice as researchers collect and analyse data rigorously, then present findings and recommendations and rationale. It is thus recommended that professional nurses in the critical care unit do not rely on unscientific methods for information such as asking colleagues or peers, tradition or ritual as it exposes patients to variations and perhaps outdated practices.

According to Courtney and McCutcheon (2010:7) search engines such as Google lack quality control as information may be extracted from untrustworthy sources therefore should be avoided. The National Guideline Clearinghouse on the other hand, provides an array of best-practice guidelines on various disease conditions. Recommendations can be thus be made to critical care nurses through educational programmes to avoid unscientific online sources such as Google

when seeking scientific answers. Databases such as the National Guideline Clearinghouse, Joanna Briggs Institute (JBI), NICE or The Cochrane Collaboration should rather be accessed.

Parahoo (2006:444) proposed that practices should be based on the best research evidence as other information sources that are unscientific may be harmful to patients. It is therefore recommended that information taught in the critical care unit should not be the preferred source of reference when caring for patients as there is a risk that the information might be based on personal experience, out-dated textbooks or irrelevant practices.

5.3.4.2 Section C: Barriers related to the knowledge of the nurse with regard to evidence-based practice

Findings:

- 59% of the participants agreed whilst 25% strongly agreed that they based clinical decisions on information that they gained from training as a professional nurse
- 36% of the participants agreed whilst 17% strongly agreed that they used their intuition to guide them in caring for patients
- 49% of the participants agreed whilst 10% strongly agreed that professional nurses in the critical care unit were resistant to implementing evidence-based practices
- 29% of the participants agreed whilst 27% strongly agreed that the workload of nurses were too heavy to keep up with evidence-based practices.
- 43% of the participants agreed whilst 19% strongly agreed that the efficient translation of evidence into clinical practice was lacking

Recommendations:

Gerrish *et al* (2007:334) indicates that professional nurses often base their clinical decisions on information that they have obtained during their training. Parahoo (2006:8) states that there is a risk that relying on information obtained from

training as a professional nurse exposes patients to out-dated and harmful practices. Aveyard and Sharp (2010:140) add professional nurses should adopt an attitude whereby they question if their practice is based on the best integrated evidence.

Due to the high percentage of professional nurses that agree that they base their clinical decision-making on what they were taught in their training, it is thus recommended that a greater awareness be created amongst professional nurses to continuously update their knowledge. The importance of relying on the best research evidence when making clinical decisions pertaining to the care of critically ill patients and not information obtained during training as a professional nurse should be emphasized.

Parahoo (2006:5) indicates intuition is not based on a rational reasoning but on instinct or gut feeling. Schmidt and Brown (2009:9) suggest that the value evidence-based practice improve standards of care and patient outcomes, whereas with intuition there is no way of assessing if outcomes can be improved. A comparison of the benefits of intuition versus the best research evidence should be done, so that the value of evidenced-based practice can be realized. Improvement in statistics and trends can be used to justify the rationale for implementing evidence-based practices versus unscientific methods such as ritual or tradition. Based on the study results, it is thus recommended that professional nurses base their practice on evidence and not on intuition, as patient outcomes will be improved. Traditional, ritualistic and intuitive practises amongst professional nurses in the critical care unit should be discouraged.

Barker (2010:117) mentions that for successful implementation of evidence-based practices to take place, staff must be flexible and committed to embracing change. If best-practice guidelines are adopted in a nursing unit all professional nurses should be compliant in adherence to ensure consistency in care rendered with the ultimate benefit in improving patient care. Schmidt and Brown (2009:10) add that when there is resistance to change reasons for the resistance should be explored and resolved. In a survey done by Ubbink *et al* (2011:92) a major facilitating factor identified was support from team members, physicians and management.

Based on the study results, it is recommended that professional nurses realize that teamwork and support from colleagues is a facilitator to the implementation of evidence-based practice. Collaborative relationships amongst members of the multidisciplinary team members caring for the critically ill patient should be encouraged.

DiCenso *et al* (2005:194) indicate there should be a suitable nurse-to-patient ratio to ensure adherence to evidence-based practices. The roles and responsibilities for professional nurses should be clearly defined with avoidance of unnecessary tasks to ensure the workload of professional nurses are manageable. It is therefore recommended that the workload of professional nurses are evaluated so that unnecessary tasks are minimized and the core focus remains on delivering nursing care based on the best research evidence.

Ubbink *et al* (2011:92) mentions the research practice gap can be bridged through use of reminders, audits, journal clubs, regular research meeting and incorporating discussions of evidence during handovers. Management can also ensure sustainability through reviewing employees' participation in evidence-based practices. Salmond (2007:117) adds that relations have to be forged between nurse researchers and nurses in clinical practice for the successful implementation of evidence-based practice. Based on the study results, it is recommended that methods which will promote translation of evidence into practice are explored and discussed amongst professional nurses in the critical care unit.

5.3.4.3 Section D: Barriers to finding and reviewing evidence

Findings:

- 34% of the participants agreed whilst 28% strongly agreed that there was insufficient time in the critical care unit to find and read research reports
- 49% of the participants agreed whilst 17% strongly agreed that access to research evidence was poor (slow or no computers available) in the critical care unit
- 60% of the participants agreed whilst 13% strongly agreed that research reports were not readily available in the critical care unit

- 40% of the participants agreed whilst 20% strongly agreed that the amount of literature pertaining to the critical care unit was overwhelming
- 30% of the participants agreed whilst 7% strongly agreed that research reports were not published fast enough

Recommendations:

Salmond (2007:117) indicates that organizations should provide adequate time in which to search and find the best research evidence. Walsh (2010:30) adds that time management skills should also be taught during short learning programmes on evidence-based practice. Professional nurses should be taught how to manage their time effectively in order to read and appraise evidence. In a survey conducted by Ring *et al* (2005:1053) one of the main driving forces identified was adequate time to find and read evidence. Recommendations will be made to management that professional nurses in the critical care unit should be granted allocated time on a daily basis in to perform searches or read research reports therefore, the implementation of evidence-based practice in the care of the critically ill patient will thus be enhanced.

Aveyard and Sharp (2010:128) suggests computers should be used to access online sources based on evidence. Barker (2010:117) mentions that resources such as computers will enhance the sustainability of evidence-based practices. Schmidt and Brown (2009:9) indicate that even though organizations may not have access to computers, innovative strategies such as applying for sponsorships from pharmaceutical companies or writing a motivation letter to managers stipulating the importance of computers for accessing evidence in their organization. It is recommended there should be at least one dedicated computer in critical care units that is available to perform searches to ensure that the latest evidence is consulted.

Aveyard and Sharp (2010:130) suggests that articles and guidelines be kept in the nursing unit so that it is easily accessible. Schmidt and Brown (2009:10) add that through establishing journal clubs research reports can be discussed and shared within nursing unit ensuring that the latest evidence is accessed. Based on the study results, it is recommended that organizations subscribe to journals which

should be available in critical care units so that nursing staff can easily read research reports. It would also be beneficial if journal clubs are established amongst professional nurses in the critical care unit to discuss the latest evidence. Ubbink *et al* (2011:91) indicate that organizations should incorporate methods that such as accessing pre-appraised evidence or best-practice guidelines which can reduce the workload of nurses. Walsh (2010:30) mentions that acquisition of skills such as critical appraisal and literature-searching are facilitating agents to evidence uptake. Salmond (2007:117) mentions that professional nurses should be taught which online sources to access in order to avoid unscientific sources. Educational sessions should also include how to interpret the statistical analysis and to determine implications for clinical practice. Recommendations can be made that critical appraisal and literature-searching skills be taught to professional nurses, which will avoid the use of redundant information in making clinical care decisions. In empowering professional nurses with these skills, they may no longer feel that there is overwhelming literature pertaining to critical care nursing. It is also recommended that pre-appraised journal articles or best practice guidelines be available in the critical care unit.

Gerrish *et al* (2007:334) mentions that certain strategies can be implemented to ensure that the latest best research evidence is accessed, namely: accessing the library, and searching online evidence-based sources. It is recommended that relevant research reports pertaining to the care of the critically ill patient are available in nursing units.

5.3.4.4 Section E: Barriers to implementing evidence-based practice based on the relevant resources

Findings:

- 34% of the participants agreed whilst 23% strongly agreed that they lacked the authority in the critical care unit to change to evidence-based practice
- 34% of the participants agreed whilst 14% strongly agreed that the severity of the critically ill patient influenced implementation of evidence-based practices
- 31% of the participants agreed whilst 21% strongly agreed that they had

insufficient time to implement evidence-based practices in the critical care unit

Recommendations:

In a survey by Gerrish *et al* (2008:66) participants indicated that lack of support by colleagues, managers and physicians are contributing factors to their view that they do not have the authority to change to evidence-based practice. Barker (2010:117) mentions an organization should provide positive reinforcement and support for staff who implement evidence-based practices. Ploeg *et al* (2007:214) conducted a survey whereby participants indicated the highest-ranked facilitator for evidence-based practice was support from all levels of management and stakeholders. It is therefore recommended that organizations create a culture that embraces and encourages professional nurses to implement evidence-based practices. In an organisational culture that is conducive to evidence-based practice professional nurses will believe that they have the authority to implement practices that are based on evidence.

Aveyard and Sharp (2010:130) state that time management is an integral component therefore professional nurses should carry out tasks that are of priority, unnecessary task should be minimized. In a survey conducted by Ring *et al* (2005:1052) participants indicated that sufficient resources such as staffing will enable implementation of evidence-based practice. Based on the study results, it is recommended that professional nurses, caring for high acuity patients, have relief sessions with the assistance from other staff members in the critical care unit. Organizations must ensure that they have sufficient human resources to cope with implementing new practices. Managers should be made aware that allocation of sufficient time is an enhancer to the implementation of evidence-based practice in the critical care unit.

Schmidt and Brown (2009:9) suggest there are certain strategies which may overcome barriers to evidence-based practice. With regard to insufficient time organizations can allocate 15 minutes per day to professional nurses to search for evidence. A list of online resources that can be consulted will allow easier retrieval of information and established best-practice guidelines can be adopted in nursing

units in order to save time. Barker (2010:117) highlight to ensure sustainability of evidence-based practices sufficient time should be provided to enable the integration of evidence into clinical practice. In a survey done by Breimaier *et al* (2011:1751) 20% of the participants revealed that they need sufficient time to implement evidence-based practices. Recommendations can be made to management nurses should be allocated time to perform searches, read reports and apply evidence-based practices.

5.3.4.5 Section F: Barriers related to facilitation and support structures required for implementation of evidence-based practice

Findings:

- 50% of the participants agreed whilst 47% strongly agreed that in-service training would promote the understanding of, and adherence to, evidence-based practices
- 47% of the participants agreed whilst 44% strongly agreed that an EBP mentor or champion was needed for the implementation of evidence-based practices
- 50% of the participants strongly agreed whilst 46% agreed that best-practice guidelines could promote evidence-based practices

Recommendations:

DiCenso *et al* (2005:192) describes providing educational programmes intended for professional nurses will enhance the translation of evidence into practice. According to the Registered Nurses Association of Ontario (RNAO) accessed on (www.rnao.org) active implementation strategies should incorporate educational programmes. Craig and Smyth (2007:319) concurs that attendance of educational programmes, workshops or conferences on evidence-based practice will promote evidence uptake. It is thus recommended that educational programmes such as in-service training must be done in the critical care unit, which will promote understanding of and adherence to evidence-based practice amongst professional nurses.

According to the Registered Nurses Association of Ontario (RNAO) EBP

champions may be professional nurses who are passionate about the improving quality of patient care. In a survey conducted by Smith and Donze (2010:67) the presence of an evidence-based practice champion was identified as a facilitator to the implementation of evidence-based practices. Ploeg *et al* (2007:214) mentions that the presence of an EBP champion is crucial to lead implementation and supervise implementation of evidence-based practices. Based on the study findings, it is recommended that an EBP mentor or champion within the critical care unit be elected to dedicate time in searching and then disseminating evidence. The role of an EBP mentor or champion might alleviate the workload of individuals who are expected to conduct their own searches. Furthermore, the EBP champion can be used to promote the implementation of evidence-based practices in the critical care unit.

According to Polit and Beck (2012:31) best-practice guidelines is a method of distilling evidence into a manageable form intended for professional nurses. Variances in practice are minimized and the guidelines provide clinical guidance when rendering patient care. It is thus recommended that best-practice guidelines for the care of the critically ill patient are developed or adopted to ensure that nursing practice is based on the best research evidence. Best-practice guidelines based on evidence could reduce variances in the care delivered, and ensure that consistent evidence-based care was delivered.

5.4 STUDY LIMITATIONS

Each research study is unique in its content and methodology with the ultimate purpose of achieving perfection: however, it is inevitable that each study has limitations. The study took place in one critical care unit at a private hospital within the Nelson Mandela Metropole, therefore results cannot be generalized.

5.5 SUMMARY OF THE CHAPTER

The research study has been successful in attaining the research objectives and identifying barriers to the implementation of evidence-based practices in a critical care unit. The findings of this research study are congruent with findings of similar research studies that were explained in Chapter Two. The context of this study

was to determine the barriers to implementation of evidence-based practices in a critical care unit. The studies that were done in Chapter Two were within various nursing units, not only critical care units and it is evident that the barriers are similar regardless of the context of the nursing environment. In Chapter Two various studies were performed in various countries, and it is evident that there are similar barriers in the studies that were conducted within the various countries.

There is a chasm between research and practice which prompts the importance of facilitation to promote evidence translation into critical care units. Findings from the study revealed that some professional nurses in the critical care unit were unfamiliar with the concept known as “evidence-based practices”. Derived from the data analysis there is reliance on intuition, tradition and knowledge from training to support the clinical decision-making process. The results of this study also revealed that professional nurses were accessing unscientific online sources which were an issue that persists in the critical care unit. The organisational culture, such as resistance from management, resistance to change, poor access to computers, and no time allocation to search for evidence are all aspects that are barriers hindering evidence-uptake.

Critically ill patients are compromised due to disease processes; therefore it is imperative that they receive care that is based on the best research evidence to prevent complications, promote healing and facilitate rehabilitation. As advocates for patients it is the responsibility of professional nurses to strive to provide patients with evidence-based care. This implies that care based on the latest, relevant and highest level of evidence will be consulted to guide care rendered and assist in clinical decision-making. Facilitators promoting evidence-based practices must be identified to ensure success and sustainability of evidence-based practices within critical care units.

REFERENCES

1. Aarons, G., Sommerfield, D., Walrath-Greens, C. 2008. Evidence-based practice implementation: the impact of public versus private sector organization type organisational support, provider attitudes and adoption of evidence-based practice. Implementation Science, 4(1), 83-95.
2. Alspach, G. 2006. Nurses use and understanding of evidence-based practice: some preliminary evidence. Critical Care Nurse, 26(1), 11-12.
3. Anon. Nesibopho best practice guideline. 2010. Nesibopho Healthcare (Pty) Ltd.
4. Anon. Best Care Always Best-practice guidelines.
5. Aveyard, H., Sharp, P. 2011. A beginners guide to evidence-based practice. Berkshire: McGraw-Hill Open University Press.
6. Babbie, E. 2001. The practice of social research. 9th edition. Belmont: Wadsworth.
7. Babbie, E. 2010. The practice of social research. 12th edition. Belmont: Wadsworth.
8. Barker, J. 2010. Evidence-based practice for nurses. London: Sage Publications.
9. Basford, L., Slevin, O. 2003. Theory and practice of nursing: an integrated approach to a caring practice. 2nd edition. Cheltenham: Nelson Thornes.
10. Bevan, N., Pelosi-Kelly, J. 2006. Nursing research: building interest and keeping it alive. American Journal of Nursing, 106(10), 72-73.
11. Bhagwanjee, S. Scribante, J. 2008. National audit of critical care resources: how long before we act? South African Journal of Critical Care, 24(1), 4-6.

References

12. Blessing, L.M., Chakrabarti, A. 2009. DRM: a design research methodology. London: Springer-Verlag.
13. Booth, A., Brice, A. 2004. Evidence-based practice for information professionals: a handbook. London: Facet Publishing.
14. Boswell, C., Cannon, S. 2007. Introduction to nursing research: incorporating evidence – based practice. Sudbury: Jones and Bartlett Publishers Ltd.
15. Breimaier, H., Halfens, R., Lohrmann, C. 2011 Nurses wishes, knowledge, attitudes, and perceived barriers on implementing research findings into practice amongst graduate nurses in Austria. Journal of Clinical Nursing, 20(1), 1744-1756.
16. Brink,H. 2006. Fundamentals of research methodology for healthcare professionals. 2nd edition. Cape Town: Juta and Company.
17. Brown, C., Wickline, M., Ecoff, L., Glaser,D. 2009. Nursing practice, knowledge attitudes and perceived barriers at an academic hospital. Journal of Advanced Nursing, 65(2), 371-381.
18. Bruce, N., Pope, D., Stanistreet, D. 2008. Quantitative methods for health research: A practical interactive guide to epidemiological and statistics. West Sussex: John Wiley and Sons Ltd.
19. Burns, N., Grove, S. 2009. The practice of nursing research: Appraisal, Synthesis and Generation of Evidence. 6th edition. Missouri: Saunders Elsevier.
20. Cahill, N., Suurdt, R., Oulette-Kuntz, H., Heyland, D. 2010. Understanding adherence to guidelines in the intensive care unit: development of a comprehensive framework. Journal of Parental and Enteral Nutrition, 34(6), 616-624.
21. Caldwell, K., Coleman, K., Copp, G., Bell, L., Ghazi, F. 2007. Preparing for

References

- professional practice: how well does professional training equip health and social care practitioners? Nurse Education Today, 27(1), 518-528.
22. Chester, L.R. 2007. Many critical nurses are unaware of evidence-based practice. American Journal of Critical Care, 16(2), 106.
23. Clancy, C., Slutsky, J., Patton, L. 2004. Evidence-based healthcare 2004: AHRQ moves research to translation and implementation. Health Services Research, 39(5), 15-24.
24. Coomarasamy, A., Latthe, P., Papaioannou, S., Publicover, M., Gee, H., Khan, K. 2001. Critical appraisal in clinical practice: sometimes irrelevant, occasionally invalid. Journal of the Royal Society of medicine, 94(1), 573-577.
25. Courtney, M., McCutcheon, H. 2010. Using evidence to guide nursing practice. Chatswood: Churchill Livingstone Elsevier.
26. Craig, J., Smyth, R. 2007. The evidence-based practice manual for nurses. 2nd edition. Philadelphia: Churchill Livingstone Elsevier.
27. Creswell, J., Plano Clark, P. 2007. Designing and conducting mixed methods research. London: Sage Publications.
28. De Beer, J., Brysiewicz, P., Bhengu, B. 2011. Intensive care nursing in South Africa. South African Journal of Critical Care, 27(1), 6-10.
29. De Vos, A.S., Strydom, H., Fouché, C.B., Delport, C.S.L. 2005. Research at grassroots: for the social science and human service professions. 3rd edition. Pretoria: Van Schaik Publishers.
30. Dellinger, R., Levy, M., Carlet, J. Bion, J., Parker, M., Jaeschke, R., Reinhart, K., Angus, D., Brun-Buisson, C., Beale, R. Calandra, T. Dhainaut, J-F., GerlaG, H., Harvey, M., Marini, J., Marshall, J., Ranieri, M. Ramsay, G., Sevransky, J., Thompson, B.T., Townsend, S., Vender, J.S., Zimmerman, J.L., Vincent, J-L. 2008. Surviving sepsis campaign: international guidelines for management of severe sepsis and septic shock. Intensive Care Medicine,

References

- 34(1), 17-60.
31. DiCenso, A., Guyatt, D., Ciliskia, D. 2005. Evidence-based nursing: a guide to clinical practice. Honour Society of Nursing. St Louis: Elsevier Mosby.
 32. Dogherty, E., Harrison, M. Graham, I. 2010. Facilitation as a role and process in achieving evidence-based practice in nursing: a focus review of concept and meaning. World Views on Evidence-Based Nursing, 7(2), 76-89.
 33. Dracup, K, Bryan-Brown, C. 2006. Evidence-based practice is wonderful ... sort of. American Journal of Critical Care, 15(4), 356-358.
 34. Estabrooks, C., Scott, S., Squires, J., Stevens, B., O'Brien-Pallas, L., Watt-Watson, J., Profetto-McGrath, J. McGilton, K., Golden-Biddle, K., Lander, J., Donner, G., Boschma, G., Humphrey, C., Williams, J. 2008. Patterns of research utilisation. Implementation Science, 3(1), 31-46.
 35. Flynn, A., Sinclair, M. 2005. Exploring the relationship between nursing protocols and nursing practice in an Irish intensive care unit. International Journal of Nursing Practice, 11(1), 142-149.
 36. Garrard, J. 2011. Health sciences literature review made easy: the matrix method. 3rd edition. Sudbury: Jones and Bartlett Learning..
 37. Gerrish, K., Ashworth, P., Lacey, A., Bailey, J., Cooke, J., Kendall, S., McNeilly, E. 2007. Factors influencing the development of evidence-based practice: a research tool. Journal of Advanced Nursing, 57(3), 328-338.
 38. Gerrish, K., Ashworth, P., Lacey, A., Bailey, J. 2008. Developing evidence-based practice: experiences of senior and junior clinical nurses. Journal of Advanced nursing, 62(1), 62-73.
 39. Gerrish, K., Lacey, A. 2010. The research process in nursing. 6th edition. Oxford: Wiley Blackwell.

References

40. Glasgow, R., Emmons, K. 2007. How can we increase translation of research into practice? Types of evidence needed. Annual review of public health, 28(1), 413-437.
41. Grol, R., Grimshaw, J. 2003 .From best evidence to best-practice: effective implementation of change in patients care. The Lancet, 362(1), 1225-1230.
42. Hall, A., Walton, G. 2004. Information overload within the health care system: a literature review. Health information and Libraries Journal, 21(1), 102-108.
43. Harvey, G., Loftus-Hills, A., Rycroft-Malone, J., Tichen, A. Kitson, A., McCormack, B., Seers, K. 2002. Getting evidence into practice: the role and function of facilitation. Journal of Advanced Nursing, 37(6),577-588.
44. Hek, G., Judd, M., Moule, P. 2003. Making sense of research: An introduction for health and social care practitioners. 2nd edition. London: Sage Publications.
45. Helfrich, C., Blevins, D., Smith, J., Adam Kelly, P., Hogan, T., Hagedorn, H., Dubbert,P., Sales, A. 2011. Predicting implementation from organisational readiness for change: a study protocol. Implementation Science, 6(1), 76-78.
46. Hoffman, T., Bennet, S., Del Mar, C. 2010. Evidence-based practice across health professions. Chatsworth: Churchill Livingstone Elsevier.
47. Holloway, I., Wheeler, S. 2010. Qualitative research in nursing and healthcare. 3rd edition. West Sussex: Wiley Blackwell.
48. Jacoby, D., Youngson, R. 2005. Encyclopaedia of family health. New York: Marshall Cavendish Corporation.
49. Jo Brown, S. 2009. Evidence-based nursing: the research practice connection. Sudbury: Jones and Bartlett publishers.
50. Johnson, B., Christensen, L. 2008. Educational research: quantitative, qualitative and mixed approaches. 3rd edition. London: Sage Publications.

References

51. Jordan, P., van Rooyen, D., Venter, D. 2012. Endotracheal tube cuff pressure management in an adult critical care unit. South African Journal of Critical Care, 28(1)13-16.
52. Kajermo, K., Bostrom, A., Thompson, D., Hutchinson, A., Estabrooks C., Wallin, L. 2010. The Barriers scale-the barriers to research utilisation scale: A systematic review. Implementation Science, 5(32), 1-20.
53. Kalassian, K. Dremsizov, T., Angus, D. 2002. Translating research evidence into clinical practice: new challenges for critical care. Critical Care, 6(1), 11-14.
54. Kent, B., Hutchinson, A., Bioeth, M., Fineout-Overholt, E., Williamson, K., 2009. Strategies for translating knowledge into practice. Worldviews on Evidence-Based Nursing. 6(4), 246-249.
55. Kitson, A., Harvey, G., McCormack, B. 1998. Enabling the implementation of evidence-based practice: a conceptual framework. Quality in Health Care, 7(1), 149-158.
56. Kocaman, G., Seren, S., Lash, A. Kurt, S., Bhengu, N. Yurumezaglu, H.A. 2010. Barriers to research utilisation by staff nurses in a university hospital. Journal of Clinical Nursing, 19(1), 1908-1918.
57. Koehn, M., Lehman, K. 2007. Nurses perceptions of evidence- based nursing practice. Journal of Advanced Nursing, 62(2), 209-215.
58. Lai, N., Teng, C., Lee, M. 2010. The place and barriers of evidence-based practice: knowledge and perceptions of medical nursing and allied health professionals in Malaysia. BMC Research Notes, 3(1), 279-284.
59. Lang, E., Wyer, P., Haynes, R. 2007. Knowledge translation: Closing the evidence to practice gap. Annals of emergency medicine, 49(3), 355-363.
60. Lawless, J., Wan, L, Zeng, I. 2010. Patient care 'rationed' as nurses struggle under heavy workloads. Nursing New Zealand, 16(7), 16-18.

References

61. Leedy, P., Ormrod, J. 2005. Practical research planning and design. 8th edition. New Jersey: Pearson Education International.
62. LoBiondo-Wood, G., Haber, J. 2010. Nursing research methods and critical appraisal, for evidence-based practice. Ask, gather assess and appraise. 7th edition. St Louis: Mosby Elsevier.
63. Majid, S., Foo, S., Luyt, B., Zhang, X., Theng, Y., Chang, Y., Moktar, I. 2011. Adopting evidence-based practice in clinical decision making: nurses perceptions, knowledge and barriers. Journal of Medical Library Association, 99(3), 229-236.
64. Mallik, M., Hall, C., Howard, D. 2009. Nursing knowledge and practice foundations for decision-making. 3rd edition. London: Balliere Tindale Elsevier.
65. Melnyk B.M., Fineout-Overholt, E. 2010. Evidence-based practice in nursing and healthcare: a guide to best-practice. 2nd edition. Philadelphia: Lippincott, Williams and Wilkins.
66. Melnyk, B.M., Fineout-Overholt, E., Fischbeck Feinstein, N., Hong L., Small, L., Wilcox, L., Kraus, R. 2004. Nurses perceived knowledge, beliefs, skills and needs regarding evidence-based practice: implications for accelerating the paradigm shift. Worldviews on Evidence-Based Nursing, 1(3), 185-193.
67. McInerney, P., Suleman, F. 2009. Exploring knowledge, attitudes, and barriers towards the use of evidence-based practice amongst Academic healthcare practitioners in their teaching in a South African University. Worldviews on Evidence-Based Nursing, 7(2), 90-97.
68. Mohide,E., King, B. 2003. Building a foundation for evidence-based practice: experiences in a tertiary hospital. Evidence Based Nursing, 6(4), 100-103.
69. Moore, N. 2006.How to do research: A practical guide to designing and managing research projects. 3rd Revised edition. London: Facet Publishing.

References

70. Moreno-Casbas, T., Funtelsaz-Gallego, C., Gil de Miguel, A., González-María, E., Clarke, S.P. 2011. Spanish nurses' attitudes towards research and perceived barriers and facilitators of research utilisation: A comparative survey of nurses with and without experience as principal investigators. Journal of Clinical Nursing, 20(13), 1936-1947.
71. Morton, P.G., Fontaine, D.K. 2009. Critical care nursing: A holistic approach. 9th edition. Philadelphia: Lippincott, Williams and Wilkins.
72. Moule, P., Goodman, M. 2009. Nursing research: an introduction. London: Sage Publication.
73. Myatt, G. 2007. Making sense of data. A practical guide to exploratory data analysis and data mining. New Jersey: John Wiley and Sons.
74. Neuman, W.L. 2006. Social research methods qualitative and quantitative approaches. 6th edition. Boston: Pearson Education, Incorp.
75. Oerman, M. Hays, J. 2010. Writing for publications in nursing. 2nd edition. New York: Springer Verlag Publishing Company.
76. Offready, M., Vickers, P. 2010. Developing a healthcare research proposal: an interactive student guide. West Sussex: Wiley Blackwell.
77. Oranta, O., Routasalo, P., Hupli, M. 2002. Barriers to and facilitators of research utilisation among Finnish professional nurses. Journal of Clinical Nursing, 11(1), 205-213.
78. Parahoo, K. 2006. Nursing research principles, process and issues. 2nd edition New York: Palgrave MacMillan.
79. Pearson, A., Field, J., Jordan, Z. 2007. Evidence-Based clinical and health practice in nursing care: assimilating research experience and expertise. Oxford: Blackwell Publishing.

References

80. Pearson, A., Jordan, Z. 2010. Evidence-based healthcare in developing countries. International Journal of Evidence-Based Healthcare, 8(1), 97-100.
81. Penz, K., Bassendowski, S. 2006. Evidence-based nursing in clinical practice: implications: implications for nurse educators. The Journal of Continuing Education in Nursing, 37(6), 250-254.
82. Phelps, R., Fischer, K., Ellis, A. 2007. Organizing and managing your research: A practical guide for post graduates. London: Sage Publications.
83. Ploeg, J., Davies, B., Edwards, N., Gifford, W., Elliot-Miller, P. 2007. Factors influencing best-practice guideline implementation :lesson learned from administrators ,nursing staff and project leaders .Worldviews on Evidence-Based Nursing, 4(4), 210-219.
84. Polit, D.F., Beck, T. 2008. Nursing research generating and assessing evidence for nursing practice. 8th edition. Philadelphia: Wolters Kluver/Lippincott Williams and Wilkins.
85. Polit, D., Beck, C. 2012. Nursing research generating and assessing evidence for nursing practice. 9th edition. Philadelphia: Wolters Kluver/Lippincott Williams and Wilkins.
86. Pravikoff, D., Tanner, A., Pierce, S. 2005. Readiness of U.S. nurses for evidence-based practice. American Journal of Nursing, 105(9), 40-51.
87. Rebar, C., Gersch, C., Macnee, C., McCabe, S. 2011. Understanding nursing research using research in evidence-based practice. 3rd edition. Philadelphia: Wolters Kluver Health/Lippincott Williams and Wilkins.
88. Ring, N., Malcolm, C., Coull, A. Murphy-Black, T., Watterson, A. 2005. Nursing best practice statements: an exploration of their implementation in clinical practice. Journal of Clinical Nursing, 14(1), 1048-1058.

References

89. Risjord, M. 2011. Nursing knowledge, science, practice and philosophy. London: Wiley-Blackwell.
90. Robinson, K., Driedger, M., Elliot, J., Eyles, J. 2006. Understanding facilitators of and barriers to health promotion practice. Health Promotion Practice, 7(4), 467-476.
91. Rolfe, G., Segrott, J., Jordan, S. 2008. Tensions and contradictions in nurses perspective of evidence-based practice. Journal of Nursing Management, 16(1), 440-451.
92. Rosenbaum, S., Glenton, C., Cracknell, J. 2008. User experiences of evidence-based online resources for health professionals: user testing of the Cochrane Library. BMC Medical Information and Decision-making, 8(1), 1474-1482.
93. Rosseuaw, D. 2012. The Oxford handbook of evidence-based management. Oxford: Oxford University Press.
94. Ruane, J.M. 2005. Essentials of research methods: a guide to social science research. Oxford: Blackwell Publishing.
95. Sackett, D., Richardson, S., Richardson, S., Rosenberg, W., Haynes, B. 2000. Evidence-based Medicine: How to practice and teach EBM. Edinburgh: Churchill Livingstone.
96. Saks, M., Allsop, J. 2007. Researching health qualitative, quantitative and mixed methods. London: Sage Publications.
97. Salmond, S.W. 2007. Advancing evidence-based practice: a primer. Orthopaedic Nursing, 26(2), 114-123.
98. Salsali, M. Mehrad, N. 2009. Iranian nurses constraint for research utilisation. Biomed Central Nursing, 8(1), 9-17.

References

99. Schmidt, N., Brown, J.M. 2009. Evidence-based practice for nurses: appraisal and application of research. Sudbury: Jones and Bartlett Publishers.
100. Scribante, J., Bhagwanjee, S. 2007. National audit of critical care resources in South Africa – nursing profile. South African Medical Journal, 97(12), 1315-1318.
101. Sherriff, K., Wallis, M., Chaboyer, W. 2007. Nurses attitudes to and perceptions of knowledge and skills regarding evidence-based practice. International Journal of Nursing Practice, 13(1), 363-369.
102. Simpson, F. Doig, G. 2007. The relative effectiveness of practice change interventions in overcoming common barriers to change: a survey of 14 hospitals with experience implementing evidence-based guidelines. Journal of Evaluation in Clinical Practice, 13(5), 709-715.
103. Smith, R.B., Donze, A. 2010. Assessing environmental readiness first steps in developing an evidence-based practice implementation culture. Journal of Perinatal and Neonatal Nursing, 24(1), 61-71.
104. Smith, P., James, T., Lorentzon, M. Pope, R. 2004. Shaping the facts: evidence-based nursing and healthcare. London: Churchill Livingstone.
105. Spear, H. 2006. Evidence-based nursing practice: making progress and making a difference. Worldviews on Evidence-Based Nursing, 3(2), 52-54.
106. Squires, J., Estabrooks, C., Gustavsson, P., Wallin, L. 2011. Individual determinants of research utilisation by nurses: a systematic review updates. Implementation science, 6(1), 1-20.
107. Squires, J., Moralejo, D., Lefort, S. 2007. Exploring the role of organisational policies and procedures in promoting research utilisation in registered nurses. Implementation Science, 2(1), 17-27.

References

108. Stommel, M., Willis, C. 2004. Clinical research concepts and principles for advanced practice nurses. Philadelphia: Lippincott, Williams and Wilkins.
109. Tappen, R. 2011. Advanced nursing research from theory to practice. Ontario: Malloy Inc.
110. Taylor, R., Reeves, B., Ewings, P., Taylor, R. 2004. Critical appraisal skills training for healthcare professionals: a randomized control trial. BMC Medical Education, 4(30), 1-10.
111. The Nursing Act, Act 33 of 2005. Government gazette.2006, Vol.491, No 28883: 37-69.
112. The South African Nursing Council accessed on (www.sanc.co.za) accessed 10 November 2012 @11:45 p.m.
113. The Registered Nurses Association of Ontario (RNAO) accessed on (www.rnao.org) 2 December 2012 @ 22:45.
114. Thiel, L. 2008. Determining registered nurses readiness for evidence-based practices. Worldviews on Evidence-based Nursing, 5(4), 182-192.
115. Thompson, D, O'Leary, K., Jensen, E., Scott-Findlay, S. O'Brien-Pallas, L., Estabrooks, C. 2008. The relationship between busyness and research utilisation: it is about time. Journal of Clinical Nursing, 17(1), 539-548.
116. Trayler, M. 2007. Concise English dictionary new edition. London: Wordsworth Editions Ltd.
117. Ubbink, D., Vermeulen, H. Knops, A.M. Legemate, D, Rengerink, O, Heineman, M., Roos, Y. Fijnvandraat, C. Heymans, H. Simons, R., Levi, M. 2011. Implementation of evidence-based practice: outside the box, throughout the hospital, The Netherlands Journal of Medicine, 69(2), 87-93.

References

118. Upton, D., Upton, P. 2005. Development of an evidence-based practice questionnaire for nurses. Journal of Advanced Nursing, 54(4), 454-458.
119. Urden, L., Stacy, K., Lough, M. 2008. Priorities in critical care nursing. 5th edition. Missouri: Mosby Elsevier.
120. Van Achterberg, T., Schoonhoven, L., Grol, R. 2008. Nursing implementation science: how evidence-based nursing requires evidence-based implementation. Journal of Nursing Scholarship, 40(4) 302-310.
121. Wall, S. 2008. A critique of evidence-based practice in Nursing: challenging the assumptions. Social Theory and Health, 6(1), 37-53.
122. Walsh, M. 2001. Research made real. Cheltenham: Nelson Thomas Ltd.
123. Walsh, N. 2010. Dissemination of evidence into practice: opportunities and threats. Primary Health Care, 20(3), 26-30.
124. Wood, M, Ross-Kerr, J. 2011. Basic steps in planning nursing research from question to proposal. 7th edition. Sudbury: Jones and Bartlett Publishers.

ANNEXURE A: QUESTIONNAIRE

QUESTIONNAIRE: BARRIERS TO IMPLEMENTATION OF EVIDENCE-BASED PRACTICES IN A CRITICAL CARE UNIT.

INSTRUCTIONS:

Please mark your response with an X where indicated.

For example:

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1. Participating in an exercise regime has a role in promoting health.	1	2	3	4	5

A reference number will be allocated to the questionnaire; therefore your name will not appear on the questionnaire and its contents will remain confidential.

Please answer all questions as honestly as possible.

Thank you for your time and co-operation!

With appreciation,

Candice Bowers

Annexures

Reference Number	
------------------	--

SECTION A: DEMOGRAPHIC DATA

Please allocate one response for each item.

1. Indicate your gender.

Male		Female	
------	--	--------	--

2. Indicate your age in years.

<25 years	
25 – 29 years	
30 – 39 years	
40 – 49 years	
>50 years	

3. Indicate the years you have been working in a critical care unit.

< 1 year	
1 – 4 years	
5 – 9 years	
10 – 14 years	
>15 years	

4. As a professional nurse what position do you hold in a critical care unit?

Permanently employed professional nurse on shift	
Agency worker	
Shift leader	
Clinical facilitator	
Unit manager	

5. As a professional nurse do you hold an additional qualification with SANC?

Yes	
No	

6. If yes to question 5, please specify.....

Annexures

SECTION B: IMPLEMENTATION OF EVIDENCE-BASED PRACTICES

For each item cross the box of the response that best represents your view.

7. Indicate how familiar you are with evidence-based practice (One answer please).

Completely familiar	
To a great extent familiar	
To a moderate extent familiar	
To a little extent familiar	
Not at all familiar	

8. Indicate your understanding of the concept known as evidence-based practice (One answer please).

Evidence-based practice consists of theoretical and practical skills you have been taught during your training as a professional nurse	
Any nursing or medical journal article is evidence-based	
The conscientious, explicit and judicious use of the current best evidence in making decisions about the care of patients	
Practices that you have been taught in the critical care unit	

9. How **often** do you consult information that is based on research or evidence to support your nursing practice and clinical decision-making? (One answer please).

Weekly	
1 – 3 times a month	
1 – 3 times a year	
Occasionally	
Never	

Annexures

10. How often do you **access** the available best-practice guidelines in your critical care unit? (One answer please).

Weekly	
1 – 3 times a month	
1 – 3 times a year	
Occasionally	
Never	

11. When you need information to guide your clinical decision-making, where do you **usually** find it? (One answer please)

I read journal articles	
I read text books	
I search the internet	
I ask my colleagues and peers	

12. On what do you **typically** base your clinical decision-making in caring for the critically ill patient? (One answer please)

Ritualistic practices	
On what I have been taught in the unit	
On the latest available evidence	
I ask my colleagues and peers	

13. Which online evidence-based source do you use? (Please give an answer for each source)	Never	Seldom	Frequently
13.1 EBSCO host			
13.2 Medline			
13.3 Pubmed			
13.4 The Cochrane Collaboration			
13.5 National Guideline Clearinghouse			
13.6 Registered Nurses Association of Ontario (RNAO)			
13.7 Johanna Briggs Institute (JBI)			

Annexures

13. Which online evidence-based source do you use? (Please give an answer for each source)	Never	Seldom	Frequently
13.8 World-Views on Evidence-based Nursing			
13.9 The International Journal of Evidence-based Healthcare			
13.10 Google Scholar			
13.11 Google			
13.12 Wikipedia			
13.13 <u>Other</u> : please specify			

14. You have been allocated to care for a critically ill patient. The patient has been mechanically ventilated for a period of 3 weeks. The physician has just assessed the patient on morning rounds and has given the order to commence weaning from the ventilator. **Which source** will you consult to initiate the weaning process? (One answer please).

You will ask a colleague who has been within the unit for a period of time how to go about the weaning process	
You will consult a critical care textbook	
You will consult the latest best-practice guideline on weaning a patient from the mechanical ventilator	
You will follow the weaning process that you have been taught in the unit	

15. A novice nurse in your critical care unit enquires about prevention of ventilator associated pneumonia (VAP). She states she has frequently heard about the importance of preventing VAP. She enquires which source she should access to learn more about the topic. You **refer** her to one of the following (One answer please).

You refer her to the Standard Operating Procedure (SOP) on the prevention of VAP.	
You give her the latest critical care textbook to read on the topic.	
You tell her to "Google" the term "Ventilator Associated Pneumonia"	
You give her the latest best-practice guideline on prevention of VAP that is within the critical care unit.	

Annexures

SECTION C: BARRIERS RELATED TO KNOWLEDGE OF THE NURSE WITH REGARD TO EVIDENCE-BASED PRACTICE

Please indicate to what extent you agree with each statement. Please give one response for each statement.

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
16. Changing to practice based on evidence means long-term commitment and I do not have time	1	2	3	4	5
17. I base clinical decisions pertaining to the care of the critically ill patient on the information that I have gained from my training	1	2	3	4	5
18. My intuition about what seems to be “right” for my patient guides my decision-making	1	2	3	4	5
19. I see little benefit for self or patient care in implementing evidence-based practice in the critical care unit	1	2	3	4	5
20. The nurse in the critical care unit should not conduct their own literature reviews to answer clinical questions	1	2	3	4	5
21. I do not critically reflect on new treatments and medications prescribed in the care of the critically ill patient	1	2	3	4	5
22. I view evidence-based practices as a waste of time	1	2	3	4	5
23. The rewards for using research results in the clinical decision-making of critically ill patients are minimal	1	2	3	4	5
24. The professional nurses in the critical care unit are resistant to change and trying new ideas	1	2	3	4	5
25. Traditional / Ritual practices outweigh evidence-based practices	1	2	3	4	5
26. Evidence-based practices do not improve the	1	2	3	4	5

Annexures

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
quality of patient care					
27. The application of evidence-based practices is not necessary for daily practice within the nursing profession	1	2	3	4	5
28. The workload of nurses is too heavy to keep up with evidence-based practices	1	2	3	4	5
29. There is lack of efficient translation of evidence into clinical practice	1	2	3	4	5

SECTION D: BARRIERS TO FINDING AND REVIEWING EVIDENCE

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
30. I do not know where to find appropriate research findings and other relevant pieces of evidence to guide clinical decision making	1	2	3	4	5
31. There is insufficient time in the critical care unit to find and read research reports	1	2	3	4	5
32. I find it difficult to understand research reports	1	2	3	4	5
33. I do not feel confident about appraising the quality of research reports or other pieces of evidence	1	2	3	4	5
34. I find it difficult to identify the implications of research findings for clinical practice	1	2	3	4	5
35. Access to research evidence is poor (slow or no computers available)	1	2	3	4	5
36. Research reports are not readily available in the critical care unit	1	2	3	4	5
37. The amount of literature related to critical care is	1	2	3	4	5

Annexures

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
overwhelming					
38. Research reports related to issues in the critical care are not published fast enough	1	2	3	4	5
39. Best-practice guidelines are difficult to interpret	1	2	3	4	5

SECTION E: BARRIERS TO IMPLEMENTING EVIDENCE-BASED PRACTICE BASED ON THE RELEVANT RESOURCES

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
40. I do not feel confident about changing practice based on research findings or evidence	1	2	3	4	5
41. I lack the authority in the critical care unit to change practice	1	2	3	4	5
42. The severity of the critically ill patient influences the implementation of evidence based practices	1	2	3	4	5
43. There are insufficient resources to change practice in the critical care unit	1	2	3	4	5
44. There is insufficient time to implement changes in practice in the critical care unit	1	2	3	4	5

Annexures

SECTION F: BARRIERS RELATED TO FACILITATION AND SUPPORT STRUCTURES REQUIRED FOR EVIDENCE-BASED PRACTICE IMPLEMENTATION

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
45. Nursing colleagues are supportive of implementation of evidence-based practices in the critical care unit	1	2	3	4	5
46. Nurse Managers are supportive of initiatives to change practice	1	2	3	4	5
47. Physicians are supportive of implementing evidence-based practices in the critical care unit	1	2	3	4	5
48. Professional nurses are open and receptive to the use of best-practice guidelines in the care of the critically ill patient	1	2	3	4	5
49. The organization will be able to support initiatives related to best-practice guideline development and implementation	1	2	3	4	5
50. The institutional management is open and willing to participate in translation of evidence into clinical practice	1	2	3	4	5
51. In-service training on the concept of evidence-based practice will promote your understanding of, and adherence to, evidence-based practices	1	2	3	4	5
52. The presence of an EBP mentor or champion is needed in the unit as the person will dedicate time to search for the latest evidence-based practices and disseminate information to the rest of the staff	1	2	3	4	5
53. Best-practice guidelines (BPG) based on evidence, can promote evidence-based practices	1	2	3	4	5

Thank you for taking the time to complete this questionnaire.

ANNEXURE B: PARTICIPANT LETTER



Dear Participant

You are being asked to participate in a research study. I will provide you with the necessary information to assist you to understand the study and explain what would be expected of you (participant). These guidelines would include the risks, benefits, and your rights as a study subject. Please feel free to ask the researcher to clarify anything that is not clear to you.

To participate, it will be required of you to provide a written consent that will include your signature, date and initials to verify that you understand and agree to the conditions.

You have the right to query concerns regarding the study at any time. Immediately report any new problems during the study, to the researcher. Telephone numbers of the researcher are provided. Please feel free to call these numbers.

Furthermore, it is important that you are aware of the fact that the ethical integrity of the study has been approved by the various departmental and faculty structures.

Participation in research is completely voluntary. You are not obliged to take part in any research. If you do partake, you have the right to withdraw at any given time, during the study without penalty or loss of benefits. However, if you do withdraw from the study, you should return for a final discussion in order to terminate the research in an orderly manner.

Although your identity will at all times remain confidential, the results of the research study may be presented at scientific conferences or in specialist publications.

This informed consent statement has been prepared in compliance with current statutory guidelines.

Yours sincerely

Candice Andrea Bowers

RESEARCHER

ANNEXURE C: INFORMED CONSENT LETTER

**NELSON MANDELA METROPOLITAN UNIVERSITY**

INFORMATION AND INFORMED CONSENT FORM

RESEARCHER'S DETAILS	
Title of the research project	Barriers to implementation of evidence-based practices in the critical care unit.
Reference number	
Principal investigator	Candice Andrea Bowers
Address	43 Mowbray street, Newton Park ,Port Elizabeth
Postal Code	6045
Contact telephone number (private numbers not advisable)	041 3651445

A. DECLARATION BY OR ON BEHALF OF PARTICIPANT		INITIAL
I, the participant and the undersigned		
ID number		
OR		
I, in my capacity as	(parent or guardian)	
of the participant	(full names)	
ID number		
Address (of participant)		

A.1 HEREBY CONFIRM AS FOLLOWS:		Initial
I, the participant, was invited to participate in the above-mentioned research project		
that is being undertaken by	Candice Bowers	
from		
of the Nelson Mandela Metropolitan University.		

Annexures

THE FOLLOWING ASPECTS HAVE BEEN EXPLAINED TO ME, THE PARTICIPANT:				Initial	
2.1	Aim:	The investigators are studying barriers to implementation of evidence-based practices The information will be used to/for			
2.2	Procedures:	I understand that			
2.3	Risks:				
2.4	Possible benefits:	As a result of my participation in this study translation of evidence into practice will be enhanced.			
2.5	Confidentiality:	My identity will not be revealed in any discussion, description or scientific publications by the investigators.			
2.6	Access to findings:	Any new information or benefit that develops during the course of the study will be shared as follows:			
2.6	Voluntary participation / refusal / discontinuation:	My participation is voluntary	YES	NO	
		My decision whether or not to participate will in no way affect my present or future care / employment / lifestyle	TRUE	FALSE	

3. THE INFORMATION ABOVE WAS EXPLAINED TO ME/THE PARTICIPANT BY:								Initial
Candice Bowers								
in	Afrikaans		English		Xhosa		Other	
and I am in command of this language, or it was satisfactorily translated to me by								
(name of translator)								
I was given the opportunity to ask questions and all these questions were answered satisfactorily.								

4.	No pressure was exerted on me to consent to participation and I understand that I may withdraw at any stage without penalisation.	
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5.	Participation in this study will not result in any additional cost to myself.	
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Annexures

A.2 I HEREBY VOLUNTARILY CONSENT TO PARTICIPATE IN THE ABOVE-MENTIONED PROJECT:		
Signed/confirmed at	on	20
Signature or right thumb print of participant	Signature of witness:	
	Full name of witness:	

B. STATEMENT BY OR ON BEHALF OF INVESTIGATOR(S)									
I,	Candice Bowers	declare that:							
1.	I have explained the information given in this document to	(name of participant)							
	and / or his / her representative	(name of representative)							
2.	He / she was encouraged and given ample time to ask me any questions;								
3.	This conversation was conducted in	Afrikaans		English		Xhosa		Other	
	And no translator was used <u>OR</u> this conversation was translated into								
	(language)		by	(name of translator)					
4.	I have detached Section D and handed it to the participant	YES			NO				
Signed/confirmed at	on	20							
Signature of interviewer	Signature of witness:								
	Full name of witness:								

C. IMPORTANT MESSAGE TO PATIENT/REPRESENTATIVE OF PARTICIPANT	
<p>Dear participant/representative of the participant</p> <p>Thank you for your/the participant's participation in this study. Should, at any time during the study:</p> <ul style="list-style-type: none"> - an emergency arise as a result of the research, or - you require any further information with regard to the study, or - the following occur <div style="border: 1px solid black; height: 40px; width: 100%; margin: 10px 0;"></div> <p>(indicate any circumstances which should be reported to the investigator)</p>	
Kindly contact	Candice Bowers
at telephone number	072 152 1691 or 041 365 1445

ANNEXURE D: HOSPITAL MANAGEMENT PERMISSION LETTER

BARRIERS TO IMPLEMENTATION OF EVIDENCE-BASED PRACTICES

Letter of Permission to Hospital management

My name is Candice Bowers, and I am a Magister Curationis student at the Nelson Mandela Metropolitan University (NMMU). I am conducting research on Barriers to implementation of evidence-based practices under the supervision of Dr. Portia Jordan of the Nelson Mandela Metropolitan University. A copy of their approval is contained with this letter. I invite you to consider taking part in this research. This study will meet the requirements of the Research Ethics Committee (Human) of the NMMU.

AIMS OF THE RESEARCH

The research aims to:

- Explore barriers to implementation of evidence-based practices in a critical care unit
- To make recommendations to enhance translation of evidence-based practices amongst professional nurses in a critical care unit

SIGNIFICANCE OF THE RESEARCH PROJECT

The research is significant in three ways:

1. It will identify barriers to implementation of evidence-based practices in a critical care unit.
2. It will make recommendations on how evidence-based practices can be translated amongst professional nurses in a critical care unit.

BENEFITS OF THE RESEARCH TO HOSPITALS

1. Dissemination of results to professional nurses within the critical care unit, throughout the hospital through in- service training, workshops and a copy to the library Nelson Mandela Metropolitan University if required
2. Results will also be published in the format of an article in a peer- reviewed journal.

RESEARCH PLAN AND METHOD

Data will be collected from participants through a questionnaire. Permission will be sought from professional nurses prior to their participation in the research. Only those who consent will participate. The researcher will deliver the questionnaires to the critical care unit, and be given to shift leaders or the unit manager who will serve as gate keepers. All information collected will be treated in strictest confidence and the hospital nor will participants be identifiable in any reports that are written. Participants may withdraw from the study at any time without penalty. The role of the hospital is voluntary and hospital management may decide to withdraw the hospitals participation at any time without penalty.

Hospital Involvement

Once I have received your consent to approach professional nurses to participate in the study, I will

- arrange for informed consent to be obtained from participants
- arrange a time with your hospital for data-collection to take place
- obtain informed consent from participants

Invitation to Participate

If you would like your hospital to participate in this research, please complete and return the attached form. Thank you for taking the time to read this information.

Candice Bowers
Researcher
NMMU

Dr. Portia Jordan
Supervisor
NMMU

ANNEXURE E: UNIT MANAGER REQUEST FOR PERMISSION TO CONDUCT RESEARCH

Unit Manager
Greenacres Hospital
Port Elizabeth
6001



REQUEST FOR PERMISSION TO CONDUCT RESEARCH IN CRITICAL CARE UNIT

Dear Madam/Sir

My name is Candice Andrea Bowers, and I am a Magister Curationis student at the Nelson Mandela Metropolitan University in Port Elizabeth. The research I wish to conduct for my Master's treatise involves Barriers to implementation of evidence-based practices in the critical care unit. This project will be conducted under the supervision of Dr. Portia Jordan (NMMU, South Africa).

I am hereby seeking your consent to access professional nurses to participate in my research study. A structure questionnaire will be used as a data-collection instrument.

Ethical principles will be maintained throughout the study. Furthermore, the study will be not be conducted unless approval has been granted by the various departmental and faculty structures. Upon completion of the study, I undertake to provide the institution with a bound copy of the research report if required. If you require any further information, please do not hesitate to contact me on 072 152 1691 or 041 365 1445 or candicebowers1@gmail.com.

Thank you for your time and consideration in this matter.

Yours sincerely,

Candice Andrea Bowers

Nelson Mandela Metropolitan University

ANNEXURE F: PERMISSION TO UNDERTAKE A RESEARCH STUDY IN THE CRITICAL CARE UNIT

Dear Ms. Bowers

Re: Permission to undertake a research project in the critical care unit

Title: "Barriers to implementation of evidence-based practices in the critical care unit"

I refer to your application to conduct a research study with the title as stated above. Permission is herewith granted provided that you as the researcher adhere to the following principles:

- Adherence to all ethical principles as it pertains to your study
- A copy of your final document must be provided to the hospital

We retain the right to withdraw this permission at any time, should you fail to adhere to the rules and regulations of the hospital regarding research studies.

Signed: 

Greenacres Hospital

