THE QUALITY OF PROFESSIONAL PRACTICE BY REGISTERED NURSES AND MIDWIVES IN CENTRAL HOSPITALS IN MALAWI

by

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D E C L A R A T I O N

I declare that **THE QUALITY OF PROFESSIONAL PRACTICE BY REGISTERED NURSES AND MIDWIVES IN CENTRAL HOSPITALS IN MALAWI** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any other institution.

_____

SIGNATURE
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30th July 2011

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ABSTRACT

The purpose of this study was to evaluate the quality of professional practice by the registered nurses midwives as reflected in clinical nursing care records for post-laparotomy patients in public central hospitals in Malawi. The set process standards by Nurses and Midwives Council of Malawi (NMCM) were addressed in relation to clinical care of post-laparotomy patients. The hypothesis for this study was that the quality of professional practice by the registered nurse midwives as reflected in clinical nursing care of post-laparotomy patients in public central hospitals in Malawi is inadequate and non-compliant with the process standards set by the NMCM.

The researcher used quantitative, evaluative, descriptive, contextual survey and participatory observations to collect data. A three-point rating scale consisting of compliance (C) = 1, partial compliance (PC) = 0.5 and non-compliance (NC) = 0.0 was used to evaluate the state registered nurse midwives' compliance with process standards. The results showed partial compliance with the set NMCM process standards by the state registered nurse midwives in public central hospitals in Malawi.

KEY CONCEPTS

Quality nursing care; process standards; nursing process; professional practice.

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Dedication

This work is dedicated to my late father, Mr Wilson Damson Kachala, and my late mother, Mrs Elizabeth Kachala, who had so much pride in their children's academic success.

To my dad and mum "I wished you had lived a little longer, to see me go through this study".

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List of abbreviations

ANOVA	Analysis of Variance
CHAM	Christian Hospital Association of Malawi
NHP	National Health Plan
MLG	Ministry of Local Government
MoHP	Ministry of Health and Population
NMCM	Nurses and Midwives Council of Malawi
SRNM	State Registered Nurse Midwife

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CHAPTER 1

OVERVIEW OF THE STUDY

1.1 INTRODUCTION

Every state registered nurse midwife, when entering the nursing profession, assumes the responsibility of public trust and its corresponding obligation to adhere to the set standards of nursing practice. Nursing is an art and science by which people are assisted in learning to care for themselves whenever possible, and are cared for by others when they are unable to meet their own needs (White 2001:51). By using scientific knowledge in a human manner, nursing combines critical thinking skills with caring behaviour. The State Registered Nurse Midwife (SRNM) is responsible and accountable for the quality of nursing care given to clients. It is therefore expected of the SRNM to comply with the standards in the clinical nursing practice settings in public central hospitals in Malawi. The standards set by the Nurses and Midwives Council of Malawi (NMCM 2005a) cannot be separated from practice. The NMCM has structure, process, and outcome standards set for state registered nurse midwife in Malawi. This study aims at evaluating the quality of professional practice by SRNM in public central hospitals in Malawi against the set process standards of Nurses and Midwives Council of Malawi (NMCM 2005a).

The researcher decided to utilise process standards as they have direct impact on nursing care of patients by the SRNM. According to Marker in Dolamo (2002:5) a standard is a written value that defines a level of practice in the staff or a set of conditions in the patient or system that is determined to be acceptable to some authority. Therefore, a standard is a required or agreed level of quality or achievement as set by NMCM. Process standards describe/define the actions and behaviours of nurse practitioner in providing care and what constitutes that care (Muller 1996 in Dolamo 2002:5). Standards are the backbone of nursing practice and they are the professional's key to excellence in practice. The SRNM must view the care that s/he delivers not as a task but as a process by which to achieve specific outcomes. The practice standards form the foundation of nursing: they include caring, political action, knowledge/competence and professionalism (Kyle in Dolamo 2002:4). Standards provide the means by which a profession clearly describes the focus of its activities and

the responsibilities for which its practitioners are accountable (Kozier, Erb, Berman & Snyder 2004a:9).

Rafferty, Maben, West and Robinson (2005) indicated that the measurement of health care quality has been greatly influenced by Donabedian's model of structure, process, and outcome. Until the 1990's quality improvement efforts focused mainly on structure and process but currently the emphasis has gradually shifted towards the measurement of patient outcomes. The outcomes by which health care can be measured include death, disease, disability, discomfort, length of hospital stay and dissatisfaction.

Searle (2000:28) stipulates that the study of nursing principles should enable the state registered nurse midwife to function throughout the period of professional practice as a knowledgeable, confident, competent, concerned, compassionate and safe caring practitioner. This suggests that maintaining the quality of care relies on the nurses' commitment to standards. Its philosophy is that the consumer's needs should be the focus and that SRNM should be empowered to evaluate and improve quality of patient care.

For the SRNM in Malawi, set process standards outline the expectations for the full professional role which all SRNMs must assume (NMCM 2002). Health care of good quality is characterised by a high degree of professional excellence, efficiency in the use of resources, minimal risk to patients, satisfaction of patients and a favourable impact on health (White 2001:60). Therefore, this study will evaluate the quality of professional practice by the SRNM in compliance with the NMCM (2005a) set process standards in clinical nursing care of post-laparotomy patients in central hospitals in Malawi.

1.2 RESEARCH PROBLEM

This topic was chosen because of ample evidence of problems in nursing practice, evidenced in lawsuits against the SRNM and general consumer complaints. There is a global shortage of nurses and Malawi is one of the countries hardest hit by this shortage (Muula, Mfutso-Bengo, Makoza & Chatipwa 2003:435). The statistics of the Ministry of Health and Population (MoHP) (2003:51) revealed that in 2003 there were only 502 SRNMs working in government hospitals. Through the experience the researcher has

had while working at a public central hospital, it is noticeable that state registered nurse midwives are leaving the Republic of Malawi health services for posts in first-world countries. This has resulted in staff shortages, understaffed units, overworked state registered nurse midwives and in poor nursing care provided to patients. There seem to be a gap between the set process standards by NMCM (2005a) and the actual practice by state registered nurse midwives in rendering care to post-laparotomy patients.

1.2.1 Rationale

Malawi currently has 1869 state registered nurse midwives in total according to the NMCM (2005b). These nurses are paid-up members of the NMCM. Many SRNMs have left the country because government pay is low and cannot compensate for the risks health care workers face, given the congestion in hospitals. According to Muula et al (2003:435) SRNMs workload is beyond comprehension; this is evidenced by nurses always being on their feet helping patients. And this results in poor quality of health care. The many challenges faced by the state registered nurse midwives in rendering care to the patients prompted the researcher to evaluate the quality of professional practice rendered by the state registered nurse midwives in Malawi, as reflected in the care of post-laparotomy patients, judged against NMCM (2005a) set process standards in clinical nursing care. The observation made by the researcher is that the quality of professional practice by the SRNM in clinical nursing care in the public central hospitals in Malawi has declined since the early 1980s to the level at which it could be perceived as inadequate and not complying with the set process standards of the NMCM (2005a). In one central hospital alone, out of 516 patients who had laparotomy, 115 (22.2%) developed sepsis, 41 (7.9) died and 360 (69.76%) were reported to have been neglected by the state registered nurse midwives (MoHP 1999-2004a).

1.2.2 Problem statement

The quality of professional practice by the SRNM in clinical nursing care of post-laparotomy patients in public central hospitals in Malawi appears to be inadequate and non-compliant with NMCM (2005a) set process standards as evidenced by researchers' observations of SRNM in practice during student nurses accompaniment, prolonged patients' length of stay in hospital, report on neglect of patients and wound complications post-operatively.

1.3 AIM OF THE STUDY

The aim of this study is to evaluate and describe the quality of practice offered by SRNM's to post-laporatomy patients in public central hospitals in Malawi against the NMCM (2005a) set process standards.

The objectives of the study are

- to assess the quality of professional practice
- identify the extent of care SRNM provide to patients
- determine whether the performance is up to acceptable level of quality

1.3.1 Research purpose

The purpose of this study is to evaluate the quality of professional practice by the state registered nurse midwives in clinical nursing care of post-laparotomy patients in public central hospitals against the NMCM (2005a) set process standards of care in Malawi.

1.3.2 Hypothesis

The quality of professional practice by state registered nurse midwives in clinical nursing care in public central hospitals in Malawi, as reflected in clinical care of post-laparotomy patients, is inadequate and non-compliant with the NMCM (2005a) set process standards.

1.4 SIGNIFICANCE OF THE STUDY

The significance of this study is as follows:

- The study will benefit the client/patients in public central hospitals in Malawi, who are the consumers of the practice of the SRNM and deserve to receive quality care.
- The results of this study will be useful to the nurse managers in charge of nursing personnel in public central hospitals in Malawi as an aid to monitoring standards of care provided by SRNM, based on the NMCM (2005a) set process standards.

- The study will contribute towards improving the knowledge base of the nursing and midwifery profession.
- The research will make a contribution towards evidence-based practice, thereby enhancing quality care to patients in public central hospitals in Malawi.

1.5 OPERATIONAL DEFINITIONS

- *Compliance* is an act of complying by the SRNM with the set NMCM (2005a) process standards. In this study compliance is a measure of quality of professional practice.
- *General wards* are wards/units where there is less specialised care. The adult surgical wards provide care to post-laparotomy patients at public central hospitals in Malawi.
- *Professional practice* is the level of compliance by SRNM with the NMCM (2005a) set process standards.
- *Process standards* are formalised standards by NMCM (2005a).
- *Public hospital* is a hospital that provides services by and through government structures for the benefit of all citizens, irrespective of whether it is a regional (central) or district hospital (Dolamo 2002:11).
- *Quality care* is care which is compliant with NMCM (2005a) set process standards for SRNM. Quality care and quality of professional practice will be used interchangeable in this study.
- *SRNM* is a registered nurse professional educated in the two disciplines of nursing and midwifery who possesses evidence of certification according to the requirements of NMCM and registered with state of Malawi.

1.6 FOUNDATION OF STUDY

The nursing profession in Malawi and the theory of human needs model by Virginia Henderson will form the foundation for this study.

1.6.1 The nursing profession in Malawi

The NMCM is a statutory organisation that was established in terms of the law and is responsible for the professional-ethical regulation of nursing and midwifery in Malawi to

provide a service and to oversee and protect the health of the community. The Malawi community delegated to it the responsibility and statutory powers for the professional regulation of the nursing profession. The Malawi nursing profession is autonomous and self-regulatory. The practice of nursing and midwifery is regulated by the Nursing Act (Act 16 of 1995), which governs the nursing profession to ensure quality of care. The Nursing Act regulates nursing and midwifery education with the aim of producing highly skilled SRNMs for the health needs of the country (NMCM 1995).

1.6.2 Theory of human needs model – Virginia Henderson

The theory of human needs model was chosen as the theoretical basis for this study. An important contribution by Henderson (in George 2002:87) was the following definition of nursing, which is now probably the most universally accepted one: “The unique function of a nurse is to assist the individual, sick or well, in the performance of those activities contributing to health or its recovery (or to peaceful death) that he would perform unaided if he had the necessary strength, will or knowledge and to do this in such a way as to help him gain independence as rapidly as possible.”

Henderson (in George 2002:87) also viewed the nursing process as the application of a logical approach to the solution of a problem; with this approach, each person can receive individualised care.

1.7 RESEARCH DESIGN

A research design is a plan or blueprint of how one intends conducting the research (Babbie & Mouton 2001:74). A quantitative, evaluative, descriptive and contextual survey was used to evaluate the quality of professional practice as reflected in clinical nursing care of patients. There is a need to evaluate the professional practice rendered by the state registered nurse midwives in Malawi public central hospitals, and to check the level of compliance of this practice as reflected in the clinical care of patients with the NMCM (2005a) set process standards.

1.8 RESEARCH METHODOLOGY

This section begins by describing the population and sampling methods, data collection techniques, the instrument and reliability and validity of the instrument. The section ends with an overview of ethical considerations.

1.8.1 Population and sampling

Population and sampling was based on the geographical area, the hospitals, the health units, type of clinical nursing care and the SRNMs. The population and sampling methods were staggered in hospitals, units, SRNMs, post-laparotomy patients and patients' records.

1.8.1.1 Hospitals

Malawi has three types of public hospitals; central, district and community hospitals. There are 51 hospitals in all, see table 3.1.

Sampling method

A non-probability purposive sampling was done in selecting hospitals. All public central hospitals in Malawi were selected.

1.8.1.2 Units

The units at the public central hospitals follow the pattern of providing separate units for male and female patients. Surgical male and female units for post-laparotomy patients at each of the four hospitals were selected.

Sampling

The target population were the records of adult surgical male and female units that provided clinical nursing care to post-laparotomy patients in public central hospitals in Malawi.

1.8.1.3 Patients

To limit the scope of research, only post-laparotomy patients found in the unit were selected.

Sampling

All adult male and female post-laparotomy patients from time of arriving in the unit from theatre to the day three after the operation were selected.

1.8.1.4 State registered nurse midwife

The target population were state registered nurse midwives in public central hospitals in Malawi.

Population

The target population were state registered nurse midwives in surgical units in public central hospitals that provide clinical nursing care to post-laparotomy patients. This was a common condition all nurses knew how to provide care for. Therefore, all SRNMs were to exhibit compliance with the NMCM (2005a) set process standards in the care of post-laparotomy patients.

Sampling

A non-random convenience sampling was used to select all available state registered nurse midwives in charge of surgical units in public central hospitals in Malawi. These SRNMs supervised the care given to post-laparotomy patients.

1.8.1.5 Patients' records

All post-laparotomy patients' records from the day of arriving in the unit from theatre to the day three in the unit were conveniently selected each day of the six days spent in each of the four central hospitals in Malawi.

1.8.2 Context

Malawi is a landlocked country situated in the south-east region of Africa. It has a population of 12 million with an annual growth rate of 1.9% (MoHP 1999-2004a:3). About 80% of the people live in rural areas (Reserve Bank of Malawi 2005). Malawi is one of the least developed countries in the world, with a per capita income of USD 200 (United Nations 2004). Malawi suffers from serious inequalities in the distribution of income, with over 60% of the population living below the absolute poverty line (MoHP 1999-2004b). Literacy is very low, with only 39% of the adult population able to read and write. Malawi's health care delivery is based on the NHP (MoHP 1999-2004b).

Nearly all formal health care services are provided by three main agencies: The MoHP, the Christian Hospital Association of Malawi (CHAM) and the Ministry of Local Government (MLG). The MoHP is the main agency which has the primary responsibility of developing policies, strategies and programmes for health care in Malawi. The objective of the health policy is to raise the health status of the population through the development of preventive, promotive and curative service delivery systems. There is a small private health sector limited to the urban areas, as well as health services provided by private companies, private practitioners, commercial companies, the army and the police. There are fifty one hospitals in Malawi (see table 3.1). Malawi's health indicators are among the worst in the world. The maternal mortality rate is at 984 per 100 000 live births. The infant mortality rate stands at 134 per 1 000 live births (MoHP 1999-2004a).

1.8.3 Data collection method

In this study data collecting methods included:

- Participant observation
- Survey of patients' records and other selected unit records

1.8.3.1 Participant observation

Participant observation was one method that to Stommel and Wills (2004:259), the researcher or observer becomes part of, and active participant in, the social networks

and interaction patterns that are being studied. In this study the researcher and the research assistants wore the prescribed uniform and identification in order to be distinguished by patients and their relatives as belonging to the SRNMs working in the unit. The researcher showed evidence to each public central hospital's director that the study and its procedures were approved by appropriate authorities at University of South Africa. The researcher and the assistants were given introduction and orientation to the respective surgical units of public central hospitals. The researcher and the research assistants operated in the peak hours from 7:15 am to 4:00 pm. They did minimal actual nursing interventions such as handing over, report taking, doctors' rounds and briefings in the units. Each public central hospital was visited for six days.

1.8.3.2 Survey of patients' records and other selected unit records

All post-laparotomy patients' records from the day of arriving in the unit from theatre to the day three in the unit were collected by both the researcher and research assistants. Both the researcher and research assistants analysed the nursing care plan of patients based on the developed instrument. Other unit records like protocols and policies to check on the application of evidence-based practice; the on and off duty records, and delegation books were analysed.

1.8.4 Data analysis

Data analysis, according to Green and Browne (2005:33), refers to the logic of how data will be analysed. In this study data was analysed by using descriptive statistics. A statistician from the University of Malawi was consulted.

1.9 ETHICAL CONSIDERATION

Approval to conduct research was obtained from University of South Africa. Research ethics involves protecting the rights of the respondents, the institutions in which the research is done, and maintaining scientific integrity (Babbie & Mouton 2001:531; Burns & Grove 2005:181-206). The researcher applied certain ethical principles in this study.

The researcher wrote to the hospital directors of the four public central hospitals where interviews were conducted, seeking their approval to proceed with research. The

researcher promised the participants that information given by them would be protected by not publicly reporting or making it available to other parties other than those involved. Anonymity and confidentiality was maintained. The data was stored in a locked cabinet accessible only to the researcher. The questionnaire and consent forms were destroyed upon approval of the completed study by the research supervisor. There were no known risks associated with the study. The researcher treated participants with integrity by being honest with them, especially as regards the importance of the study. All findings would be reported fully, without the omission of significant data, and would include full details regarding explicit theories, methods and research design that would influence the interpretation of the data.

1.10 PILOT STUDY

A pre-test of the instrument is a smaller-scale version or trial run done in preparation for a major study (Burns & Grove 2005:746). The pilot study was done at Kamuzu Central Hospital, a referral hospital for the central region. The pilot study was done to determine whether the proposed study was feasible (Burns & Grove 2001:50). Pre-testing of the questionnaire was done to check if the instrument was collecting the data required. The state registered nurse midwives and the post-laparotomy patients in the pilot study were not included in the main study at this public central hospital.

1.11 RELIABILITY AND VALIDITY

Reliability means that the research instrument will produce the same data time after time on each occasion that it is used, and that any variations in the results obtained through using the instrument are due entirely to variations in the thing being measured (Denscombe 2003:300). It was therefore beneficial to use the instruments that had been tested and were reliable in order to obtain meaningful results (Watson, Mc Kenna, Cowman & Keady 2008:21). Validity is the extent to which an indicator measures what it intends to measure (Green & Browne 2005:167). Content validity of the tool was based on recent literature and expert judgment of SRNMs in key positions in nursing practice. The tool was sent by post to SRNMs in top key positions in nursing practice in Malawi to critically look at each question in order to assess the degree to which the study variables were represented. This exercise assessed the instrument's overall appropriateness for use. These SRNMs in key positions in nursing practice were also

asked to decide whether each question was either relevant or irrelevant. Responses were collected and analysed, then common and conflicting viewpoints were identified. This process was repeated twice then a consensus emerged. According to Burns and Grove (2001:403), the instrument used to collect data must reflect the concepts being examined.

In addition to content validity, construct and face validity were considered in the study. Since the services of research assistants were utilised, it was necessary to determine interrater reliability. Interrater reliability was tested during the pilot study. According to Burns and Grove (2001:397), interrater reliability is used primarily when different observers or ratters are using an instrument to measure the same phenomenon, seeking to determine the consistency of the instrument in yielding measurement of the same traits in the same subjects. Recording of participants' responses was done independently. Face validity focused on the questions and the rating scale, which determined the usefulness of the instrument. Burns and Grove (2005:374) state that a measuring device that is unreliable cannot possibly be valid. The instrument measured the compliance of the quality of professional practice by the SRNMs in clinical nursing care with the NMCM (2005a) set process standards.

1.12 ORGANISATION OF THE REPORT

For ease of reading, this research report is planned using the following chapters:

Chapter 1: Introduction to the study giving brief description of the problem

Chapter 2: The chapter reviews literature that is relevant to the professional practice of state registered nurse midwives

Chapter 3: Describes the research design and methodology used to collect and analyse the data

Chapter 4: Data presentation, analysis and discussion of findings

Chapter 5: Summary, conclusion and recommendations

1.13 CONCLUSION

Chapter one gave the introductory information on the research problem, problem statement, research purpose, research hypothesis, and the significance of study, definition of concepts, and research design and methodology. It further described the process standards, the state registered nurse midwife in Malawi, and ethical consideration the study will follow. The process standards set by the NMCM (2005a) prescribed the attributes that are crucial to the professional role of the SRNM, regardless of the speciality or practice setting. The abovementioned standards were used as a conceptual framework for this study. The specific standards applicable to nursing care investigated in this study related to post-laparotomy patient care.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

The previous chapter gave a description to the research problem, the significance to the research, research hypothesis and definitions of concepts. This chapter reviews literature that is relevant to the professional practice of state registered nurse midwives (SRNMs). A literature study provides a review of what others have done on the topic under study. Burns and Grove (2005:37) explain that reviewing of literature is necessary because it provides insights on how others have investigated similar research problems. It orients the researcher to what has already been done about the topic.

Cooper and Schindler (2003:101) state that the literature review section examines recent research studies, data and reports that act as the basis for the proposed study. In this chapter, the review will include: professional practice, quality nursing care, process standards, theoretical assumptions and conceptual framework.

2.2 PROFESSIONAL PRACTICE

According to Craven, (2009) “nursing” or “the practice of nursing” means the identification and treatment of human responses to actual or potential health problems and includes the practice of and supervision of functions and services that directly or indirectly, in collaboration with a client or providers of health care other than nurses, have as their objectives the promotion of health, prevention of illness, alleviation of suffering, restoration of health, and optimum development of health potential and includes all aspects of the nursing process.”

Lewis, Heikemper, Dirksen, O’Brien and Bucher (2007:2) concur with this statement by noting that nursing practice today is composed of a wide variety of roles and responsibilities necessary to meet the health care needs of society. SRNMs offer skilled care to those recuperating from illness or injury, advocate for patients’ rights, teach patients so that they can make informed decisions, support patients at critical times and

help them navigate the increasingly complex health care system. How the profession and society view nursing determines nursing's scope of practice. The unique focus of nursing is on the response of an individual or group to an actual or potential health problem or life process.

Wherever nurses practise, the recipients of their care include individuals, groups, families or communities. George (2002:21) views professional practice as interpersonal in nature between the nurse/midwife and the patient, implying an equal view of power or control and emphasising caring. In this changing practice world, it is very important for nurses to understand and use appropriate theories in their clinical work. State registered nurse midwives also need to test theories in clinical practice settings to support, clarify or refine theories.

As part of the movement toward identifying nursing as a profession; a scientific or problem-solving approach to nursing practice was identified as the nursing process (George 2002:23). The nursing process deals with problems specific to nurses and their patients/clients. In nursing, the client/patient may be an individual, family or community and the nursing process has been adapted for use with each type of client/patient. In many settings, the nursing process is the tool (methodology) of professional nursing practice. Searle (2000:3) stipulates that the study of nursing principles should enable the SRNMs to function throughout the period of professional practice as a knowledgeable, confident, competent, concerned, compassionate and safe caring practitioner.

Lewis et al (2007:2) state that science and technology today continue to affect the nursing profession. In the past, nurses relied on their experience, observation and intuition. Now nursing has defined a body of knowledge specific to the profession and continues to develop this knowledge through research and practice.

2.2.1 Quality nursing care

According to Hornby (2000:31), quality is basically defined as how good or bad something is. According to this study quality care is care which is compliant with Nursing and Midwives Council of Malawi set process standards for SRNM. Therefore compliance with standard will be the measure of quality of professional practice and

these terms will be used interchangeable. However, there is not a lot of information on quality of professional practice of SRNMs in Malawi. Kleinman and Saccomano (2006:162) point out that there are challenges to quality of nursing care due to increased demand for health services. Among other pressures, there is a growing aged population, which mandates greater numbers of skilled health care personnel to manage their complex care. McCuster, Dendukuri, Cardinal, Laplante and Bambonye (2004:318) note that a state registered nurse midwife is expected to play an autonomous role within the multidisciplinary team and must master critical thinking skills to ensure quality nursing care. Brunner (2008:26) states that regardless of the setting, each patient situation is viewed as unique and dynamic.

The public has the right to expect competent, high quality, ethically based care from the health professionals. As society grows in complexity, health needs escalate and more and more ways of dealing with such needs are developed. Health care workers require a greater level of competence and a deep sense of accountability. The nursing profession is dynamic and ever changing and innovative ways need to be initiated to improve the care.

Quality is considered to be care or service that meets specified requirements and, given current knowledge and resources, fulfils expectations for maximising benefits and minimising risks to health and well-being of patients. Similarly, health care of good quality is characterised by a high degree of professional excellence, efficiency in the use of resources, minimal risk to patients, satisfaction of patients and a favourable impact on health (Oware-Gyekye 2003). These major components of high-quality health care are attainable only if the health professional has ample access to current health information, as information is integral to the formulation of any health strategy. Sullivan and Decker (2005:4) concur with this, noting that quality in health care is a preventive approach designed to address problems before they become crises. Its philosophy is that the consumer's needs should be the focus and that employees should be empowered to evaluate and improve quality.

The specific scope of practice for a professional nurse also borders on the suitability of the nurses based on their level of education. A professional nurse is expected to understand the patho-physiological process of diseases and therefore provides care appropriately and with scientific rationale. The SRNM is also expected to critically

analyse nursing care to determine appropriate interventions for patients (NMCM 2009:11).

Apart from the above, other expectations include formulating relevant policies on patient care, reflecting autonomous decision making in the provision of patient care, adapting strategic plans and standards of care from generic program for the ward in cooperation with multidisciplinary team, providing nursing care and carrying out nursing functions independently, carrying out direct patient care and making decisions, performing nursing management of all other conditions including HIV and AIDS and STIs (sexually transmitted infections) with a critical mind, conducting gynecological procedures such as: Manual Vacuum Aspiration (MVA), and the nurse is expected to provide Post Abortal Care (PAC) while practicing within one's educational preparation (NMCM 2009:11).

The nurse prescribes medications based on the schedules of Nurse Technician and Registered Nurse, participates in research and utilises research findings in providing nursing care, participates actively in Nursing and Midwifery Professional Bodies, keeps patients' information confidential, utilises available human and material resources properly, takes active part in ward conferences, nursing audits, teaching of student nurses and keeps safely dangerous drugs, portrays and encourages positive attitude to the HIV/AIDS infected and affected clients, collaborates with other health care team members (NMCM 2009:11).

The nurse also demonstrates non judgmental manner when providing care to individuals, families and significant others, maintains a conducive environment for patients/clients and personnel in the area where nursing care is provided and promotes the provision of culturally acceptable nursing care.

2.2.2 NMCM process standards

The MoHP started the reform of the health sector in December, 1999, with emphasis on quality assurance, which is being addressed within the NHP (MoHP 1999-2004b). The overall objective is to improve quality care through service delivery, integration, capacity building and training of health care personnel to provide quality care. Malawi's Nurse

Practice Act of 1995 under the NMCM protects the public by legally defining and describing the scope of nursing practice.

The NMCM (2002:4) states that a nurse must continuously be a self-starter and must maintain competency by continued learning. The Nurse Practice Act also legally controls nursing practice through licensing requirements. Kozier, Erb, Berman and Snyder (2004a:49) state that nurses who know and follow their Nurse Practice Act and standards of care provide safe, competent nursing care.

2.3 THEORETICAL ASSUMPTIONS

Virginia Henderson's theory goes hand in hand with the NMCM (2005a) set process standards (refer 1.6 Foundation of study). Both Virginia Henderson's theory and NMCM (2005a) set process standards state that nurses should assist individuals to improve their health in high quality manner. According to George (2002:87), the nursing process is the designated series of actions intended to fulfil the purposes of nursing to maintain the client's wellness or client's quality of life. The following are the NMCM (2005) set process standards:

- The SRNM collects pertinent, accurate and comprehensive client/patient data based on nursing and other related sciences.
- The SRNM develops a plan of care that outlines actual and potential problems and goals of care and prescribes interventions to attain expected outcomes.
- The SRNM safely implements the interventions identified in the plan of care independently, dependently and in collaboration with client/patients, and other health care team members in high quality manner.
- The SRNM evaluates the goals of care.
- The SRNM documents data related to the process of giving care at each step of the nursing process in a manner which facilitates information giving to other health team members.

The components of nursing functions can be categorised in the following manner: the first nine components are physiological, the tenth and fourteenth are psychological aspects of communicating and learning, the eleventh component is spiritual and moral, and the twelfth and thirteenth components are sociologically oriented to occupation and

recreation. Henderson referred to humans as having basic needs that are included in the 14 components. However, she further stated that it is equally important to realise that these needs are satisfied by infinitely varied patterns of living, no two of which are alike (Henderson in George 2002:88). Henderson also believes that mind and body are inseparable and interrelated (George 2002:90). The four components of the nursing paradigm are discussed as follows:

2.3.1 Human/individual

The human/individual has a body, mind and spirit which cannot be separated when rendering care. In this study the individual is both the SRNM and the patient. The model considers the physiological, psychological, sociological and spiritual components in Henderson's concept of the human or the individual (George 2002:90).

2.3.2 Environment/society

The individual is accommodated in an environment. Individuals are in contact and live together in a community. The environment can affect the individual positively or negatively, depending on the levels of interaction. A conducive environment contributes to the well-being of the individual and hence a reduced level of diseases.

The external environment in the study is the surgical units that provide care to post-laparotomy patients in public central hospitals in Malawi, while the internal environment is the bodily, mental and spiritual dimensions of both SRNM and the patient. It is vital that dangers in the environment should be considered and that individuals must avoid injuring others (George 2002:91).

2.3.3 Nursing and midwifery

Nursing and midwifery involves caring for individuals, sick or wells so that they are able to cope either with recovery or peaceful death. They are assisted to do the activities which they are unable to perform due to their illness. The nurse aims at as rapid a recovery as possible, so that the individual may perform independently (George 2002:93).

Henderson believed that research in nursing is essential to the validation and improvement of practice, and viewed the nursing process as the application of a logical approach to the solution of a problem; with this approach, each person can receive individualised care. In this study nursing midwifery includes the clinical dimensions of knowledge, skills/competencies, scientifically-based care, recording, teamwork/net-working health promotion, therapeutic environment and accountability (George 2002:93).

2.3.4 Health

Henderson's definition of health was related to human functioning. Her definition was based on the unwell individual's inability to function independently. Because good health is a challenging goal for individuals, she argued that it is difficult for nurses to help the patient to reach it. She stressed nurses' role in the promotion of health and prevention and cure of disease. She explained how the factors of age, cultural background, physical and intellectual capacities and emotional balance affect one's health (George 2002:94).

2.4 CONCEPTUAL FRAMEWORK

The study follows the process standards set by NMCM (2005a) as the conceptual framework. These standards follow a nursing process pattern or steps as described by Kozier et al (2004a:249), who stress that the nursing process is a systematic, rational method of planning and providing individualised nursing care. The nursing process is a thoughtful, deliberate use of problem-solving approach to nursing. It consists of the following phases: assessing, diagnosing, planning, implementing and evaluating. The dimensions of professional practice are based on the set process standards by NMCM (2005a) which follow a nursing process pattern.

A patient is a unique person in need of comprehensive nursing care from a knowledgeable and skilful nurse practitioner (Searle 2000:17). Therefore, the SRNM collects pertinent, accurate and comprehensive client/patient data based on nursing and other relevant sciences.

2.4.1 Assessment

The SRNM rendering care to patients will use assessment, which is the first step of the nursing process in systematic collection, verification, organisation, interpretation and documentation of data. Assessment is done in order to establish a database concerning a client's physical, psychosocial and emotional health in order to identify health-promoting behaviour as well as actual and/or potential health problems.

Craven and Hirnle (2009:157), state that an assessment is a human response to a health problem that is currently being manifested. It is written as a three-part statement: the diagnostic label, the related factors and defining characteristics. The patients' clues supporting the existence of the problem can be found in the documentation of the assessment data. In the nursing diagnosis statement, they are identified by "as manifested by". A clinical example of accurate diagnostic statement for actual nursing diagnosis is "impaired physical mobility related to pain of incision".

A potential health problem is present when the clinical judgment indicates that a person, family or community is more vulnerable to developing the problem than others in the same or similar situation. Craven and Hirnle (2009:157) state that the diagnosis is supported by risk factors that guide nursing interventions to reduce or prevent the occurrence of the problem. The problems in identifying high-risk nursing diagnoses include lack of knowledge of a patient's risk factor profile and the particular risk involved in the care and treatment of the underlying health problem. An example of a high-risk nursing diagnosis statement is "high risk for aspiration related to reduce level of consciousness".

The primary methods used in the assessment of patients are: observing, interviewing and examining (Kozier et al 2004a:265).

2.4.1.1 Observation

To observe is to gather data through vision, smell, hearing and touch. Observation is a conscious, deliberate skill that is developed through effort and with an organised approach (Kozier et al 2004a:265). Observation begins the moment the SRNM meets the patient. As the patient walks into the room, gets out of the wheel chair or is assisted

into bed, the SRNM is constantly observing via sensory modalities in the following order: clinical signs of patient distress, such as laboured breathing; threats to patient's safety, for example lowered rail; the presence and functioning of associated equipment and the immediate environment, including people in it. The observations are organised so that nothing significant is missed.

2.4.1.2 Interviewing

Interviewing is an essential skill for obtaining information for the nursing history; it consists of questions designed to elicit subjective data from the patient or family members about the patient's past and present health state. The SRNM maintains effective communication by being open and responsive and displays a non judgmental attitude. In eliciting specific information, a directive interview is used. While in a rapport-building interview, the patient is allowed by the SRMN to control the purpose, subject matter and pacing of the communication (Kozier et al 2004:265).

The types of question that will assist the SRNM to conduct an interview with the patient could be closed questions needing "yes" or "no" answers; open ended, inviting the patient to discover and explore, or non-leading questions that will not direct the patient's answer; for example, "How do you feel about surgery tomorrow?" Each interview is influenced by the time, place, seating arrangement, distance and language (Kozier et al 2004:265). The patient feels comfortable when the SRNM plans the interview in a well-lighted and well-ventilated room and when the seating arrangement is made informal, so that the SRNM and patient are at a distance of between 2 to 3 feet apart and using the language the patient can understand (Kozier et al 2004:265).

2.4.1.3 Examination

According to Lewis et al (2007:10), a human being, as a bio-psychosocial spiritual being, has needs and problems in all dimensions: biophysical, psychological, socio-cultural, spiritual and environmental. A nursing diagnosis made without supporting data in all dimensions can lead to incorrect conclusions and depersonalised care. To obtain objective data from a patient, the SRNM conducts the four basic techniques of physical examination: inspection, palpation, percussion and auscultation. With a few exceptions,

these should be performed in that order, because each technique reinforces and refines what was discovered in the previous step.

Inspection utilises the sense of sight, or looking at the patient, to make specific observations of physical features and behaviour (Lewis et al 2007:47). The general inspection of the patient focuses on these areas: overall appearance of health or illness, signs of distress, body size, grooming and personal hygiene, unusual odours, facial expression and mood. Adequate lightening is utilised for good visualisation and only the specific area being examined is exposed. Special instruments utilised to provide intense and more focused light are the otoscope for examining the ears and an ophthalmoscope for inspecting the eyes.

Palpation utilises the tactile sense and is a special form of touching. It usually follows inspection because it defines what was seen and reveals what cannot be seen. During palpation, texture, dimension, temperature and consistency of different areas of the body are detected. Palpation can be described as either light or deep (Lewis et al 2007:47).

The purpose of using light palpation is to check skin temperature and moistness, detect abnormal masses, and locate tender or painful areas. With light palpation the skin is pressed with the fingertips of the dominant hand approximately 0.5 to 1 inch. A gentle, circular motion of the hand over the area is added. Pressure is exerted and released. Deep palpation follows light palpation (Lewis et al 2007:47). The purpose is to locate the organs, determine their size and to detect abnormal masses. Deep palpation involves compression of an area to a depth of 1.5 to 2 inches and requires significantly more pressure than light palpation; one or both hands may be used, depending on the structure to be examined (Lewis et al 2007:47).

Percussion is an assessment technique involving the production of sound to obtain information about the underlying area (Lewis et al 2007:47). The purpose of percussion is to outline the size of the organ, most commonly the heart and liver. Percussion is also used to determine if a structure is air-filled, fluid-filled or solid. This has application in percussion of the lungs, bladder and abdomen.

The degree to which sound propagates is called resonance. The five characteristics produced by percussion are: resonant, hyper resonant, tympanic, dull and flat (Lewis et al 2007:47). Percussion maybe performed directly or indirectly. Direct percussion is accomplished by tapping an area directly with the fingertips of the middle finger or thumb. Indirect percussion interposes a finger, the pleximeter, between the area to be percussed and the finger creating the vibrations, the plexor. A relaxed wrist and rapid strike produce the best sounds. Deviation from the expected sound may indicate a problem; for example, the usual percussion sound in the right lower quadrant of the abdomen is tympany. Dullness occurring in this area may indicate a problem that should be investigated (Lewis et al 2007:47).

Auscultation is listening to sounds produced by the body to assess normal conditions and deviations from normal (Lewis et al 2007:48). Four properties are used to describe sound: frequency, intensity, duration and quality. Frequency is the measure of vibration expressed in cycles per second. Intensity describes the loudness of sound and is measured in decibels. How long the sound lasts is the duration, and quality reflects the musical characteristics of a sound.

The stethoscope is used to aid auscultation (Lewis et al 2007:48). The diaphragm of the stethoscope is applied firmly against the skin and responds best to high frequency sounds and excludes low frequency ones. The bell of the stethoscope allows high frequency sounds to escape and collects low-pitched sounds. The earpieces of the stethoscope should fit snugly, occluding the ear canal and screening out environmental noise.

Through assessment the SRNM ascertains the client's functional abilities and the absence or presence of dysfunction. The SRNM performs a comprehensive type of assessment to a client (Lewis et al 2007:48).

2.4.2 Nursing diagnosis

The NMCM (2005) set process standards step on nursing diagnosis is included under assessment. The researcher decided to separate it for clarity. Analysis includes the intellectual process of sorting and classifying the data collected. The SRNM, in caring for an adult patient, makes a nursing diagnosis based on the collected assessment

data. Validation of data is done with the patient or other significant people and health care providers when possible, and documented on priority. The SRNM, in caring for an adult patient, discusses the nursing diagnosis which has been formulated with the patient/client or, if this is not possible, with family members. An example of a nursing diagnosis could be impaired skin integrity. The list of nursing diagnoses is not static. It is dynamic, changing as more data are collected and as client goals and client responses to interventions are evaluated (White 2001:150). The SRNM will record the list of nursing diagnoses in the patient's record and thereafter the remainder of the client's care plan can be completed (White 2001:150).

2.4.3 Planning

The SRNM develops the plan of care that outlines actual and potential problems and goals of care and prescribes interventions to attain expected outcomes. Planning is the third phase in the nursing process. This begins after the SRNM has developed the nursing diagnosis and the clients' strength has been identified. The SRNM must then determine the urgency of the identified problems. Diagnoses of the highest priority require immediate intervention (Lewis et al 2007:12). Those of lower priority can be addressed at a later time. The SRNM, when setting priorities, first intervenes for life-threatening problems involving the airway, breathing or circulation (ABCs); physical needs should be addressed before psychological needs.

Lewis et al (2007:11), for explaining the actual health problem, recommend the three-part statement which identifies the critical thinking process that occurs when making a judgement about the patient's health status and symptoms. The Problem, Etiology, Signs and symptoms (PES) format is used.

Problem (P): the nursing diagnosis label; the term that reflects the pattern of cues (for example pain); Etiology (E): a brief description of the probable cause of the problem and contributing or related factors (for example related to surgical incision); Signs and symptoms (S): a list of the cluster of the objective and subjective data that lead the nurse to pinpoint the problem; critical, major or minor defining characteristics (for example evidenced by verbalisation of pain).

2.4.3.1 Actual problems

An actual health problem is a client problem that is present at the time of the nursing assessment, with signs and symptoms of the illness present. An example would be “ineffective breathing pattern and anxiety” (Kozier et al 2004a:279).

2.4.3.2 Potential problems

A potential health problem occurs when the clinical judgement indicates that a problem does not exist, but the presence of risk factors indicates that a problem is likely to develop unless SRNMs intervene. An example would be that all people admitted to a hospital have some possibility of acquiring an infection; however, a patient with severe burns is at higher risk than others. Therefore, the SRNM would appropriately use the label “Risk for infection” to describe the client’s health status (Kozier et al 2004a:279).

Planning, according to Craven and Hirnle (2009:167), will be based on nursing priorities on the identified nursing diagnosis and patient needs. The plan is developed with the patient/client, other significant people and health care providers where necessary. The SRNM will incorporate the family members and significant others in the planning process since they may be critical to effective discharge planning of a patient/client.

The SRNM should ensure that the sequence of nursing interventions is individualised, because each patient is different. For example, one patient may be ready to discuss home-care needs after colostomy surgery; another may need a visit from another colostomy patient before this topic can be broached. The ability to alter routine plans is the hallmark of an expert SRNM (Craven & Hirnle 2009:167). Using clinical knowledge and experience, the SRNM will write a goal that she or he believes can be achieved. A goal addresses directly the problem stated in the nursing diagnosis, but should complications in the patient occur to invalidate the goal then revision of the goal should be done (Lewis et al 2007:13). The goal may be short or long term. Short-term could be within 24 hours to one week, while a long-term goal may be ongoing (White 2001:151).

2.4.4 Expected outcomes based on the goals established

An expected outcome is a detailed, specific statement that describes the methods through which the goal will be achieved and includes aspects such as direct nursing care, client teaching and continuity of care (White 2001:151). Outcomes must be measurable, time limited and realistic.

2.4.5 Intervention

The SRNM formulates nursing interventions after goals and expected outcomes have been established to enable the client to reach the goals. According to White (2001:151), a nursing intervention is an action performed by the nurse that helps the client achieve the results specified by the goals and expected outcomes. An example of a nursing intervention would be “weigh client at each visit using a bathroom scale.” After the SRNM formulates interventions for each diagnosis, he records them on the patient’s care plan. Care plans have been described as providing a structured approach to the assessment, planning and delivery of patient care (Oware-Gyekye 2003).

2.4.6 Implementation

The SRNM safely implements the interventions identified in the plan of care independently, dependently and in collaboration with patients’ significant others and other health care team members.

During implementation the SRNM rendering care to an adult patient executes the nursing care plan derived during the planning phase. Nursing activities that have been planned to meet the goals set with the client will be according to the identified needs.

2.4.6.1 Intellectual skills

The intellectual skills needed include problem-solving, decision-making, critical thinking and creativity. To solve problems the SRNM asks the patient pertinent questions (Kozier et al 2004a:316).

2.4.6.2 Interpersonal and technical skills

According to Kozier et al (2004a:316), interpersonal skills are all the activities, verbal and non verbal, that people use when interacting with one another. Interpersonal skills used by the SRNM will include conveying knowledge, attitudes, feelings, interest and appreciation of the client's cultural values and lifestyle. Interpersonal skills are necessary for all the nursing activities including caring, comforting, advocating, referring, counselling and supporting. The effectiveness of the nursing action often depends largely on the nurse's ability to communicate with others. The SRNM uses therapeutic communication in order to understand the client and in return be understood. The SRNM also needs to work effectively with others as a member of the health care team.

Kozier et al (2004a:316) describe technical skills as hands-on skills such as manipulating equipment, giving injections, moving and lifting of patients. These skills require the SRNM to communicate with the client before performing them.

2.4.6.3 Timely and appropriate referral

The SRNM makes timely and appropriate referral to other members of the multi-disciplinary/multi-professional team when the necessary prescribed intervention or treatment is beyond his or her scope of practice (Lewis et al 2007:315). These team members include the medical officers, social workers, physiotherapists, dieticians, and others.

2.4.6.4 The SRNM utilises research findings in practice

Evidence-based practice involves the use of collective research findings in implementing effective interventions to promote patient health (Burns & Grove 2005:3). The SRNM provides evidence-based care that promotes quality outcomes for patients. She utilises nursing research for the development of scientific knowledge that enables him/her to provide evidence-based health care in implementing effective interventions and providing quality cost-effective care within the health care system. The SRNM as a researcher relies on the client's records as a clinical data source. Protocols and policies should indicate provision of evidence-based health care implementation.

The nursing profession renders care through the nursing process through which needs and goals are met (physiological, psychological, spiritual and sociological). Henderson believed that the nurse must be knowledgeable, have some base for practising individualised nursing care and be a scientific problem solver by using the results of nursing research (George 2002:89). Nurses encounter many problems in their clinical practice affecting the patients they care for; for example, nursing action is required to facilitate optimum wound healing. Each research undertaken contributes to the body of nursing knowledge. A major reason for conducting research is to expand a profession's knowledge base. The focus of nursing research is geared towards generating fundamental knowledge to guide nursing practice.

2.4.7 Evaluation

Evaluation is the judgement of the effectiveness of nursing care plan to meet client goals based on the client's behavioural responses (Craven & Hirnle 2009:18). It is used by the SRNM in caring for a patient to determine whether the set patient goals have been met, partially met or not met. The SRNM reassesses the situation if a goal has been partially met or not met. She collects data to determine the reasons why the goal has not been met and the necessary modifications to the plan of care are made. Among a number of possible reasons for goals not being met or being met only partially are the following:

- The initial assessment data were incomplete.
- The goals and expected outcomes were not realistic.
- The time frame was too optimistic.
- The goals and/or the nursing interventions planned were not appropriate for the patient (White 2001:155).

The SRNM should ensure that her information is accurate, complete and up-to-date so that she is able to make corrections early. She avoids making decisions based on outdated, inaccurate or incomplete information. Evaluation is a fluid process that is dependent on all the other components of the nursing process: assessment, diagnosis, planning and outcome identification and implementation of nursing care (Lewis et al 2007:14). If the goal has not been met, the SRNM has to re-plan the process and start all over again.

2.4.8 Documentation

The SRNM documents data related to the process of giving care at each step of the nursing process in a manner which facilitates information-giving to other health team members and continuity of care. Documentation provides evidence that nursing practice standards related to the nursing process have been maintained during the care of the patient (Lewis et al 2007:15).

The name of the patient and registration number should appear on all documentation related to patient/client care. The SRNM ensures that implementation phase also involves documentation and reporting. Data to be recorded will include the patient's condition prior to the intervention, the specific intervention performed, and the patient response to the intervention and patient outcomes. The SRNM ensures that all communication, both written and verbal, is objective, descriptive and complete, includes observations rather than opinions and is stated or written to convey an accurate picture of the patient's condition (Lewis et al 2007:15).

The SRNM documents each step of the nursing process accurately and timeously and includes a complete and comprehensive record of all observations, actions and interventions in accordance with legal requirements (Kozier, Erb & Blais 2004b:329). She ensures that legible and authorised abbreviations only are used. Where changes or errors occur, she rules them out by single line only and without erasing or using erasing fluid. She then initials the documents, ensuring that date and time of entries have been indicated using black or blue pen (Kozier et al 2004b:329).

The SRNM ensures that patient records are kept safe; no part of the record should be removed as this record may serve as a legal document when necessary (Trenoweth 2007:21). Good record-keeping not only facilitates effective nursing care, but also helps to enhance clinical supervision which can be used in research.

2.5 LITERATURE REVIEW FROM OTHER COUNTRIES ON NURSING PROCESS CARE OF POST-LAPORATOMY PATIENTS AND AUDITING OF PATIENT RECORDS

The translation of research evidence into nursing practice is an ongoing challenge, but it is a challenge to which the nursing profession has arisen (Polit & Beck 2008). Geraldine and Geraldine (2008) conducted a study to examine the relationship between research and nursing process in clinical practice in United Kingdom. Findings indicate that the theoretical basis from which the nursing process was derived, together with the theoretical developments in diagnostic and intervention studies has established the nursing process as a key element of the nurses role in research, education and practice.

In a further study conducted by Rodden and Bell (2002) in the United Kingdom on Record Keeping in Nursing Practice, results revealed that record keeping is a forgotten skill as nurses deliver their care to patients/clients. Griffiths and Hutchings (1999) in their audit study in United Kingdom to discover whether the evaluation of patient care was being adequately recorded in nursing care plans. To establish this, four commonly occurring areas of district work were selected and an ideal assessment of care developed from the available evidence.

Hartz et al (1989) examined the mortality rates at 3,100 United States hospitals and they identified nurse staffing levels as one of the variables that affect the mortality rate. In a different study on the relationship between hospital nurse staffing and adverse patient outcomes, Aiken et al (2002) found that, controlling for patient and hospital characteristics, the addition of one patient to a state registered nurse midwife's workload was associated with a 7% increase in mortality.

The Australian Resource Centre for Hospital Innovations (2003) found that low staffing levels in nursing led to increased accident rates and patient injuries. Korven and Gergern (1998) examined the relationship between nurse staffing and selected adverse events hypothesised to be sensitive to nursing care, while controlling for related hospital characteristics. The adverse events included urinary tract infection, pneumonia and thrombosis after surgery. They found that there were inverse relationships between nurse staffing and the various adverse events.

Hall, Doran and Pink (2004) conducted a study to assess the impact of different staffing models on patient care outcomes, such as patient falls, medication errors, wound infections and urinary tract infections. It was found that the lower the portion of professional nursing staff employed on a unit, the higher the number of medication errors and wound infections. The less experienced the nurses, the higher the number of wound infections.

Rafferty, Maben, West and Robinson (2005) indicated that the measurement of health care quality has been greatly influenced by Donabedian's model of structure (having the right things), process (doing the right things) and outcome (having the right things happen). Until the 1990s, quality improvement efforts focused mainly on structure and process but currently the emphasis has gradually shifted towards the measurement of patient outcomes. The outcomes by which health care can be evaluated include: death, disease, disability, discomfort, length of hospital stay and dissatisfaction (Rafferty et al 2005).

Both nurse staffing and organisational support for nursing care had significant impacts on nurse-assessed quality of care, whether considered individually or together. Those hospitals that provided the least organisational support for nursing care were more likely to be rated by nurses as providing low quality of care (Rafferty et al 2005). Better staffing was positively associated with higher nurse-assessed quality of care, though its effect is not as pronounced as the effect of organisation.

A study was conducted to describe and compare the characteristics of the nurse manager's work in different hospital environments and at different times in Finland (Surakka 2008). Results indicated that the nurse manager's work comprised of responsibility activities, accountability activities and traditional bed-side nursing.

Aiken et al (2002a) conducted a study on the relationship between nurse-patient ratios and patient mortality. The study revealed that higher nurse-patient ratios increased patient mortality and that an increased workload had detrimental effects on nurses' experience of work life (Aiken et al 2002a).

In another study, Karkkainen and Eriksson (2003) evaluated the content of nursing care records and the usefulness of the instrument used for their evaluation in Finland.

Seventy patient records from seven acute special cares in patient units were evaluated based on Phaneuf's Nursing Audit as further developed by Lukander. The results indicated that the nursing records in all the care units evaluated was satisfactory but needed improvement in patient teaching and recording patients' own opinions.

Cheevakasemsook, Chapman, Francis and Davies (2006) explored complexities in nursing documentation and related factors through both qualitative and quantitative methodologies. The study used multiple methods of inquiry: in depth interviewing; participant observation; nominal group processing; focus group meetings; time and motion; study of nursing activities; disruption, incompleteness and inappropriate charting. Findings indicated limited nurses competence, motivation and confidence; ineffective nursing procedures; and inadequate nursing audit, supervision and staff development.

Caesarean section in a semi-rural hospital in Northern Namibia was a major public health concern in northern part of Namibia at a 450 bedded Onandjokwe Lutheran hospital. This prompted Doctors Van Dillen, Meguid, Petrova and Roosmalen (2001) to conduct a study on identifying factors associated with variations in caesarean sections and help to assess the quality of clinical care between 2001 and 2002. Indications of 576 caesarean sections were analysed using intra-operative internal pelvimetry and a record keeping system. Results indicated that most caesarean sections were done for dystocia (34%) followed by repeat caesarean sections 31%.

In a similar study by Basset, Bijlmakers and Sanders (1998) on professionalism, patient satisfaction and quality of health care in Zimbabwe following Zimbabweans structural adjustment programme, collection of fees had been enforced and fees had been increased in the health sector. The results indicated that consumers of health saw nurses as hardened and indifferent especially in urban areas. Nurses defended themselves by saying that they were overworked and they reported that the consumers of health were both demanding and not grateful. What transpired was the decline in the quality of care of patients. Long waiting times by patients was one of the factors that were sighted by the consumers.

McQuide, Millanzi and Farrel (2007) conducted a study in South America with the aim of strengthening Health Professional Associations. They defined a Health Professional

Association as an organisation, usually not for profit, which exists to represent a particular profession, promote excellence in practice and therefore protect the public as well as the good standing of the professionals. In promoting evidence based practice and education standards; the International Council of Nurses commissioned a global study of nursing regulation which resulted in an internationally disseminated guide, still widely used, for nurses associations seeking to establish or reform their regulatory system.

Wu and Norman (2005) in China conducted a study on professionalism, job satisfaction and commitment. Out of 300 state registered nurse midwives interviewed, 219 (73%) showed a decrease in professionalism, job satisfaction and commitment with the contributing valuables being leadership style, lack of support poor motivation and low income and benefits.

In Saudi Arabia, Al Aameri (2000) conducted a study on professionalism job satisfaction and commitment of nurses in hospitals. The results indicated that out of the 90 state registered nurse midwives who were interviewed, 68 (75%) reported a decrease in professionalism, job satisfaction and commitment.

In Malawi, the Ministry of Health and Population (MoHP) is committed to providing quality health services to the people through the guiding principles in the Quality Assurance Policy (MoHP 2005:8) raised in the National Health Plan (NHP, MoHP 1999-2004b). Malawi defines quality as doing the right thing the right way, being recognised as conforming to standards ,and satisfying clients (MoHP 2005:8). The practice of nursing and midwifery is regulated by the Nursing Act (Act 16 of 1995), which governs the nursing profession to ensure quality of care (NMCH 1995a). In this study, level /degree of compliance by SRNMs to the NMCM set process standards was an indicator of quality of professional practice by the SRNMs in Malawi. The following are the NMCM (2005) set process standards:

- The SRNM collects pertinent, accurate and comprehensive client/patient data based on nursing and other related sciences.
- The SRNM develops a plan of care that outlines actual and potential problems and goals of care and prescribes interventions to attain expected outcomes.

- The SRNM safely implements the interventions identified in the plan of care independently, dependently and in collaboration with client/patients and other health care team members in high quality manner.
- The SRNM evaluates the goals of care.
- The SRNM documents data related to the process of giving care at each step of the nursing process in a manner which facilitates information giving to other health team members.

NMCM (2005a) set process standards state that nurses should assist individuals to improve their health in high quality manner. Compliance by SRNMs to NMCM process standards should result in high quality professional practice.

The MoHP started the reform of the health sector in December, 1999, with emphasis on quality assurance, which is being addressed within the HNP (MoHP 1999-2004b). Malawi's nurse practice Act 1995 under the NMCM protects the public by legally defining and describing the scope of nursing practice.

The vacancy rates for nurses in the public health system in Malawi are very high. According to Aitken and Kemp (2003), the nurse-patient ratios in general wards in three of the four major hospitals in Malawi was only 1 nurse to 120 patients in 2002. Three critical factors have contributed to the shortage of SRNM in the public health system: (1) internal migration to the private sector or other professions, (2) international migration to other countries, (3) the impact of the HIV/AIDS, tuberculosis, and malaria epidemics.

Literature from Malawi

According to Aitken and Kemp (2003), of 30 nurses who graduated from one nursing college in Malawi in 2000/2001, only two were reported to have taken up employment in the public sector, while the rest sought employment with NGOs, where salaries were reportedly much higher. The flight of nurses from the country has slowed down. According to Gorman and Hohmuth-Lemonick (2009), the number of nurses leaving the country has decreased from 119 in 2001 to 23 in 2007.

Kingman (2006:12) found that between 1999 and 2001, over 60% of the entire staff of state registered nurse midwives in a single hospital left for developed countries.

According to the USAID, deaths of nurses in Malawi (1997/8) were reported to account for 43% of all losses of nurses to the health system. There is some empirical evidence that suggests that understaffing and heavy workloads are a major challenge for nurses in Malawi. However there is not a lot of information on quality of professional practice of SRNMs in Malawi. Kaponda et al (1999) carried out a survey on what SRNM in Malawi perceived to be the most pressing issues in their work. The findings indicated that shortage of staff was the most pressing issue. Similarly, Chirwa (2000) found that shortage of staff was one of the major challenges that nurse managers in selected hospitals in Malawi reported. Aiken et al (2002a) found that higher nurse-patient ratios increased patient mortality and that an increased workload had detrimental effect both on nurse managers' and nurses' experience of work life.

The problem of shortage of nurses in the Malawian health care delivery system was also identified by Palmer (2006:31). The findings indicated that Malawi had the lowest levels of health personnel required to maintain a minimum level of health care in the Southern African region. These shortages ran across all health professional cadres. There were 26 nurses per 100,000 populations and one doctor per 62,000 populations. If surgical units were not provided with adequate number of nursing staff, the few nurses that were available were subjected to high workload resulting into negative physical and psychological effects such as burnout, job dissatisfaction and fatigue, hence poor quality nursing care and patient outcomes. Since the shortage of staff was a controlled extraneous variable, the researcher did not pay particular attention to it but focus was on set process standards as measure of professional practice.

2.6 CONCLUSION

This chapter described the professional nursing practice consistent with quality nursing care and NMCM process standards. The theoretical assumptions and conceptual framework were discussed based on NMCM (2005a) set process standards and the nursing process. The nursing theory of Virginia Henderson was tabled as the assumption the researcher has in relation to this study. A detailed nursing care plan was described. The following chapter describes the methodology of the study.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

The previous chapter discussed literature review, NMCM (2005a) set process standards and the use of the nursing process in nursing care of patients. It further described Virginia Henderson theory as the researcher's assumption for this study. This chapter describes the approach which was used to evaluate the quality of professional practice by SRNMs in Malawi public central hospitals. The chapter begins by describing the research design, population and sampling methods, data collecting technique, the instrument used and the reliability and validity of the instrument. The chapter concludes with an overview of ethical consideration and the measures which were taken to protect the rights of the study participants.

3.2 RESEARCH DESIGN

A quantitative, evaluative, descriptive and contextual survey was used in this study to evaluate the quality of professional practice as reflected in clinical nursing care of patients. Babbie and Mouton (2001:74) state that a research design is a plan or blueprint of how one intends conducting the research.

3.2.1 Quantitative research

Babbie and Mouton (2001:52) describe quantitative research design as the standard way of assigning numbers to different variables that are susceptible to a variety of statistical manipulations. Burns and Grove (2005:747) concur, stating that quantitative research design is a formal, objective, systematic process to describe and test relationships and to examine cause and effect. This study used quantitative research as opposed to any other research methodology because standards are being evaluated in the study. This design was also chosen because of its ability to provide complete and accurate information about these phenomena through description (Burns & Grove 2001:795).

3.2.2 Evaluative research

Burns and Grove (2005:735) describe evaluation as examining something according to set criteria. In this study, the researcher evaluated the quality of professional practice by SRNMs in clinical nursing care of patients in public central hospitals against the set process standards of the NMCM (2005a). Post-laparotomy patients' records and observed skills practice, activities and behavior was evaluated based on set process standards.

3.2.3 Descriptive research

A descriptive study method is designed to gain more information about characteristics within a particular field of study (Burns & Grove 2001:248). Its purpose is to provide a picture of situations as they naturally happen. Mouton (2001:105) states that description is a precise measurement and reporting of characteristics of the population under study. The researcher described the information as gathered from the patients' records and observing the practice by SRNM.

3.2.4 Survey

Denscombe (2003:6) describes the verb to *survey* as to view comprehensively and in detail. According to Burns and Grove (2001:256), a research survey describes a phenomenon by using a questionnaire or personal interview to collect data. Hlongwa (2003:33) describes the advantages of a survey as follows:

- It is flexible.
- It is used for discovery of new insights and for pointing out typical responses.
- It can be applied to many people or items.
- It provides data about the present: what people are thinking, doing and anticipating.

3.2.5 Contextual

Malawi is heavily dependent on donor aid that accounts for 70% of the national development budget (Kalua, Kambewa & Mangani 2005:1). Malawi's health care delivery is based on the NHP (MoHP 1999-2004b). Three main agencies: The MoHP, the Christian Hospital Association of Malawi and the Ministry of Local Government provide most of the formal health care services in Malawi. However, the MoHP is the main agency which is responsible for developing policies, strategies and programmes for health care in Malawi.

The practice of nursing and midwifery is regulated by the Nursing Act (Act 16 of 1995), which governs the nursing profession to ensure quality of care (NMCH 1995a). The standards set by the NMCM cannot be separated from practice.

There are four central hospitals, twenty three district hospitals and twenty four community hospitals in Malawi.

Table 3.1 indicates the name, number and type of hospitals per region and the three types of hospitals central, district, and community.

Table 3.1 Malawi – names of places, number and type of hospitals per region

REGION	CENTRAL HOSPITALS PER AREA	DISTRICT HOSPITALS PER AREA	COMMUNITY HOSPITALS PER AREA
SOUTHERN REGION: Names of places			
Nsanje	-	1	1
Chiradzulo	-	1	-
Chikwawa	-	1	1
Mulanje	-	1	-
Thyolo	-	1	1
Phalombe	-	1	-
Neno	-	1	-
Zomba	1	-	1
Blantyre	1	-	-
Mwanza	-	1	-
Mangochi	-	1	1
Machinga	-	1	-
Balaka	-	1	-
Sub-total	**2**	**11**	**5**
CENTRAL REGION Names of places			
Ntcheu	-	1	-
Dedza	-	1	-
Salima	-	1	-
Lilongwe	1	-	3
Mchinji	-	1	1
Dowa	-	1	1
Ntchisi	-	1	-
Kasungu	-	1	1
Nkhotakota	-	1	1
Sub-total	**1**	**8**	**7**
NORTHERN REGION: Names of places			
Nkhatabay	-	1	1
Likoma	-	-	1
Mzimba	1	1	4
Rumphi	-	1	2
Karonga	-	1	3
Chitipa	-	1	1
Sub-total	**1**	**5**	**12**
TOTAL	**4**	**23**	**24**

(MoHP 1999-2004b)

Central hospitals were chosen as the focus for this study. These central hospitals were: Queen Elizabeth Central Hospital (QECH), Kamuzu Central Hospital (KCH), Zomba

Central Hospital (ZCH) and Mzuzu Central Hospital (MCH). The central hospitals were chosen because they provide care to post-laparotomy patients.

3.3 POPULATION AND SAMPLING

Collins, Du Plooy, Puttergill, Terre Blanche, Van Eeden, Van Rensburg and Wigston (2003:159) state that a population is an entire group of persons or set of objects and events the researcher wants to study that contains all variables of interest to the researcher. Burns and Grove (2005:746) describe a population as all elements (individuals, objects, events or substances) that meet the sample criteria for inclusion in a study; sometimes referred to as “target population”. Comack (2000:23) notes that a population is the entire class of cases to which the researcher wishes to generalise the research.

Sampling, according to Burns and Grove (2005:750), is selecting groups of people, events, behaviours or other elements with which to conduct a study.

3.3.1 Types of hospitals

There are three types of public hospitals in Malawi. These are:

- A central public hospital which is a referral hospital, to which all the district hospitals in that region refer patients that require specialised treatment. All central public hospitals in the three regions were selected for the research project. Six days were utilised per hospital.
- A district public hospital which offers general treatment to patients within that district.
- A community public hospital which is smaller than a district hospital and located in the rural community and offers minimal treatment to the surrounding community.

3.3.2 Types of units

The central public hospitals in Malawi follow the pattern of providing separate units for male and female patients. There are also children surgical units which were not

selected. Only adult surgical male and female units that provide clinical nursing care to post-laparotomy patients at each hospital were selected. Eight units from the four central hospitals in the male and female surgical units were evaluated.

3.3.3 Post-laparotomy patients

To limit the scope of research, only post-laparotomy patients were selected.

All competent SRNMs should have good knowledge on how to provide clinical care for post-laparotomy patients. Therefore all SRNMs should be able to apply their set process standards to these patients.

A non-random convenience sampling was used to select all available post-laparotomy patients from the time of leaving the theatre to the third day after the procedure to observe the practice by SRNM. Information collected included whether the patient history was complete, the plan was individualized and done with the patient or significant others, how implementation of the plan was done and by who, and whether evaluation of care was done and documented.

3.3.4 Post-laparotomy patients' records

Two patient records per day, per researcher and per research assistant were analysed. A total of 100 records were analysed, as requested by the statistician.

3.3.5 State registered nurse midwives

The SRNMs provide and supervise the care given to post-laparotomy patients provided by other categories of nurses. They are responsible for quality nursing care to patients in the unit. The data was collected for six days in each of the four central hospitals. Kamuzu Central Hospital was the first hospital to collect data from. The second was Zomba Central Hospital then Queens Central Hospital and finally Mzuzu Central Hospital. The SRNMs that the researcher and research assistants were in contact with during the study period were 48.

3.4 UNIT OF ANALYSIS

This study followed this unit of analysis:

- Geographical area – Malawi
- Health care sector – Public central hospitals
- State registered nurse midwives – Public nursing sector
- Units – Adult surgical units
- Nursing care – Post-laparotomy patients and patients' records

3.5 DATA COLLECTION METHODS

There are various methods that can be used to collect data in research. The development of an instrument by the researcher assisted by supervisor, use of research assistants, participant observation and patients' record and other selected unit records analysis were the methods chosen for data collection in this study.

3.5.1 Instrument

The instrument was developed by the researcher assisted by the supervisor, based on the NMCM (2005a) set process standards. Nurses in key positions were requested to evaluate the tool in relation to relevance of the study. These nurses were not used in the study per se. The instrument consists of five NMCM set standards on assessment, planning, implementation, evaluation and documentation with 37 items. Responses are categorised into a three-point rating scale, namely:

Non-compliance	NC	=	0.0
Partial compliance	PC	=	0.5
Compliance	C	=	1.0

The statistician was involved in the development and analysis of the instrument. The criteria for evaluation and the method of evaluation were included in the instrument under measurement criteria and data collection strategy (see Annexure I).

3.5.2 Research assistants

The study required the researcher to have two research assistants for data collection. Two state registered nurse midwives working at a public central hospital were chosen. The criterion used for selection was that they needed to have experience in caring for post-laparotomy patients. The research assistants were informed verbally about the nature purpose and objectives of the study. After an agreement was reached between the researcher and the research assistants, one day's training was offered to the research assistants to ensure that data would be gathered in the same manner. The research assistants arranged their leave days in order to be available for the study. Mondays, Tuesdays and Thursdays from 7:15 am to 4:00 pm (peak hours) were utilised. These days were chosen by the SRNM in-charge of units because activity is high on these days. The time of 7:15 am was the correct time to observe the taking of reports and also the change-over of shift.

One assistant researcher was allocated to the male unit while the other assistant researcher was allocated to the female unit and the researcher rotated between the two wards first three days in one and the next three days in another unit. Dates for collecting data were from the 5thof August to the 6th of October 2008. Six days were spent in each hospital.

3.5.3 Participant observation

Participant observation was used as one of the methods of data collection for the study. According to Stommel and Wills (2004:259), the researcher or observer becomes part of and active participant in the social networks and interaction patterns that are being studied. Denscombe (2003:209) states that as a method of social research, participant observation is good for getting at actors' meanings as they see them. This method was chosen because it stands a better chance of retaining the naturalness of the setting than other social research methods.

The researcher and research assistants observed the care rendered to post-laparotomy patients during the six days that they were in each central hospital based on the instrument as developed by the researcher (refer to Annexure I). They did the observations during report taking, during doctor's rounds, during practice skills like

actual patient assessment and briefing sessions when staff members were coming in from the off days. Reactivity and observer biases could not be eliminated. Reactivity is ethical difficulties and distorted behavior by study participants when they are aware that they are being studied (Polit & Beck 2008: 370). The observer biases were minimised by training of the research assistants.

3.5.4 Patient record analysis

Each data collector (researcher and two research assistants), collected a patient record for analysis according to the five NMCM set process standards of: assessment, planning, implementation, evaluation and documentation. The patient records were collected after report taking and each data collector analysed a separate patient record of post-laparotomy day three in order to get a full picture of the care given.

3.6 PILOT STUDY

Pretesting of the data collection instrument was done prior to the actual study at one central hospital which was also used for the main study. According to Burns and Grove (2005:746), a pre-test of the instrument is a smaller version of the proposed study conducted to develop or refine the methodology such as the treatment, instrument or data collection process. The pilot therefore, assisted in clarifying questions which would possibly be misinterpreted during the actual study. Items which were not clear were modified and rephrased. The pilot study was done in the month of July with different SRNMs, patients and records.

3.7 DATA ANALYSIS

Data analysis, according to Green and Browne (2005:33), refers to the logic of how data will be analysed. The statistician from University of Malawi was consulted and briefed on the research question and a research plan was agreed upon, including the appropriate statistical tests. Means and standard deviation were used to show the scores for the different hospitals. A T-test was used to determine the evidence that the SRNMs in each of the four public central hospitals complied with the respective standards. To compare the level of compliance at different public central hospitals, the

Friedman test for randomised block designs was used. The Friedman test is a non-parametric equivalent of Analysis of Variance (ANOVA) (Burns & Grove 2005:526).

3.8 RELIABILITY AND VALIDITY

Reliability of a measure, according to Burns and Grove (2005:375), denotes the consistence of a measure obtained in the use of a particular instrument and is an indication of the extent of a random error in the measurement method. Comark (2000:154) defines validity as the extent to which a measure achieves the purpose for which it was intended.

Content validity of the tool was based on recent literature and expert judgement of SRNMs in key positions in nursing practice. The tool was sent by post to SRNMs in top key positions in nursing practice in Malawi to critically look at each question in order to assess the degree to which the study variables were represented. This exercise also assessed the instruments' overall appropriateness for use. These SRNMs in key positions in nursing practice were also asked to decide whether each question was either relevant or irrelevant. This was done before the pilot study was conducted. Responses were collected and analysed, then common and conflicting viewpoints were identified. This process was repeated twice then a consensus emerged. According to Burns and Grove (2001:403), the instrument used to collect data must reflect the concepts being examined. The pilot study was done as part of ensuring the validity and reliability of the study. The results of the pilot study assisted the researcher in refining the tool and its contents. Expert consultation, research assistants training and orientation were also part of ensuring the validity and reliability of the study.

Since the services of the research assistant were utilised, it was necessary to determine interrater reliability. Interrater reliability was tested during pilot study. According to Burns and Grove (2005:375), interrater reliability is used primarily when different observers or raters are using an instrument to measure the same phenomenon seeking to determine the consistency of the instrument in yielding measurement of the same traits in the same subjects.

3.9 ETHICAL CONSIDERATION

Since the study involved human participants, formal approval of the research protocol was obtained from University of South Africa, Health Studies Research and Ethics Committee (see Annexure II). The permission was requested from the Health Science Committee of Malawi (see Annexure III), and was granted verbally. Permission was also requested and granted by directors in the public central hospitals (see Annexure IV-VII).

Informed consent was generally obtained from unit managers for all the participants after being given adequate information concerning the nature of the study and the possible benefits and risks of the study.

Participants' right to confidentiality was protected; information given was not to be publicly reported or made available to parties other than those involved in the research. Participants were also assured that the research data obtained would not be shared with people known to them unless explicit permission was given. All confidential information was kept at a place where nobody had access to it except the researcher. Patients' records names were not written on the tool to guarantee anonymity.

Verbal consent was also obtained from the research assistants and a financial stipend was given to them in accordance with the civil servant rates as specified by the Malawi Government.

3.10 CONCLUSION

This chapter has described the research methodology used in the study. The research design, the sample and sampling methods, data collection methods, the research instrument development used as well as reliability and validity issues have been discussed. The chapter concludes by outlining measures which were taken to ensure ethical practice and to safeguard participants' rights. The following chapter describes data presentation, data analysis and discussion of the findings of the study.

CHAPTER 4

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.1 INTRODUCTION

Chapter 3 described the research design and methods used in this study. This chapter discusses the analysis of data and presentation of findings. According to Burns and Grove (2001:487) the purpose of a statistical analysis is to

- summarise data collected
- explore the meaning of deviations in the data
- test the proposed relationships in a theoretical model
- examine causality
- infer that the findings from the sample are indicative of the entire population
- infer from the sample to a theoretical model

The purpose of this study was to evaluate the quality of professional practice by the state registered nurse midwives in Malawi as reflected in clinical care of post-laparotomy patients against the set process standards of the NMCM (2005a).

The hypothesis of the study was:

The quality of professional practice by the state registered nurse midwives in clinical nursing care in public central hospitals in Malawi, as reflected in the clinical care of post-laparotomy patients' records, is inadequate and non-compliant with the NMCM (2005a) set process standards.

The statistician was consulted during the development and assessment of the tool, and entering and analysis of the data.

4.2 SAMPLE REALISATION

Permission to conduct research in the central hospitals was granted by the Directors of the respective hospitals following the researcher's written request both to the MoHP National Sciences Ethics Committee and the central hospitals (see Annexures III –VIII). As a requirement, the researcher sent the proposal to the MoHP National Sciences Ethics Committee. The directors of the central hospitals gave consent to conducting of research by the researcher in writing (see Annexure IX).

The research assistants and the researcher arranged for leave days in order to be available for data collection. Mondays, Tuesdays and Thursdays from 7:15 am to 4:00 pm (peak hours) were used for data collection and a number of twenty four (24) days were utilised for data collection. Data was collected from the 5th of August to 6th October 2008. A pilot study was done, followed by the main study in the public central hospitals. A non-probability purposive sampling was used in the selection of hospitals that provide care to post-laparotomy patients. Non-random sampling was used in selecting the units. Eight surgical units were evaluated. The hospitals had separate male and female units. On arrival at each public central hospital, following all the protocols of introduction and a brief orientation, the researcher and the research assistants identified the units with the aim of finding the correct sample (post-laparotomy patients). Patients' records were analysed from day three. The researcher and the research assistants spent six days at each central hospital. A total of 100 patients' records were selected and audited from the four central hospitals.

The instrument was based on five process standards as set by the Nurses Midwives Council of Malawi (NMCM 2005a). The instrument was developed by the researcher, assisted by the supervisor with the involvement of the statistician from the development and analysis, as a three-point rating scale with 37 items. Nurses in key positions were requested to evaluate the instrument in relation to the study. These nurses in key positions were not part of the study per se. The measurement criteria and data collection strategies were included in the instrument. The rating scale consisted of Compliance – 1.0; Partial compliance – 0.5; and Non-compliance – 0.0. The five process standards are: assessment, with 6 items; planning, with 8 items; implementation, with 16 items; outcome evaluation, with 4 items and documentation, with 3 items.

4.3 DEMOGRAPHIC DATA

The demographic data of the post-laparotomy patients from Kamuzu Central Hospital were:

- 95% of patients were married while 5% were not married.
- 53% were women while 47% were men.
- 62% were employed while 38% were not employed.
- The age range of the patients was 35 years to 67 years.

The demographic data of the post-laparotomy patients from Queen Elizabeth Central Hospital were:

- 92% of patients were married while 8% were not married.
- 44% were women while 56% were men.
- 57% were employed while 43% were not employed.
- The age range of the patients was 42 years to 66 years.

The demographic data of the post-laparotomy patients from Zomba Central Hospital were:

- 97% of patients were married while 3% were not married.
- 54% were women while 46% were men.
- 45% were employed while 55% were not employed.
- The age range of the patients was 28 years to 69 years.

The demographic data of the post-laparotomy patients from Mzuzu Central Hospital were:

- 98% of patients were married while 2% were not married.
- 46% were women while 54% were men.
- 37% were employed while 63% were not employed.
- The age range of the patients was 35 years to 67 years.

In this study, all the post-laparotomy patients were black Malawians.

4.4 DATA ANALYSIS

The collected data were compiled, controlled by the researcher after each session, and given to the statistician to analyse.

4.4.1 Descriptive data analysis

Table 4.1 shows criteria for evaluation, the means (M), standard error of the means (SE Mean), standard deviations (SD), and upper confidence limit of the score for the different hospitals. A cursory look indicates that there is a lot of variation in the score means but much less variation in the standard deviations. The Central Limit Theory in statistical theory states that an average of a sufficiently large number of identically distributed independent random variables, each with finite mean and variance, will be approximately normally distributed. The assessment mean for each hospital is derived from 250 (i.e. 25 x 10) observations; Planning, Implementation, Outcome, Evaluation and Documentation means are derived from 200, 525, 100 and 75 observations respectively. If the researcher assumes that the observations in each hospital/criterion combination are equally distributed, the *t*-test can be used to determine whether there is any evidence that the state registered nurse midwives in each of the four hospitals comply with the respective standards.

Table 4.1 Means and standard deviations of the scores of different hospitals

HOSPITAL	CRITERIA	MEAN	SE MEAN	STANDARD DEVIATION	UPPER CONF LIMIT
Kamuzu Central Hospital (KCH)	Assessment	0.662	0.025	0.392	0.712
	Documentation	0.447	0.050	0.432	0.546
	Implementation	0.696	0.016	0.373	0.729
	Outcome evaluation	0.320	0.043	0.430	0.406
	Planning	0.483	0.028	0.393	0.538
Mzuzu Central Hospital (MCH)	Assessment	0.684	0.022	0.344	0.728
	Documentation	0.433	0.051	0.445	0.536
	Implementation	0.741	0.016	0.373	0.774
	Outcome evaluation	0.345	0.041	0.413	0.428
	Planning	0.595	0.024	0.345	0.644
Queen Elizabeth Central Hospital (QECH)	Assessment	0.620	0.025	0.393	0.670
	Documentation	0.160	0.042	0.360	0.243
	Implementation	0.740	0.018	0.405	0.775
	Outcome evaluation	0.505	0.047	0.474	0.600
	Planning	0.693	0.027	0.381	0.746
Zomba Central Hospital (ZCH)	Assessment	0.670	0.024	0.378	0.718
	Documentation	0.173	0.035	0.302	0.243
	Implementation	0.667	0.017	0.398	0.702
	Outcome evaluation	0.305	0.043	0.432	0.391
	Planning	0.633	0.024	0.342	0.681

Evidence of compliance to NMCM set process standards

When the score mean (M) is equal to 1,00 in the Null hypothesis, therefore, there is compliance. In the alternative hypothesis, the score mean (M) less than 1.00, there is partial or non-compliance. The T test was done with significance level of 5%. Rejection region: t>2.000 (2.5% value for 60 degrees of freedom). According to Polit & Beck (2008:593), a T-test is a parametric procedure used to test differences in group means (sometimes referred to as student's t). In this study a T-test was done to determine whether there is any evidence that the state registered nurse midwives in each of the four hospitals complied with the respective standards.

Table 4.1 shows the upper confidence limits for the respective hospital/criterion combinations, where upper confidence limit = mean + t x SE Mean. If the upper confidence limit is less than 1, then the null hypothesis can be rejected at a 5% level of significance and conclude that there is non- or partial compliance on the relevant criterion at the given hospital. If the upper confidence limit is more than 1, then null hypothesis cannot be rejected; there is insufficient evidence from the sample to prove that there is non- or partial compliance.

In conclusion, null hypothesis can be rejected at 5% significance level for all combinations of hospitals/criteria; there is non- or partial compliance in all four hospitals and on each of the standards. Table 4.2 contains the question, mean, standard error mean (SE Mean), standard deviation (StDev), upper confident limit (UPL), and abbreviations given for each central hospital. Table 4.2 shows similar results but at individual question level. This suggests that there is compliance only with respect to questions 3.1 to 3.5 and 3.15 across all the hospitals. Graph on figure 4.2 supports these conclusions.

Table 4.2 Means and standard deviations at individual level

Question	Kamuzu Central Hospital				Mzuzu Central Hospital				Queen Elizabeth Central Hospital				Zomba Central Hospital			
	MEAN	SE MEAN	ST DEV	UCL	MEAN	SE MEAN	ST DEV	UCL	MEAN	SE MEAN	ST DEV	UCL	MEAN	SE MEAN	ST DEV	UCL
1.1.1	0.880	0.044	0.218	*0.967*	0.820	0.049	0.245	*0.918*	0.780	0.051	0.253	*0.881*	0.900	0.041	0.204	*0.982*
1.1.2	0.900	0.041	0.204	*0.982*	0.820	0.049	0.245	*0.918*	0.780	0.051	0.253	*0.881*	0.900	0.041	0.204	*0.982*
1.1.3	0.300	0.076	0.382	*0.453*	0.520	0.068	0.338	*0.655*	0.300	0.065	0.323	*0.429*	0.380	0.066	0.332	*0.513*
1.1.4	0.260	0.077	0.385	*0.414*	0.420	0.069	0.344	*0.558*	0.260	0.059	0.293	*0.377*	0.380	0.066	0.332	*0.513*
1.2	0.720	0.065	0.325	*0.850*	0.740	0.059	0.293	*0.857*	0.820	0.049	0.245	*0.918*	0.840	0.048	0.238	*0.935*
1.3	0.680	0.081	0.405	*0.842*	0.680	0.070	0.350	*0.820*	0.820	0.049	0.245	*0.918*	0.780	0.058	0.292	*0.897*
1.4.1	0.720	0.065	0.325	*0.850*	0.640	0.079	0.396	*0.798*	0.440	0.097	0.486	*0.634*	0.500	0.096	0.479	*0.691*
1.4.2	0.660	0.080	0.401	*0.820*	0.620	0.083	0.415	*0.786*	0.400	0.096	0.479	*0.591*	0.500	0.096	0.479	*0.691*
1.5	0.760	0.065	0.327	*0.891*	0.780	0.058	0.292	*0.897*	0.800	0.058	0.289	*0.915*	0.780	0.051	0.253	*0.881*
1.6	0.740	0.071	0.357	*0.883*	0.800	0.058	0.289	*0.915*	0.800	0.058	0.289	*0.915*	0.740	0.065	0.327	*0.871*
2.1	0.440	0.073	0.363	*0.585*	0.560	0.060	0.300	*0.680*	0.700	0.071	0.354	*0.841*	0.560	0.073	0.363	*0.705*
2.2	0.420	0.075	0.373	*0.569*	0.540	0.057	0.286	*0.654*	0.680	0.076	0.379	*0.831*	0.560	0.073	0.363	*0.705*
2.3	0.500	0.076	0.382	*0.653*	0.540	0.064	0.320	*0.668*	0.720	0.071	0.356	*0.862*	0.560	0.073	0.363	*0.705*
2.4	0.400	0.076	0.382	*0.553*	0.460	0.057	0.286	*0.574*	0.680	0.076	0.379	*0.831*	0.480	0.068	0.338	*0.615*
2.5	0.660	0.085	0.426	*0.830*	0.780	0.077	0.384	*0.934*	0.780	0.071	0.356	*0.922*	0.820	0.049	0.245	*0.918*
2.6	0.620	0.083	0.415	*0.786*	0.780	0.077	0.384	*0.934*	0.780	0.071	0.356	*0.922*	0.840	0.048	0.238	*0.935*
2.7	0.400	0.076	0.382	*0.553*	0.540	0.070	0.351	*0.680*	0.600	0.087	0.433	*0.773*	0.620	0.066	0.332	*0.753*
2.8	0.420	0.075	0.373	*0.569*	0.560	0.067	0.333	*0.693*	0.600	0.087	0.433	*0.773*	0.620	0.066	0.332	*0.753*
3.1	1.000	0.000	0.000	*1.000*	1.000	0.000	0.000	*1.000*	1.000	0.000	0.000	*1.000*	1.000	0.000	0.000	*1.000*
3.2	1.000	0.000	0.000	*1.000*	1.000	0.000	0.000	*1.000*	1.000	0.000	0.000	*1.000*	1.000	0.000	0.000	*1.000*
3.3	1.000	0.000	0.000	*1.000*	1.000	0.000	0.000	*1.000*	1.000	0.000	0.000	*1.000*	1.000	0.000	0.000	*1.000*
3.4	1.000	0.000	0.000	*1.000*	1.000	0.000	0.000	*1.000*	1.000	0.000	0.000	*1.000*	1.000	0.000	0.000	*1.000*
3.5	1.000	0.000	0.000	*1.000*	1.000	0.000	0.000	*1.000*	1.000	0.000	0.000	*1.000*	1.000	0.000	0.000	*1.000*

Question	Kamuzu Central Hospital				Mzuzu Central Hospital				Queen Elizabeth Central Hospital				Zomba Central Hospital			
	MEAN	**SE MEAN**	**ST DEV**	**UCL**	**MEAN**	**SE MEAN**	**ST DEV**	**UCL**	**MEAN**	**SE MEAN**	**ST DEV**	**UCL**	**MEAN**	**SE MEAN**	**ST DEV**	**UCL**
3.6	0.780	0.058	0.292	*0.897*	0.900	0.061	0.250	*1.000*	0.760	0.077	0.385	*0.914*	0.780	0.058	0.292	*0.897*
3.7	0.700	0.076	0.382	*0.853*	0.860	0.087	0.307	*0.983*	0.720	0.082	0.410	*0.884*	0.780	0.058	0.292	*0.897*
3.8	0.480	0.089	0.444	*0.658*	0.760	0.069	0.436	*0.934*	0.660	0.095	0.473	*0.849*	0.800	0.082	0.408	*0.953*
3.9.1	0.360	0.074	0.369	*0.507*	0.420	0.069	0.344	*0.558*	0.520	0.089	0.444	*0.698*	0.420	0.055	0.277	*0.531*
3.9.2	0.360	0.074	0.369	*0.507*	0.420	0.086	0.344	*0.558*	0.520	0.089	0.444	*0.698*	0.420	0.055	0.277	*0.531*
3.10.1	0.640	0.079	0.396	*0.798*	0.540	0.086	0.431	*0.712*	0.560	0.093	0.464	*0.745*	0.480	0.074	0.367	*0.627*
3.10.2	0.620	0.078	0.389	*0.776*	0.540	0.080	0.431	*0.712*	0.560	0.093	0.464	*0.745*	0.480	0.074	0.367	*0.627*
3.11.1	0.560	0.078	0.391	*0.716*	0.660	0.079	0.401	*0.820*	0.660	0.090	0.450	*0.840*	0.540	0.076	0.380	*0.692*
3.11.2	0.560	0.078	0.391	*0.716*	0.640	0.065	0.396	*0.798*	0.600	0.091	0.456	*0.783*	0.520	0.079	0.395	*0.678*
3.12.1	0.640	0.061	0.307	*0.763*	0.740	0.058	0.327	*0.871*	0.760	0.071	0.357	*0.903*	0.580	0.075	0.373	*0.729*
3.12.2	0.640	0.061	0.307	*0.763*	0.720	0.091	0.292	*0.837*	0.700	0.076	0.382	*0.853*	0.580	0.075	0.373	*0.729*
3.13	0.480	0.084	0.420	*0.648*	0.500	0.071	0.456	*0.683*	0.600	0.096	0.479	*0.791*	0.320	0.095	0.476	*0.510*
3.14.1	0.660	0.056	0.278	*0.771*	0.700	0.076	0.354	*0.841*	0.700	0.087	0.433	*0.873*	0.480	0.084	0.420	*0.648*
3.14.2	0.620	0.060	0.299	*0.739*	0.600	0.044	0.382	*0.753*	0.640	0.089	0.445	*0.818*	0.440	0.088	0.441	*0.616*
3.15	0.920	0.047	0.236	*1.015*	0.940	0.088	0.220	*1.028*	0.980	0.020	0.100	*1.020*	1.000	0.000	0.000	*1.000*
3.16	0.600	0.087	0.433	*0.773*	0.620	0.088	0.440	*0.796*	0.600	0.096	0.479	*0.791*	0.380	0.097	0.485	*0.574*
4.1	0.380	0.088	0.440	*0.556*	0.380	0.086	0.440	*0.556*	0.500	0.096	0.479	*0.691*	0.320	0.091	0.454	*0.501*
4.2	0.340	0.090	0.450	*0.520*	0.320	0.080	0.430	*0.492*	0.540	0.095	0.477	*0.731*	0.300	0.087	0.433	*0.473*
4.3	0.300	0.087	0.433	*0.473*	0.340	0.080	0.401	*0.500*	0.520	0.098	0.489	*0.716*	0.300	0.087	0.433	*0.473*
4.4	0.260	0.082	0.411	*0.425*	0.340	0.089	0.401	*0.500*	0.460	0.095	0.477	*0.651*	0.300	0.087	0.433	*0.473*
5.1	0.600	0.082	0.408	*0.763*	0.520	0.087	0.444	*0.698*	0.220	0.082	0.410	*0.384*	0.180	0.057	0.284	*0.294*
5.2	0.320	0.086	0.430	*0.492*	0.280	0.087	0.435	*0.454*	0.080	0.055	0.277	*0.191*	0.140	0.061	0.307	*0.263*
5.3	0.420	0.085	0.425	*0.590*	0.500	0.0	0.433	*0.673*	0.180	0.076	0.379	*0.331*	0.200	0.065	0.323	*0.329*

To compare the level of compliance to NMCM set process standards at different hospitals/criteria, the Friedman Test for randomised block designs was used, which is a non-parametric equivalent ANOVA.

Variations on the level of compliance across the different criteria

Because of the variations on the level of compliance across the different criteria, a Null hypothesis could be phrased as: The probability distributions of the compliance scores are identical across the 5 criteria (i.e. the SRNMs perform equally well at the 5 different tasks). Or an alternative hypothesis: At least two of the probability distributions are different (i.e. the SRNMs do not perform equally well in the 5 criteria).

Crooks and Davis (1998:227) state that Friedman two-way analysis of variance by ranks is a non-parametric test used with matched samples or repeated measures therefore Friedman Test for randomised block designs was done based on:

Test statistic:

$$\chi^2 = \frac{12}{nk(k+1)} \sum (T_g)^2 \; - 3n(k+1)$$

Where,
n = number of blocks (hospitals)
k = number of treatments (criteria)
T_g = sum of the ranks for the gth criteria, where the rank of each measurement is computed relative to the size of the mean within the block
Significance level: 5%
Rejection region: $\chi^2 > 9.48773$ (chi-squared value for k-1 = 4 degrees of freedom)

When the researcher has determined the level of significance it is possible to construct graphically the region of rejection which is always located in the tail or tails of the distribution curve. The area of rejection on the curve would vary whether or not the research hypothesis is directional or non-directional. When the research hypothesis is non-directional, the region of rejection is equally divided between the upper and lower (right and left) tails of the curve.

Table 4.1 shows the result of the analysis. The Friedman's test was carried out on the means for each criterion in the different hospitals:

$\chi^2 = 12 / (4*5*6) *(16^2 + 13^2 + 19^2 + 6^2 + 6^2) – (3*4*6) = 13.8,$

which is larger than the critical value. The significance level is a criterion which is the cut-off point on the distribution curve at which probability is small enough to reject the null hypothesis (Polit & Beck 2008:92). The significance level of 5% to the study meant that the researcher had accepted the risk of making 5 false decisions in every 100. The significance level is a probability and the notation is usually P=0,05 and depended on the chance the statistician took of being wrong. In other words 95 times out of 100, similar results would be obtained with a new sample. Therefore, the null hypothesis was rejected and concluded at the 5% level of significance that the probability distributions of at least two of the 5 criteria differ in location. The state registered nurse midwives performed significantly better in some criteria than in others.

Looking at table 4.3 which indicates compliance across different criteria in individual central hospitals, and figure 4.1, it appears that SRNMs in Malawi performed better (the observation means are higher) in Implementation followed by Assessment, and Planning than they do in Outcome Evaluation and Documentation (see ranking and overall mean and sum of rank for the g^{th} hospital). The *p*-value (the probability of obtaining a result as significant as this if the null hypothesis was indeed true) is 0.00796.

Table 4.3 Compliance across criteria

CRITERIA	HOSPITAL				
	KAMUZU CENTRAL HOSPITAL (KCH)	**MZUZU CENTRAL HOSPITAL (MCH)**	**QUEEN ELIZABETH CENTRAL HOSPITAL (QECH)**	**ZOMBA CENTRAL HOSPITAL (ZCH)**	**OVERALL MEAN (T_g)**
Assessment	0.662	0.684	0.620	0.670	0.659
Rank	*4*	*4*	*3*	*5*	*16*
Planning	0.483	0.595	0.693	0.633	0.601
Rank	*3*	*3*	*4*	*3*	*13*
Implementation	0.696	0.741	0.740	0.667	0.711
Rank	*5*	*5*	*5*	*4*	*19*
Outcome evaluation	0.320	0.345	0.505	0.305	0.369
Rank	*1*	*1*	*2*	*2*	*6*
Documentation	0.447	0.433	0.160	0.173	0.303
Rank	*2*	*2*	*1*	*1*	*6*

Variation on the level of compliance across the different hospitals

The four hospitals are compared with respect to compliance on each individual criterion. A cursory look at the results (table 4.4) would suggest that the hospital compliance scores do not vary similarly across the different criteria. For example, the means for assessment vary over a small range (between 0.620 and 0.670) whereas those for Documentation vary over a much larger range between (0.160 and 0.447). It would therefore be more revealing to compare compliance on an individual criterion basis. The Friedman test assumes that either the number of blocks or the number of treatments exceeds 5. Therefore the statistician advised that they should not compare the hospitals with respect to Outcome Evaluation and Documentation, since the number of blocks and treatments are both less than 5 in those two cases. Table 4.4 indicates the missing number under Outcome Evaluation and Documentation in relation to this.

Table 4.4 Compliance across hospitals

QUESTION	HOSPITAL							
	KCH	*RANK*	MCH	*RANK*	QECH	*RANK*	ZCH	*RANK*
Assessment								
1.1.1	0.880	*3.0*	0.820	*2.0*	0.780	*1.0*	0.900	*4.0*
1.1.2	0.900	*3.5*	0.820	*2.0*	0.780	*1.0*	0.900	*3.5*
1.1.3	0.300	*1.5*	0.520	*4.0*	0.300	*1.5*	0.380	*3.0*
1.1.4	0.260	*1.5*	0.420	*4.0*	0.260	*1.5*	0.380	*3.0*
1.2	0.720	*1.0*	0.740	*2.0*	0.820	*3.0*	0.840	*4.0*
1.3	0.680	*1.5*	0.680	*1.5*	0.820	*4.0*	0.780	*3.0*
1.4.1	0.720	*4.0*	0.640	*3.0*	0.440	*1.0*	0.500	*2.0*
1.4.2	0.660	*4.0*	0.620	*3.0*	0.400	*1.0*	0.500	*2.0*
1.5	0.760	*1.0*	0.780	*2.5*	0.800	*4.0*	0.780	*2.5*
1.6	0.740	*1.5*	0.800	*3.5*	0.800	*3.5*	0.740	*1.5*
Mean (T_g)	***0.662***	***22.5***	***0.684***	***27.5***	***0.620***	***21.5***	***0.670***	***28.5***
Planning								
2.1	0.440	*1.0*	0.560	*2.5*	0.700	*4.0*	0.560	*2.5*
2.2	0.420	*1.0*	0.540	*2.0*	0.680	*4.0*	0.560	*3.0*
2.3	0.500	*1.0*	0.540	*2.0*	0.720	*4.0*	0.560	*3.0*
2.4	0.400	*1.0*	0.460	*2.0*	0.680	*4.0*	0.480	*3.0*
2.5	0.660	*1.0*	0.780	*2.5*	0.780	*2.5*	0.820	*4.0*
2.6	0.620	*1.0*	0.780	*2.5*	0.780	*2.5*	0.840	*4.0*
2.7	0.400	*1.0*	0.540	*2.0*	0.600	*3.0*	0.620	*4.0*
2.8	0.420	*1.0*	0.560	*2.0*	0.600	*3.0*	0.620	*4.0*
Mean (T_g)	***0.483***	***8.0***	***0.595***	***17.5***	***0.693***	***27.0***	***0.633***	***27.5***
Implementation								
3.1	1.000	*2.5*	1.000	*2.5*	1.000	*2.5*	1.000	*2.5*
3.2	1.000	*2.5*	1.000	*2.5*	1.000	*2.5*	1.000	*2.5*
3.3	1.000	*2.5*	1.000	*2.5*	1.000	*2.5*	1.000	*2.5*
3.4	1.000	*2.5*	1.000	*2.5*	1.000	*2.5*	1.000	*2.5*
3.5	1.000	*2.5*	1.000	*2.5*	1.000	*2.5*	1.000	*2.5*
3.6	0.780	*2.5*	0.900	*4.0*	0.760	*1.0*	0.780	*2.5*
3.7	0.700	*1.0*	0.860	*4.0*	0.720	*2.0*	0.780	*3.0*
3.8	0.480	*1.0*	0.760	*3.0*	0.660	*2.0*	0.800	*4.0*
3.9.1	0.360	*1.0*	0.420	*2.5*	0.520	*4.0*	0.420	*2.5*
3.9.2	0.360	*1.0*	0.420	*2.5*	0.520	*4.0*	0.420	*2.5*
3.10.1	0.640	*4.0*	0.540	*2.0*	0.560	*3.0*	0.480	*1.0*
3.10.2	0.620	*4.0*	0.540	*2.0*	0.560	*3.0*	0.480	*1.0*
3.11.1	0.560	*2.0*	0.660	*3.5*	0.660	*3.5*	0.540	*1.0*
3.11.2	0.560	*2.0*	0.640	*4.0*	0.600	*3.0*	0.520	*1.0*
3.12.1	0.640	*2.0*	0.740	*3.0*	0.760	*4.0*	0.580	*1.0*
3.12.2	0.640	*2.0*	0.720	*4.0*	0.700	*3.0*	0.580	*1.0*

QUESTION	HOSPITAL							
	KCH	***RANK***	**MCH**	***RANK***	**QECH**	***RANK***	**ZCH**	***RANK***
3.13	0.480	*2.0*	0.500	*3.0*	0.600	*4.0*	0.320	*1.0*
3.14.1	0.660	*2.0*	0.700	*3.5*	0.700	*3.5*	0.480	*1.0*
3.14.2	0.620	*3.0*	0.600	*2.0*	0.640	*4.0*	0.440	*1.0*
3.15	0.920	*1.0*	0.940	*2.0*	0.980	*3.0*	1.000	*4.0*
3.16	0.600	*2.5*	0.620	*4.0*	0.600	*2.5*	0.380	*1.0*
Mean (T_g)	***0.696***	***45.5***	**0.741**	***61.5***	**0.740**	***62.0***	**0.667**	***41.0***
Outcome evaluation								
4.1	0.380		0.380		0.500		0.320	
4.2	0.340		0.320		0.540		0.300	
4.3	0.300		0.340		0.520		0.300	
4.4	0.260		0.340		0.460		0.300	
Mean (T_g)	***0.320***		***0.345***		***0.505***		***0.305***	
Documentation								
5.1	0.600		0.520		0.220		0.180	
5.2	0.320		0.280		0.080		0.140	
5.3	0.420		0.500		0.180		0.200	
Mean (T_g)	**0.447**		**0.433**		**0.160**		**0.173**	
Grand Total	**0.603**		**0.649**		**0.647**		**0.598**	

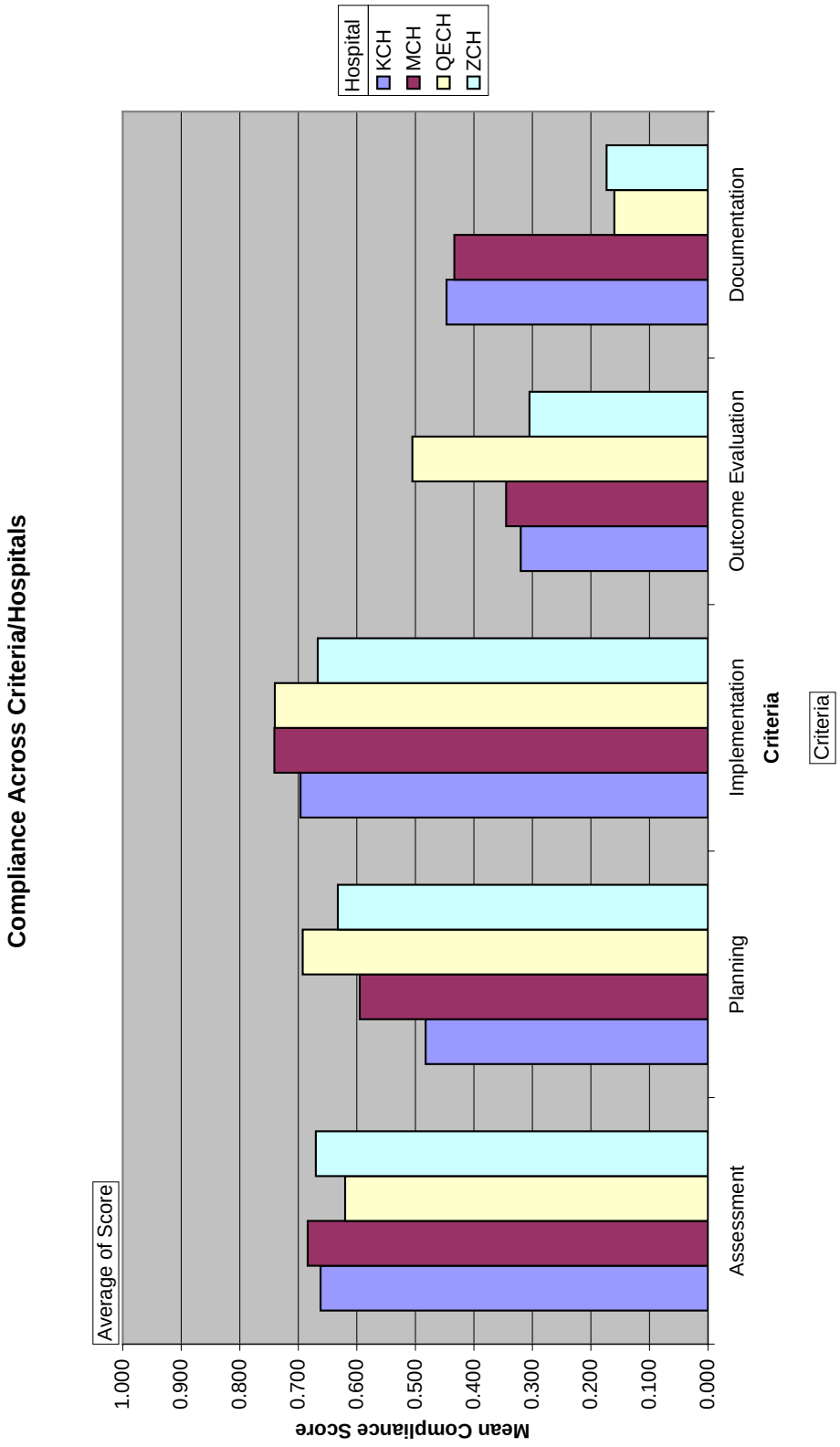

Figure 4.1 Compliance across criteria/hospitals

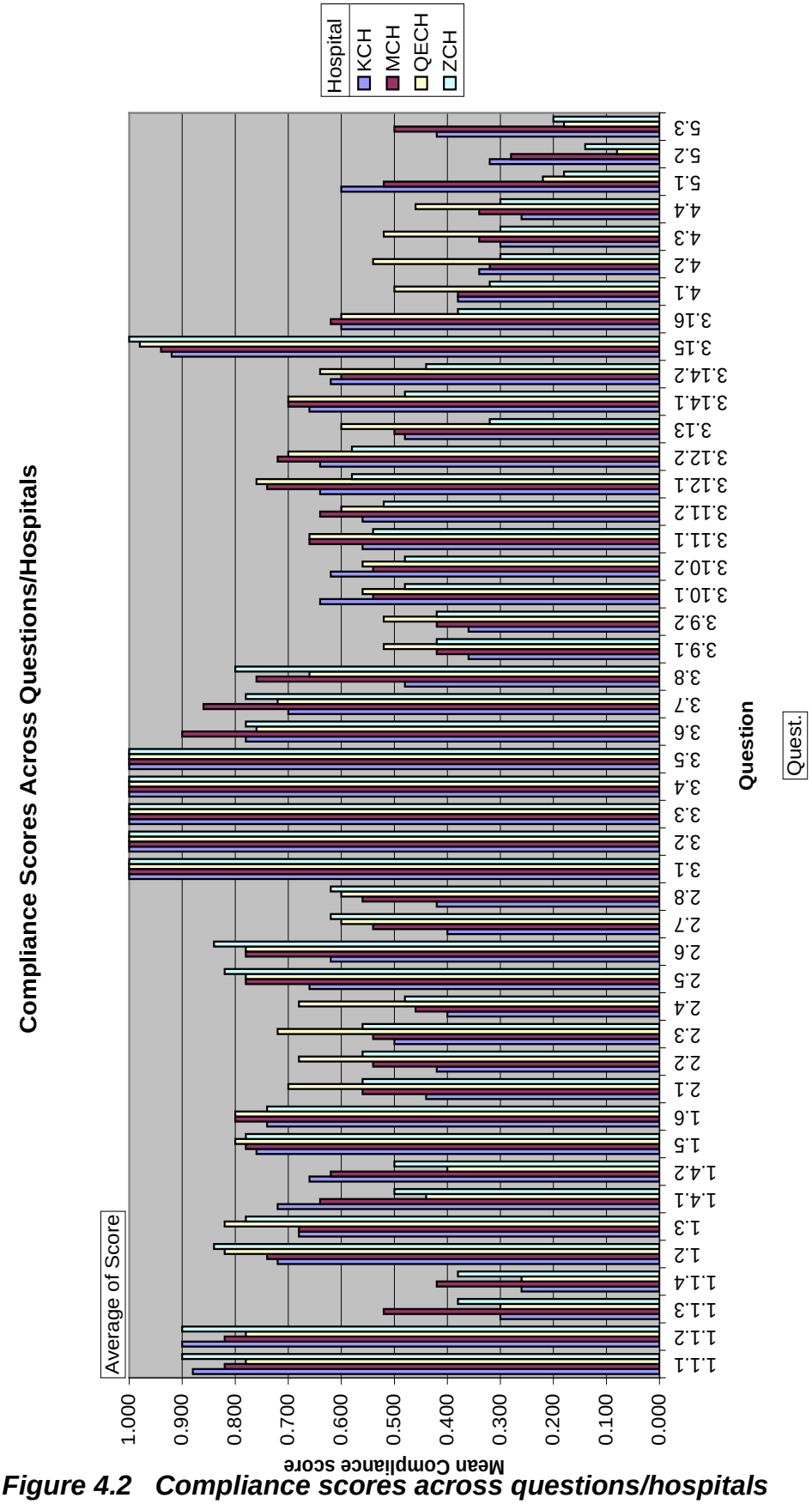

Figure 4.2 Compliance scores across questions/hospitals

Null hypothesis: The probability distributions of compliance scores with respect to the relevant criterion are identical across 4 hospitals (i.e. the SRNMs at the 4 different hospitals perform equally well at the relevant task (criterion)).

Alternative hypothesis: At least two of the probability distributions are different (i.e. the SRNMs do not perform equally well across hospitals at the relevant task).

Friedman Test for randomised block designs was done,
Test statistic:

$$\chi^2 = \frac{12}{nk(k+1)} \sum (T_g)^2 \; - 3n(k+1)$$

where,
n = number of blocks (questions)
k = number of treatments (hospitals)
T_g = sum of the ranks for the gth hospital, where the rank of each measurement is computed relative to the size of the mean within the block
Significance level: 5%
Rejection region: $\chi^2 > 7.81473$ (chi-squared value for k-1 = 3 degrees of freedom)

Conclusions

The following conclusions are drawn in relation to each standard except standard four and five (Outcome Evaluation and Documentation) since they could not compare the hospitals with respect to Outcome Evaluation and Documentation as the number of blocks and treatments are both less than 5 in those two cases.

For assessment,
$\chi^2 = 12 / (10*4*5) *(22.5^2 + 27.5^2 + 21.5^2 + 28.5^2) – (3*10*5) = 2.2$
which is less than the critical value. On the basis of the data in this study, the null hypothesis cannot be rejected (with respect to Assessment) at a 5% significance level. There is insufficient evidence to conclude that there is any difference in the level of Assessment compliance in the different hospitals. The p-value of this result is 0.528.

Assessment standard in participant observation indicated that 57 % (57) of the SRNMs at four central hospitals complied on making sure that data collection involved the patient, significant people e.g. relatives and health care providers where appropriate while 34% partially complied and 9% did not comply.

As regards SRNMs' assessment of different health related issues in order to get complete patient history, results from patient records analysis revealed higher compliance with making diagnosis based on assessment data (62%), reflection of critical thinking in analysis of data(61%), personal data assessment for complete patient's history(68%) and biosychosocial data assessment for complete patient history(69%). The findings revealed that non-compliance was high in terms of assessment of spiritual issues for complete client history, economic issues for complete client history, documenting data collection in logical manner, and making sure that data collection is documented in legible manner. This non-compliance by SRNMs in certain aspects of assessment standards of NMCM indicates that quality of professional practice by SRNM in Malawi was not of required set standards of NMCM and was inadequate. The NMCM is a statutory organization that was established in terms of the law and is responsible for the professional-ethical regulation of nursing and midwifery in Malawi. High quality of professional practice could have been achieved only by the SRNMs using every aspect of the set process standards to render quality and comprehensive care to patients. Set process standards are the backbone of nursing practice and they are the professional's key to excellence in practice.

For planning,

$\chi^2 = 12 / (8*4*5) *(8.0^2 + 17.5^2 + 27.0^2 + 27.5^2) – (3*8*5) = 19.1625$

which is significantly larger than the critical value. Therefore, the null hypothesis is rejected at a 5% significance level and concluded that there is a difference in the level of planning compliance in the different hospitals. The data in table 4.4 suggest that the level of planning compliance at QECH is higher than that at ZCH and MCH and substantially higher than that KCH. The p-value of this result is 0.000.

Findings from patient record analysis indicated that 64% (64) of the SRNMs complied with assigning and delegating tasks based on the knowledge and skills of the provider selected. Figure 4.3 shows SRNMs' planning practices. Most of the SRNMs complied

with individualising plans to patients (50%), developing the plan with the patient, significant others and health care providers when appropriate (49%), and documenting the plan (47%). Non-compliance in planning was somewhat high for making sure that factors related to safety, effectiveness and cost are considered utilising resources available and seeing to it that clients/significant others are assisted in identifying and utilising appropriate services available to address health related issues. As the state registered nurse midwives were not fully compliant with all aspects of planning standards of NMCM, quality of professional practice by SRNMs in Malawi was below the required standards of NMCM and was inadequate. High quality of professional practice could have been achieved only by the SRNMs using every aspect of the set process standards to render quality and comprehensive care to patients.

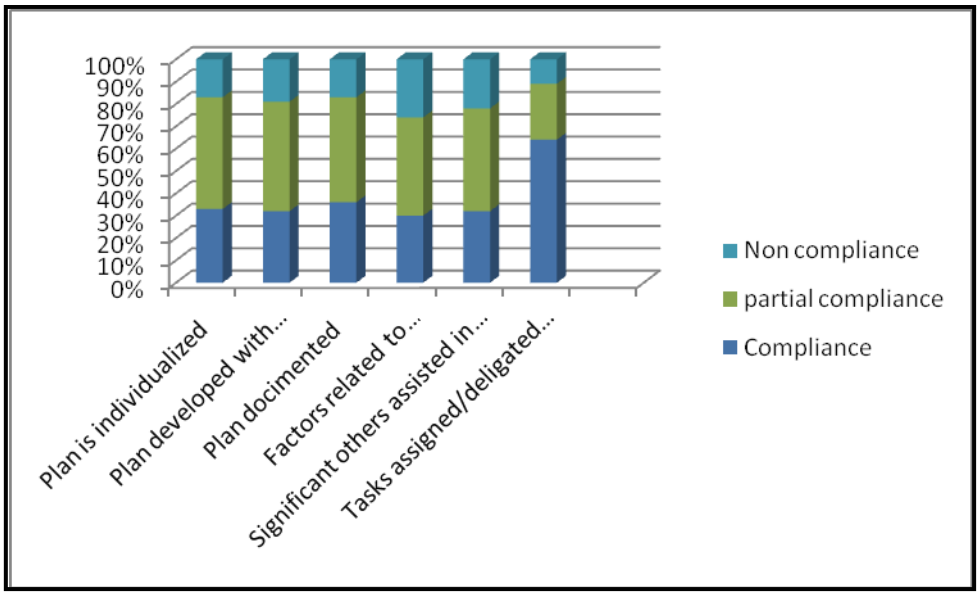

Figure 4.3 State registered nurse midwives' planning practices

For implementation,

$\chi^2 = 12 / (21*4*5) *(45.5^2 + 61.5^2 + 62.0^2+41.0^2) – (3*21*5) = 10.07143$

which is larger than the critical value. Again, the null hypothesis is rejected (with respect to Implementation) at a 5% significance level and concluded that there is a difference in the level of compliance in the different hospitals. MCH and QECH seem to have a

similar level of Implementation compliance, followed by KCH and lastly ZCH. The p-value of this result is 0.018.

SRNMs' implementation practices findings from participant observations showed that 100% compliance with implementing in a safe and appropriate manner; 100% (100) with evident communication with patient/significant others and other health care providers. However, results revealed partial and non- (less 50%) compliance (in each case) with sharp disposal containers availability, decontaminants availability, decontaminants use, and protective equipment availability (table 4.5). Practicing universal precautionary measures and availability of protective equipment were partially complied with. However, there was non-compliance with adequate equipment and supplies availability (51%). These findings that the state registered nurse midwives were not fully compliant with all aspects of standards of implementation by NMCM indicate that quality of professional practice by SRNMs in Malawi was below the required standards of NMCM and was inadequate.

Table 4.5 Implementation practices by state registered nurse midwives

Process Standards	Implementation	Rating for SRNM Practices		
	Compliance	Partial compliance	Non-compliance	Total
Research findings are utilised in the development of procedures and guidelines for patient/ client care	21 (21.2%)	48 (47.5%)	31 (31.3%)	100 (100%)
Guidelines are available	38 (38%)	32 (32%)	30 (30%)	100 (100%)
In-service education for infection prevention is strengthened	37 (37%)	33 (33%)	30 (30%)	100 (100%)
Sharp disposal containers are available	46 (46%)	29 (29%)	25 (25%)	100 (100%)

Sharp disposal containers are used	41 (41%)	31 (31%)	28 (28)%	100 (100%)
Decontaminants are available	48 (48%)	39 (39%)	13 (13%)	100 (100%)
Decontaminants are used	43 (43%)	44 (44%)	13 (13%)	100 (100%)
Adequate equipment and supplies are available	39 (39.4%)	10 (10.1%)	51 (50.5%)	100 (100%)
Protective equipment is available	46 (46%)	45 (45%)	19 (19%)	100 (100%)
Protective equipment is in working condition	40 (40%)	35 (35%)	25 (25%)	100 (100%)
Universal precautionary measures are practiced	46 (45.5%)	13 (13.1%)	41 (41.4%)	100 (100%)

Results from patient record analysis indicated that in the implementation stage of the SRNMs' practices there was 100% (100) compliance with being consistent about the established plan of care, as well as in intervention documentation and use of documentation skills in implementation of care.

Despite the outstanding performance as assessed using the above process standards, only 63% (63) of the patient records indicated that SRNMs made referrals for continuity of care while 26% (26) indicated partial compliance and 11% did not comply at all

(figure 4.4). This finding that there was partial compliance and non-compliance by SRNMs with regards to referrals for continuity of care indicates that quality of professional practice by SRNMs in Malawi was below the required standards of NMCM and was inadequate. Set process standards are the backbone of nursing practice and they are the professional's key to excellence in practice. Among the patient records analysed, 65% (65) also indicated that SRNMs substantiated interventions by research findings wherever possible.

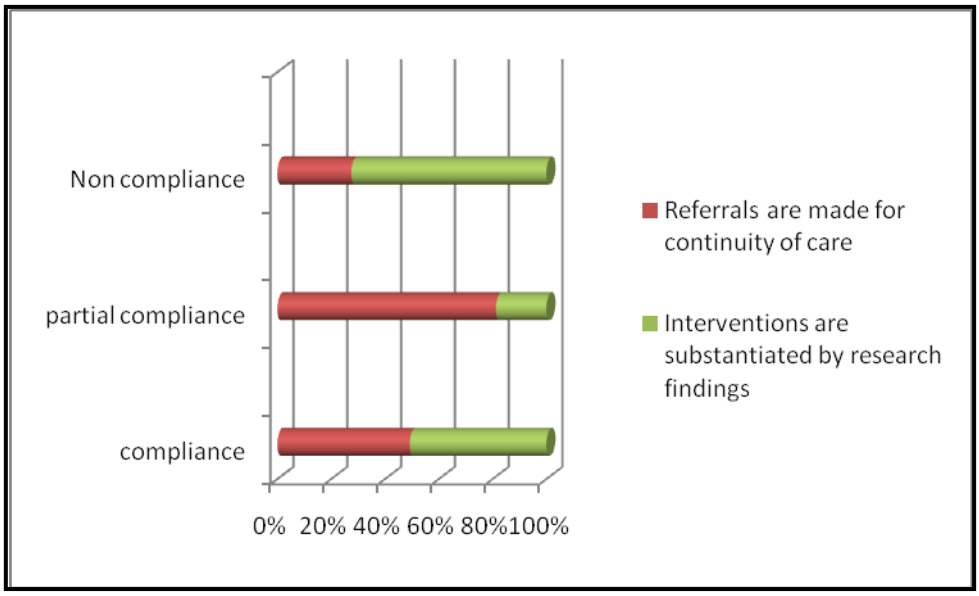

Figure 4.4 Implementation practices (patient record analysis)

Tests of associations were made using Pearson Chi-square to see whether study participants who developed care plans with patient, significant people e.g. relatives, and health care providers when appropriate made referrals for continuity of care (table 4.6). The findings indicated a high odds ratio and a p-value that was statistically significant (0.000). However, the confidence interval was very wide and this depicted a very weak relationship between the two variables. This indicated there was no association. The former variable did not influence the latter in any other way.

Making diagnosis based on assessment data and assessing personal data for complete patient history were also tested for association with making referrals for continuity of care. The former variable had similar results with the first test above and the latter test in this case indicated no association of any kind as the confidence interval included a 1.

Table 4.6 Referrals for continuity of care

Process standard		Made referrals for continuity of care (n=100)				
		Yes	No	Odds ratio	Confidence Interval	P=value
Developed plans with patient, significant others, and health care providers when appropriate	Yes	89 (89%)	11 (11%)	65.46	25.1, 178.08	0.000
	No	11 (11%)	89 (89%)			
Made diagnosis based on assessment data	Yes	89 (89%)	11 (11%)	65.46	25.01, 178.08	0.000
	No	11 (11%)	89 (89%)			
Assessed personal data for complete patient history	Yes	68 (68%)	32 (32%)	0.87	0.45, 1.66	0.645
	No	71 (71%)	29 (29%)			

SRNMs' post-operative care evaluation from patient record analysis revealed non-compliance with involving client, significant people like relatives and health care providers in the evaluation process (58%), non-compliance in evaluating effectiveness of interventions in relation to outcomes, non-compliance in using evaluation data to revise diagnosis, outcomes and plan of care as needed (56%). There was also non-compliance in making sure that effectiveness of interventions is evaluated in relation to outcomes (57%) and non-compliance in making systematic and on-going evaluation (54%). This non-compliance by SRNMs to these evaluation standards of NMCM indicates that quality of professional practice by SRNM in Malawi was not of required set standards of NMCM and was inadequate. High quality of professional practice could

have been achieved by the SRNMs using every aspect of the set process standards to render quality and comprehensive care to patients.

Tests of associations were also made using Pearson Chi-square to see if the SRNMs who developed plans with patient, significant people like relatives and health care providers when appropriate involved client, patient, significant people like relatives and health care providers in the evaluation process. The results indicated that the SRNMs who did that were 5.99 times more likely to do so. The confidence interval did not include a 1 and the p-value was 0.000 (table 4.7). This revealed a strong association between developing plan with patient, other significant people and health care providers when appropriate and involvement of client, patient, other significant people and health care providers in the evaluation process. The results revealed a statistically significant relationship.

Table 4.7 State registered nurse midwife's involvement of clients, patients, other significant people and health care providers in the evaluation process

Process standard			Involved the client, patient, significant others and health care providers in the evaluation process (n=100)			
Developed plans with patient, other significant people , and health care providers when appropriate		Yes	No	Odds ratio	Confidence Interval	P=value
	Yes	71 (71%)	29 (29%)	5.99	3.12, 11.60	0.000
	No	29 (29%)	71 (71%)			
Made diagnosis based on assessment data	Yes	32 (32%)	68 (68%)	0.77	0.41, 1.43	0.3737
	No	68 (68%)	32 (32%)			
Assessed personal data for complete patient history	Yes	32 (32%)	68 (68%)	0.22	0.12, 0.42	0.000
	No	67 (68%)	32 (32%)			

Associations were tested between development of plans with patient, other significant people and health care providers when appropriate with SRNMS making systematic and on-going evaluation of patient's care (table 4.8). The results revealed no statistically significant relationship between the two variables since the confidence interval included a 1 and the p-value was above the cut-off point of 0.05. Making diagnosis based on assessment data and assessing personal data for complete patient history did not show any association because the confidence intervals for each test included a 1.

Table 4.8 Systematic and on-going evaluation of patient's condition

Process standard			Made systematic and on-going evaluation (n=100)			
Developed plans		Yes	No	Odds ratio	Confidence Interval	P=value
with patient, significant others, and health care providers when appropriate	Yes	46 (46%)	54 (54%)	0.73	0.40,1.31	0.2578
	No	54 (54%)	46 (46%)			
Made diagnosis based on assessment data	Yes	32 (32%)	68 (68%)	0.22	0.12, 0.42	0.000
	No	68 (68%)	32 (32%)			
Assessed personal data for complete patient history	Yes	32 (32%)	68 (68%)	0.22	0.12,0.42	0.000
	No	68 (68%)	32 (32%)			

Development of plans with patient, other significant people and health care providers when appropriate was also tested for association with SRNM's evaluation of effectiveness of care in relation to outcome. The results of the test indicated that SRNMs who did so were 0.57 times likely to evaluate effectiveness of care in relation to outcome (table 4.9). The p-value was 0.047 which is below the cut off point of 0.05. However, the confidence interval included a 1 and this revealed that the result of the test was not statistically significant, hence no relationship between the two variables.

Making diagnosis based on assessment data and assessing personal data for complete patient history did not show any association as manifested by confidence intervals that included a 1 and the p-value also was above a cut-off point of 0.05.

Table 4.9 State registered nurse midwife's evaluation of effectiveness of care in relation to outcome

Process standard			Evaluated effectiveness of care in relation to outcome (n=100)			
Developed plans		Yes	No	Odds ratio	Confidence Interval	P=value
with patient, other significant people, and health care providers when appropriate	Yes	43 (43%)	57 (57%)	0.57	0.31, 1.03	0.0477
	No	57 (57%)	43 (43%)			
Made diagnosis based on assessment data	Yes	32 (32%)	68 (68%)	0.22	0.12, 0.42	0.000
	No	68 (68%)	32 (32%)			
Assessed personal data for complete patient history	Yes	43 (43%)	57 (57%)	0.57	0.31, 1.03	0.0477
	No	57 (57%)	43 (43%)			

With regards to SRNMs documentation practices in the documentation process, results from patient record analysis revealed non-compliance in making sure the records are legible and that they precisely depict comprehensiveness (74%), see figure 4.5 below. Non-compliance was also high for documentation of evidence at each step of nursing process and indicating signature (s) of the implementers of the care. As non-compliance to documentation by the state registered nurse midwives was high, quality of professional practice by SRNM in Malawi was below the required standards of NMCM and was inadequate.

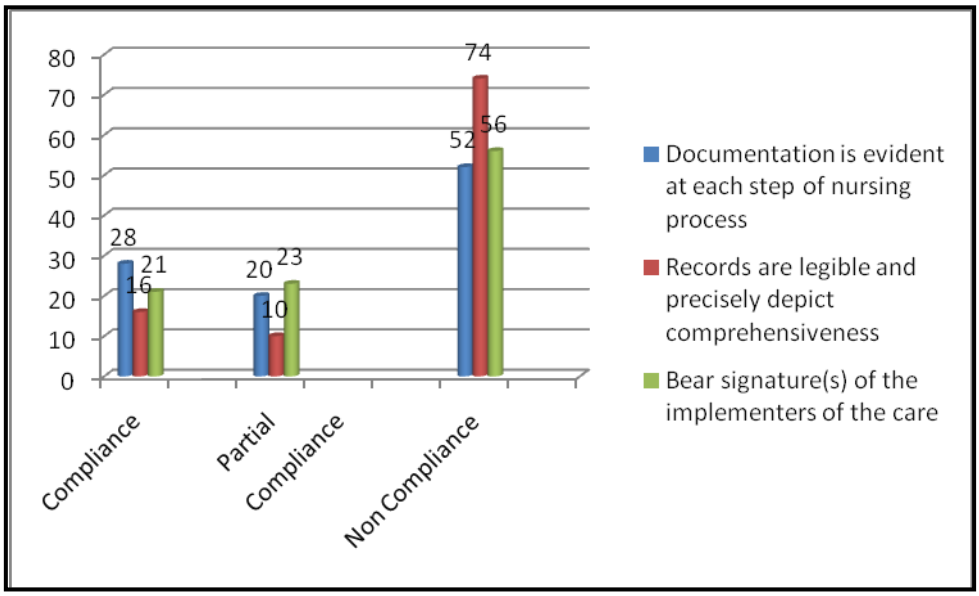

Figure 4.5 Documentation practices

4.5 DISCUSSION OF FINDINGS

The general picture of the quality of nursing care in the central hospitals indicated that SRNMs paid more attention to the physical aspects of patient care compared to the psychological ones. This is manifested by high non-compliance with process standard aspects including SRNMs' assessment of spiritual and economic issues for completed patient history. This practice seems to follow Lewis et al's statement that when setting priorities in patient care, physical needs should be addressed before psychological needs (Lewis et al 2007:12).

Lack of balance between treatment of the physical and the psychological can result in compromised quality of post-laparotomy care. This situation demands the need to balance the psychological and physical need of post-laparotomy care even in the assessment stage of the process standards.

The high non-compliance for cultural sensitivity also affected quality of laparotomy care in the public central hospitals. Patients come from different cultural backgrounds. The illnesses and sicknesses they present are the outcomes of various factors including the spiritual, cultural and social aspects of the communities they come from.

Post-laparotomy care cannot be appreciated if SRNMs do not properly handle the above backgrounds. Patient cultures constitute a significant proportion of the challenges the patients face, as such treatments and any nursing care needs to take such aspects into consideration. This should remind the SRNMs not to treat the physical aspects alone but also the related psychological aspects.

The study revealed a high level of misunderstanding between the SRNMs and the patients. The SRNMs reported that they included the patient, other significant people and the health care providers when planning for patient's care. The SRNMs gave satisfactory reasons why they included all the above groups. They clearly mentioned that it was for respect for human right as every person has a right to participate in planning for the care they shall receive. However, the two sides do not seem to have communicated adequately in the process. This also led to care that was not appreciated by the patients.

The gap in understanding the quality of care between the SRNMs and the post-laparotomy patients' demands need for interpersonal communication between care giver and the patient in the process. In this case, SRNMs did the right thing with the right intentions but the patients did not realise it. This gap led to compromised quality of care as perceived by the patients.

Although the study revealed poor interpersonal communication between SRNMs and patients as one of the factors affecting post-operative quality of care, to some extent SRNMs complied with implementing in safe and appropriate manner.

Quality of laparotomy care was somewhat compromised by level of disposal containers availability, decontaminants inadequate availability, and inadequate availability and use of protective equipment in the central hospitals. This situation could be addressed by injecting financial resources for procurement. This is important because the SRNMs cannot maintain good quality care for patients in the absence of required facilities. Availability of facilities is a very important and crucial hospital characteristic that has to be addressed if a SRNM is to provide high quality care.

Failure to provide good quality nursing care because of unavailable resources is supported by Donabedian's model of structure (having the right things), Rafferty et al (2005). In the absence of right things to use, no high quality post-laparotomy care should be expected. Donabedian's model suggests that nursing care quality is a product of structure and process; which in the case of this study are in contradiction (there were no adequately available supplies and equipment).

Quality of post-laparotomy care was compromised by the fact that the SRNMs did not make referrals for continuity of care. Continuity of care is a very important aspect for the treatment of the patient's situation as patients are handled by different care providers. If there is no available information about the patient situation between care givers then quality of care is likely to be compromised since the SRNMs cannot know what has been done already and the next right thing to be done to the patient. This can be addressed by making sure that the supervisors of SRNMs emphasise on record keeping.

The situation in the central hospitals in Malawi indicated that record keeping, which has been pointed out as a forgotten skill even in the United Kingdom (Rodden & Bell 2002) also continues to be a factor resulting in poor quality post-laparotomy care in the central hospitals in Malawi.

Heavy workloads among the SRNMs also affected the quality of post-laparotomy care in the public central hospitals. The situation reflected the common experiences in the United States as pointed out by Aiken et al (2002) where increase in workload among the SRNMs contributed to high mortality among patients; a manifestation of compromised nursing care quality. The workload for the SRNMs in all the central

hospitals during the study period was heavy. There were not enough SRNMs on the wards. The ratio of SRNMs to patients in the wards in the four central hospitals was 1 to 75 when the study was carried out. This influenced the quality of care given to post-laparotomy patients by the SRNMs hence quality of professional practice of SRNMs. The quality of professional practice by SRNMs in Malawi was below the required standards of NMCM and was inadequate. There was less than full compliance with the NMCM standards by SRNMs on all the criteria except criteria 3.1 to 3.5 and 3.15 on implementation standard.

The issue of heavy workload was probably one of the factors that contributed to inadequate or non-evaluation of patient's condition and care as the SRNM could not have enough time to do so despite their knowledge of why evaluation of patient's care was important. This is an unfortunate situation because the patients actually noted that they had not been involved in the evaluation (which in actual fact was not done). Unless the issues of workload are sorted out through reducing the SRNM-patient ratios, the quality of post-laparotomy care in the central hospitals will remain compromised.

The study revealed the importance of the SRNMs developing care plans with patients, other significant people and health care providers as this led to their involvement in the evaluation process. This means that supervising for comprehensive procedures in the process standards could improve the quality of post-operative care in the central hospitals. It also revealed high non-compliance with the appropriate documentation procedures. This is a challenge even for other researchers' evaluation of the care the central hospitals give to patients.

The largest problem in the process of giving good quality care is non-communication between the SRNMs and the patients. This has been clear at almost every process standard as SRNMs report one thing and the post-laparotomy care clients see things the different way. This means that the supervisors of SRNMs need to find ways of making SRNMs and post-laparotomy care patients understand one another at every stage of process standards. In other words, SRNMs need to slow down and give slightly more time to explaining the important aspects at each stage during the care process.

Paying attention to patient need could provide solutions to quality of post-laparotomy care in the central hospitals in Malawi. All that notwithstanding, facilities, workload, and motivation for nursing care have to be considered if the situation was to improve.

4.6 CONCLUSION

This chapter dealt with the purpose of data analysis, how the researcher and the research assistants entered the hospitals to collect data, the sample and instrument used. The statistical results related to the five process standards used to evaluate the type of care provided by the state registered nurse midwife, namely assessment, planning, implementation, evaluation and documentation were discussed.

CHAPTER 5

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

The aim of this study was to evaluate the quality of professional practice by SRNM based on the set process standards of the NMCM (2005a). The hypothesis for this study was that the quality of professional practice by the state registered nurse midwife as reflected in clinical nursing care of post-laparotomy patients in public central hospitals in Malawi is inadequate and non-compliant with the process standards set by the NMCM. This chapter provides summary conclusions and recommendations.

5.2 SUMMARY

The NMCM is a statutory organization that was established in terms of the law and is responsible for the professional-ethical regulation of nursing and midwifery in Malawi. This assumption, Virginia Henderson theory, NMCM set process standards and the nursing process guided this study. The evaluation tool was developed by the researcher under the guidance of the supervisor.

SRNMs performed better in Assessment, Planning and Implementation than they did in Outcome Evaluation and Documentation. Outcome evaluation is essential if any treatment implemented has had an effect on the patient's condition. Most problems can be treated more easily at the Outcome Evaluation stage than after they have recurred following a premature discharge. Treating returning patients will cost more resources in terms of nursing material, time and staffing. It would be very interesting to analyse data on returning patients and the quality of outcome evaluation that the patients received before they were discharged the first time. Unfortunately, the public central hospitals do not collect that information.

Secondly, while documentation might not seem as critical, it allows hospital staff to share information about patients. Information sharing can help reduce duplication and thereby reduce the amount of workload and time spent on diagnosing illnesses that

have been previously been identified by the other nursing staff. It also protects hospital staff against unforeseeable legal claims. Furthermore, documentation is a legal requirement. In most cases hospital documents have to be kept for a specified period before they are destroyed. With the number of lawsuits and patient complaints having increased considerably over the past few years, it is more important than ever that proper documentation is kept (Trenoweth 2007:21). The time spent by SRNM answering lawsuits and patient complaints is worth any time savings that might have initially been made when the SRNM did not properly follow through on the nursing process.

5.3 CONCLUSION

The study came to the conclusion that there is less than full compliance with the NMCM standards by SRNMs on all the criteria except criteria 3.1 to 3.5 and 3.15 on implementation standard (in respective order: consistency with the established plan of care; Implementation carried out in a safe and appropriate manner; implementation stage properly documented; decision making skills reflected in the implementation of care; communication with the client/patient/significant others and other health care providers evident; and finally, syringes and needles not reused).

5.4 CONTRIBUTIONS OF THIS STUDY

This study has contributed to the development of a tool to evaluate the set process standards in clinical nursing care of post-laparotomy patients by SRNMs in Malawi.

5.5 LIMITATIONS

The study was limited to post-laparotomy patients in public central hospitals in Malawi. Therefore, the results of this study cannot be generalized to other settings.

5.6 RECOMMENDATIONS

In order to raise the quality of care to an acceptable level and to keep it at that level, it is recommended that the Malawi health department, SRNMs and the NMCM do several things.

To the nursing services in Malawi

The Malawi Department of Health and the NMCM should see to it that:

- Standards are enforced and used to ensure quality of care by SRNM
- The number of SRNMs graduating from nursing colleges increase in the country by, for example, providing tuition grants.
- The SRNMs within public service in Malawi should be retained. Remuneration and benefits for SRNMs should be at a level that is attractive enough to convince SRNMs to stay in the public service. The government has to break the vicious circle of high staff turnover.

To the nursing education in Malawi

- Introduce training sessions on nursing care plans and its importance.
- Improve the audit of nursing care and provide a framework of knowledge sharing between the public central hospitals.
- Student curriculum should be informed and assessed based on the set standards.

5.7 FURTHER RESEARCH

- It is recommended that further research be conducted on compliance with set process standards by SRNMs in other areas of specialisation for example medical nursing.
- It is also recommended that further research be conducted on the perceptions of the patients/clients about the care received from the SRNMs as reflected in clinical care of post-laparotomy patients.

5.8 CONCLUDING REMARKS

In this chapter the conclusions, limitations and recommendations of the study were discussed. The hypothesis for this study was supported by the results that there is less than full compliance with the NMCM standards by SRNMs on all the criteria except criteria 3.1 to 3.5 and 3.15 on implementation standard. The quality of professional

practice by the SRNMs in public central hospitals in Malawi showed a level of partial compliance hence the quality of professional practice by SRNM in Malawi was not of required set standards of NMCM in some aspects. The SRNM in the country should utilise the set process standards to render quality and comprehensive care. With respect to standards on evaluation and documentation, there was a lower level of compliance than with the standards of assessment, planning and implementation. There is thus a need for the clinical in-service providers to update the SRNMs providing care to post-laparotomy patients on the nursing process, in order to help the SRNMs to acquire knowledge and skills which will make them efficient in rendering quality clinical nursing care to such patients. The contribution of the study is the development of an evaluation tool on the set process standards by the NMCM.

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ANNEXURE I

Process standards instrument

ANNEXURE II

Clearance certificate from the Department of Health Studies, UNISA Research and Ethics Committee to carry out research

ANNEXURE III

Application letter for permission to Ministry of Health and Population Ethics and Science Committee

ANNEXURE IV

Application letter and letter granting permission to conduct a research study at Kamuzu Central Hospital

ANNEXURE V

Application letter and letter granting permission to conduct a research study at Mzuzu Central Hospital

ANNEXURE VI

Application letter and letter granting permission to conduct a research study at Queen Elizabeth Central Hospital

ANNEXURE VII

Application letter and letter granting permission to conduct a research study at Zomba Central Hospital

Annexure I

PROCESS STANDARDS

As set by Nurses and Midwives Council of Malawi (NMCM)

The state registered nurse midwife uses the nursing midwifery management process to provide safe and competent nursing midwifery care.

STANDARD 1 ASSESSMENT

The state registered nurse midwife collects pertinent, accurate and comprehensive client/patient data based on nursing and other relevant sciences.

MEASUREMENT CRITERIA	**Data collection strategies**	**Compliance 1.00**	**Partial compliance 0.5**	**Non-Compliance 0.00**
1.1 Complete client/patient history :- 1.1.1 Personal 1.1.2 Bio-psychosocial 1.1.3 Economical 1.1.4 Spiritual	Patient record analysis			
1.2 Complete systematic physical assessment (head to toe) is performed	Observe actual assessment			
1.3 Data collection involves the clients/patients, significant others and health care providers where appropriate	Patient record and participant observations			
1.4 Data collection documented in:- 1.4.1 logical manner 1.4.2 legible manner	Patient record analysis			
1.5 Critical thinking skills are reflected in the analysis of data	Patient record analysis			
1.6 Diagnoses are made based on 1.6.1 assessment data, 1.6.2 validated with the client (the patient reported) 1.6.3 significant others (the relative reported) and 1.6.4 health care providers where possible 1.6.4 and documented based on priority	Patient record analysis			

STANDARD 2 PLANNING

a) The state registered nurse midwife develops the plan of care that outlines actual and potential problems, goals of care and prescribes interventions to attain expected outcomes.

MEASUREMENT CRITERIA	**Data collection strategies**	**Compliance 1.00**	**Partial compliance 0.5**	**Non compliance 0.00**
The plan: 2.1 Is individualised to the clients/patients	Patient record analysis			
2.2 Is developed with the client/patient, significant others and health care providers when appropriate	Patient record analysis			
2.3 Is documented	Patient record analysis			
2.4 Reflects cultural sensitivity- taking into consideration patient ways of doing things	Participants observations patient record analysis			

b) The state registered nurse midwife considers factors related to safety, effectiveness and cost in planning and delivering client/patient care.

MEASUREMENT CRITERIA	**Data collection strategies**	**Compliance 1.00**	**Partial compliance 0.5**	**Non compliance 0.00**
2.5 Tasks are assigned or delegated based on: the need of the client	Participant observation & record analysis			
2.6 The knowledge and skills of the provider selected	Patient record/ delegation book analysis			
2.7 Factors related to safety, effectiveness and cost are considered utilizing resources available	Patient record analysis			
2.8 The client/patient/significant others are assisted in identifying and utilizing appropriate services available to address health related issues	Patient record analysis			

STANDARD 3 IMPLEMENTATION

a) The state registered nurse midwife safely implements the interventions identified in the plan of care independently, dependently and in collaboration with clients/patients, significant others and other health care team members.

MEASUREMENT CRITERIA	**Data collection strategies**	**Compliance 1.00**	**Partial compliance 0.5**	**Non compliance 0.00**
Interventions are: 3.1 Consistent with the established plan of care	Patient record analysis			
3.2 Implemented in a safe and appropriate manner: eg How vital data were taken When patient was propped up Giving of pain killers Opening dressing for the first time	Patient observation/ participant observation			
3.3 Documented	Patient record analysis			
3.4 Decision-making skills are reflected in the implementation of care	Patient record analysis			
3.5 Communication with the client/patient/significant others and other health care providers is evident	Participant observation/ patient record analysis			
3.6 Consultation with health care providers and other stake holders for client/patient care is done	Patient record analysis			
3.7 Referrals are made for continuity of care	Patient record analysis			

b) The state registered nurse midwife utilizes research findings in practice

3.8 Interventions are substantiated by research findings wherever possible - what's new on protocols	Patient record analysis/ protocol analysis			
3.9 Research findings are utilized in the development of:- 3.9.1 policies 3.9.2 procedures and guidelines for client/patient care	Policy analysis			

c) The state registered nurse midwife applies infection prevention measures in providing care to patients/client

MEASUREMENT CRITERIA	**Data collection strategies**	**Compliance 1.00**	**Partial compliance 0.05**	**non-compliance 0.00**
3.10 Guidelines are: 3.10.1 available 3.10.2 in-service education for infection prevention is strengthened	Participant observation/ health education & staff development record analysis			
3.11 Sharp disposal containers are:- 3.11.1 available 3.11.2 used	Participant observation			
3.12 Decontaminants are:- 3.12.1 available 3.12.2 used	Participant observation			
3.13 Adequate equipment and supplies are available	Participant observation			
3.14 Protective equipment i :- 3.14.1 available 3.14.2 in working condition	Participant observation			
3.15 Syringes and needles are not reused/recapped/disposed properly	Participant observation			
3.16 Universal precaution measures are practiced	Participant observation			

STANDARD 4 EVALUATION OF OUTCOME OF CARE

The state registered nurse midwife evaluates the goals of care

MEASUREMENT CRITERIA	Data collection Strategies	Compliance 1.00	Partial compliance 0.5	Non compliance 0.00
4.1 Evaluation is systematic and on going	Patient record analysis			
4.2 The effectiveness of interventions is evaluated in relation to outcomes	Patient record analysis			
4.3 Evaluation data is used to revise diagnoses, outcomes and plan of care as needed	Patient record analysis			
4.4 The client/patient, significant others and the health care providers are involved in the evaluation process	Patient record analysis			

STANDARD 5 DOCUMENTATION

The state registered nurse midwife documents data related to the process of giving care at each step of the nursing process in a manner which facilitates information giving to other health team members and for continuity of care

MEASUREMENT CRITERIA	Data collection strategies	Compliance 1.00	Partial compliance 0.5	Non compliance 0.00
5.1 Documentation is evident at each step of the nursing process	Patient record analysis			
5.2 Records are legible and concisely depict comprehensiveness	Patient record analysis			
5.3 Bear signature(s) of the implementer(s) of the care	Patient record analysis			

UNIVERSITY OF SOUTH AFRICA
Health Studies Research & Ethics Committee
(HSREC)
College of Human Sciences

CLEARANCE CERTIFICATE

Date of meeting: **21 April 2008** Project No: **0825-103-7**

Project Title: **The Quality of professional practice by registered nurses and midwives in Malawi**

Researcher: **ES Lengu**

Supervisor/Promoter: **Dr BL Dolamo**

Joint Supervisor/Joint Promoter:

Department: **Health Studies**

Degree: **MA Cur**

DECISION OF COMMITTEE

Approved [√] **Conditionally Approved** [ ]

Date: **7 May 2008**

Prof L de Villiers
RESEARCH COORDINATOR: DEPARTMENT OF HEALTH STUDIES

Prof SM Mogotlane
ACADEMIC CHAIRPERSON: DEPARTMENT OF HEALTH STUDIES

PLEASE QUOTE THE PROJECT NUMBER IN ALL ENQUIRES

Annexure III

Kamuzu College of Nursing
Private Bag 1
Lilongwe
2008

The Chairman
Research and Ethics Committee
Ministry of Health and Population
PO Box 30377
Capital City
Lilongwe 3

Dear Sir/Madam

REQUEST FOR PERMISSION TO CONDUCT A RESEARCH STUDY AT YOUR INSTITUTIONS

I write to request a permission to conduct a research study at Mzuzu Central Hospital, Kamuzu Central Hospital, Queen Elizabeth Central Hospital and Zomba Central hospital. The title of the research chosen is: The quality of professional practice by the registered nurses and midwives in Central hospitals in Malawi. The study will evaluate the quality of professional practice whether or not it is in compliance with the Nurses and Midwives Council of Malawi set standards by the State Registered Nurses/Midwives of Malawi.

The sample is requested from the population of State Registered Nurses and Midwives at the central hospitals that provide care to adult surgical post laparotomy patients.

The study is a requirement for the Masters degree in Health Studies at University of South Africa.

I trust my request will be considered.

Yours faithfully

Edoly Shirley Lengu (Mrs)

Contact details: Cell: 26509511650
Fax: 26501756424
Email: shirleylengu@kcn.unima.mw

Annexure IV

Kamuzu College of Nursing
Private Bag 1
Lilongwe
2008

The Director
Kamuzu Central Hospital
PO Box 149
Lilongwe

Dear Sir/Madam

REQUEST FOR PERMISSION TO DO PILOT STUDY AT YOUR INSTITUTION

I write to request a permission to conduct a pilot study at Kamuzu Central Hospital. The title of the research chosen is: The quality of professional practice by the registered nurses and midwives at Central hospitals in Malawi. The study will evaluate the quality of professional practice in compliance with Nurses and Midwives Council of Malawi set standards. It forms part of a larger study that evaluates the same in other central hospitals in Malawi.

The sample is requested from the population of State Registered Nurses and Midwives at Kamuzu Central Hospital that provide care to adult surgical post laparotomy patients.

The study is a requirement for the Masters degree in Health Studies at University of South Africa.

I trust my request will be considered.

Yours faithfully

Edoly Shirley Lengu (Mrs)

Contact details: Cell: 26509511650
Fax: 26501756424
Email: shirleylengu@kcn.unima.mw

Annexure V

Kamuzu College of Nursing
Private Bag 1
Lilongwe
2008

The Director
Mzuzu Central Hospital
Private Bag 202
Mzuzu

Dear Sir/Madam

REQUEST FOR PERMISSION TO DO RESEARCH STUDY AT YOUR INSTITUTION

I write to request a permission to conduct a research study at Mzuzu Central Hospital. The title of the research chosen is: The quality of professional practice by the registered nurses and midwives in Central hospitals in Malawi. The study will evaluate the quality of professional practice in compliance with Nurses and Midwives Council of Malawi set standards by the State Registered Nurse/Midwife in Malawi.

The sample is requested from the population of State Registered Nurses and Midwives at Mzuzu Central Hospital that provide care to adult surgical post laparotomy patients.

The study is a requirement for the Masters degree in Health Studies at University of South Africa.

I trust my request will be considered.

Yours faithfully

Edoly Shirley Lengu (Mrs)

Contact details: Cell: 26509511650
Fax: 26501756424
Email: shirleylengu@kcn.unima.mw

Annexure VI

Kamuzu College of Nursing
Private Bag 1
Lilongwe
2008

The Director
Queen Elizabeth Central Hospital
PO Box 95
Blantyre

Dear Sir/Madam

REQUEST FOR PERMISSION TO DO RESEARCH STUDY AT YOUR INSTITUTION

I write to request a permission to conduct a research study at Queen Elizabeth Central Hospital. The title of the research chosen is: The quality of professional practice by the registered nurses and midwives in Central hospitals in Malawi. The study will evaluate the quality of professional practice in compliance with Nurses and Midwives Council of Malawi set standards by the State Registered Nurse/Midwife in Malawi.

The sample is requested from the population of State Registered Nurses and Midwives at Queen Elizabeth Central Hospital that provide care to adult surgical post laparotomy patients.

The study is a requirement for the Masters degree in Health Studies at University of South Africa.

I trust my request will be considered.

Yours faithfully

Edoly Shirley Lengu (Mrs)

Contact details: Cell: 26509511650
Fax: 26501756424
Email: shirleylengu@kcn.unima.mw

Annexure VII

Kamuzu College of Nursing
Private Bag 1
Lilongwe
2008

The Director
Zomba Central Hospital
PO Box 21
Zomba

Dear Sir/Madam

REQUEST FOR PERMISSION TO DO RESEARCH STUDY AT YOUR INSTITUTION

I write to request a permission to conduct a research study at Zomba Central Hospital. The title of the research chosen is: The quality of professional practice by the registered nurses and midwives in Central hospitals in Malawi. The study will evaluate the quality of professional practice in compliance with Nurses and Midwives Council of Malawi set standards by the State Registered Nurse/Midwife in Malawi.

The sample is requested from the population of State Registered Nurses and Midwives at Zomba Central Hospital that provide care to adult surgical post laparotomy patients.

The study is a requirement for the Masters degree in Health Studies at University of South Africa.

I trust my request will be considered.

Yours faithfully

Edoly Shirley Lengu (Mrs)

Contact details: Cell: 26509511650
Fax: 26501756424
Email: shirleylengu@kcn.unima.mw

REF. NO.
TELEPHONE NO.: (265) 1 753 555/754 331
TELE FAX O.: (265) 1 756 380

PLEASE ADDRESS ALL COMMUNICATIONS TO :
THE HOSPITAL DIRECTOR
E-MAIL: lch@sdnp.org.mw OR hosdir@malawi.net

MINISTRY OF HEALTH
KAMUZU CENTRAL HOSPITAL
P. O. BOX 149
LILONGWE

REF.NO.KCH/C1/RES/ 28th July 2008

Edoly Shirley Lengu (Mrs.)
Kamuzu College of Nursing
Private Bag 1
LILONGWE

Dear Madam,

PERMISSION TO USE KAMUZU CENTRAL HOSPITAL AS A SITE FOR RESEARCH STUDY

I am pleased to inform you that permission has been granted for you to conduct your research study at Kamuzu Central Hospital. The title of the research is "The Quality of Professional Practice by the Registered Nurses and Midwives in Malawi."

We would be pleased to know the results of the study.

Best regards,

KAMUZU CENTRAL HOSPITAL
DIRECTOR
29 JUL 2008
P.O. BOX 149
LILONGWE

pp. Dr. H. Juma
HOSPITAL DIRECTOR

REF. NO.
TELEPHONE NO.: (265) 320 217/ 333 911
TELE FAX NO.: (265) 334 270

PLEASE ADDRESS ALL
COMMUNICATIONS TO: THE
HOSPITAL DIRECTOR
E-MAIL: directormch@malawi.net

MINISTRY OF HEALTH
MZUZU CENTRAL HOSPITAL
PRIVATE BAG 202
MZUZU
MALAWI

24th July, 2008

Mrs Edoly S. Lengu,
Kamuzu College of Nursing
P/ Bag 1
Lilongwe

Dear Madam,

PERMISSION TO USE MZUZU CENTRAL HOSPITAL FOR A RESEARCH STUDY

Your request to use Mzuzu Central Hospital as a site for your research study has been accepted. The title of the research is, "The Quality of Professional Practice by the Registered Nurses and Midwives in Central Hospitals in Malawi."

We would appreciate to know the results of the study.

Kind regards,

K Banda

PP Dr. B. Khosa,
Ag. HOSPITAL DIRECTOR.

Telephone: (+265) 01 674 333/671823
Facsimile: (+265) 01674 516
Email: qech@qech.mw.com

All Communications should be addressed to:
The Director

In reply please quote No:

MINISTRY OF HEALTH
QUEEN ELIZABETH CENTRAL HOSPITAL
P.O. BOX 95
BLANTYRE
MALAWI
22 July, 2008.

Edoly Shirley Lengu (Mrs)
Kamuzu College of Nursing
P/ Bag 1
Lilongwe

Dear Madam,

PERMISSION TO USE QUEEN ELIZABETH CENTRAL HOSPITAL FOR A RESEARCH PROJECT

I write to inform you that permission has been granted for you to use Queen Elizabeth Central Hospital for your research project, "The Quality of Professional Practice by the Registered Nurses and Midwives in Central Hospitals in Malawi."

We would appreciate if a copy of your findings is shared with this hospital.

Wishing you all the best,

Dr. K. Chalulu
HOSPITAL DIRECTOR.

Telephone: (+265) 01 526 266/525 334
Facsimile: (+265) 01524538
Email: medzch@malawi.net

All Communications should be addressed to:
The Director

In reply please quote No:

ZOMBA CENTRAL HOSPITAL
P.O. BOX 21
ZOMBA
MALAWI

17th July, 2008.

Mrs Edoly Shirley Lengu,
Kamuzu College of Nursing,
P/ Bag 1,
Lilongwe.

Dear Madam,

PERMISSION TO USE ZOMBA CENTRAL HOSPITAL FOR A RESEARCH STUDY

I am pleased to inform you that permission has been granted for you to conduct a research study for your dissertation at the above mentioned hospital. The title of the research is, "The Quality of Professional Practice by the Registered Nurses and Midwives in Malawi."

It will be a pleasure to know the findings of your study.

Wishing you every success,

pp

Dr. A. Nthambala,
HOSPITAL DIRECTOR.