ADHERENCE TO INFECTION CONTROL STANDARDS BY NURSES IN A SPECIFIC HOSPITAL IN MANZINI, SWAZILAND

by

SIBUSISO CHALAZELA SIMELANE

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in the subject

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SUPERVISOR: PROF MC MATLAKALA

JANUARY 2015
DECLARATION

I declare that ADHERENCE TO INFECTION CONTROL STANDARDS BY NURSES IN A SPECIFIC HOSPITAL IN MANZINI, SWAZILAND is my own work and that all the sources 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.

15 January 2015

SIGNATURE
Sibusiso Chalazela Simelane

DATE
ADHERENCE TO INFECTION CONTROL STANDARDS BY NURSES IN A SPECIFIC HOSPITAL IN MANZINI, SWAZILAND

Student number: 48080209
Student name: Sibusiso Chalazela Simelane
Degree: Master of Arts
Department: Health Studies
Supervisor: Prof MC Matlakala

ABSTRACT

The purpose of the study was to develop practice guidelines to promote adherence to infection control standards in a specific hospital in Manzini, Swaziland. It was a qualitative, descriptive and explanatory design which utilised an in-depth unstructured face to face interview data collection method done to nine (9) registered nurse participants. A qualitative content analysis was conducted to identify prominent themes and patterns, smaller units of data were named and coded according to the contents they represented. Four themes emerged from data analysis, they were; working environment for nurses, nurse’s descriptions of infection control standards, nurse’s challenges regarding adherence to infection control standards and nurses expressed needs. The findings revealed possible contributing factors to non-adherence to infection control standards by participants and therefore denoted to a serious need for development of general guidelines to promote adherence to infection control standards, these guidelines were presented.

Key concepts

Adherence; infection; infection control standards; hospital; nurse; client; hospital acquired infection; nosocomial microorganisms; health risks; isolation.
ACKNOWLEDGEMENTS

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• My colleagues at the hospital where I collected data, for their willingness to participate, it is very much appreciated.

• The hospital management for allowing me to collect data from the hospital staff.
Dedication

This study is dedicated to all the nurses who strive to improve the quality and safety of nursing care through adherence to infection control standards.
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<td>CEO</td>
<td>Chief Executive Officer</td>
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<td>Hospital Acquired Infection</td>
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<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<td>ICU</td>
<td>Intensive Care Unit</td>
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<td>MDR</td>
<td>Multi-drug Resistance</td>
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CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION

An infection occurs when a live human body interacts physically and immunologically with a foreign microorganism; and the consequences that results from invasion of normal human body by a foreign microorganism can produce harm and potential death, where this is known as an infectious disease (Smeltzer, Bare, Hinkle & Cheever 2010:2120). Throughout history, until the beginning of the 20th century, infectious diseases were the major causes of death amongst of human beings. Conditions such as bubonic plague, also known as “Black Death” is known to have contributed to death to an estimated 75% of the population of Asia and Europe (Schneider 2011:131). Modern science has controlled, eradicated or decreased the incidence of many infectious diseases, however, there are increases in other infections such as those caused by antibiotic resistant organisms found in hospital environments, and these are of great and growing concerns amongst health workers.

Schneider (2011:133) mentions that infectious diseases were largely conquered through public health measures where skilled public health personnel followed proper service delivery standards in areas of purification of water, waste disposal, immunisations and personal hygiene. Smeltzer et al (2010:2121) explain that nurses can play an important role in infection control and prevention; where this can be achieved by using appropriate barrier precautions, observing prudent hand hygiene, and ensuring aseptic care of all invasive equipment to reduce infections to their clients.

According to Taylor, Lillis, LeMone and Lynn (2011:665), health care associated infections which are acquired during the course of treatment for other infections while the patient is hospitalised; occur as a result from treatment or diagnostic procedures. These infections are said to have accounted for approximately 2 million infections, 99000 deaths and approximately $30.5 billion dollars in excess health care costs annually in the United States (Taylor et al 2011:665). Taylor et al (2011:666) further suggested that adhering to hand hygiene recommendations and infection control
precaution techniques can prevent many health care associated infections. Nurses must understand the various precautions or barrier techniques and use them correctly to minimise infection risks to patients; as well as to themselves while providing nursing care.

Adherence to proper infection control standards while providing care at the respective health facilities is essential to minimise infection. A campaign called the “5 million Lives Campaign” was instituted by The Institute for Health care Improvement as an effort to save and reduce client infections. This campaign also encourages the use of infection control evidence based protocols, and the belief behind it was that 100% compliance to these protocols will significantly reduce the occurrence of infections (Taylor et al 2011:665).

The researcher is of the opinion that most nurses know the consequences of infections to the clients and the advantages of adherence to infection control measures. Health care facilities have developed infection control protocols and guidelines for various procedures like hand washing to minimise hospital acquired infections. According to Alex and Opara (2011:10-11), hand washing with soap is an important means of preventing hospital acquired infections, however, the rate of hand washing with soap and water is unacceptably low amongst health care workers. Such health care practices like hand washing should be a simple and straightforward procedure which most nurses should adhere to as it has been proved that it contributes to the overall effectiveness of infection control within health care facilities (Singh, Gupta & Kant 2012:23).

1.2 BACKGROUND INFORMATION ABOUT THE RESEARCH PROBLEM

Smeltzer et al (2010:2121) stated that a complete chain of events is necessary for infections to occur. But on the other hand there are several nursing interventions aimed at interrupting or breaking this chain of infection with an aim of controlling and preventing the infection from occurring. The same authors elaborated on that health care institution related facility infections can be prevented by adhering to standard precautions which include hand hygiene, use of personal protective clothing, environmental control, care of equipment and supplies and prevention of injuries at work (Smeltzer et al 2010:2121).
Such infections are a leading cause of patient morbidity and mortality. Actually in the United States alone, more than 1.7 million hospitalised patients are diagnosed with hospital acquired infections (HAIs) annually, and approximately 90,000 of them die each year.

Locally a study by Simelane (2006:43) which looked at the gap between theory and practical approach towards infection control by nurses concluded that nurses knew aseptic technique but did not fully practice it. Furthermore the nurses knew other precautionary measures to prevent and control infection but they still failed to adhere to those stated standards. Simelane (2006:46) further indicated that knowledge within the nursing personnel has not been conformed into action as expected and therefore recommended a further enquiry to determine the reason for that gap between knowledge and practice.

The researcher as a member of the National Health Quality Assurance Committee has experienced some challenges in encouraging and supporting nurses to adhere to infection control standards. The National Quality Assurance Report (2010:4) conducted in Swaziland in 2010 indicated that health care workers are reluctant to participate in quality assurance activities, as it is deemed an extra activity and impossible to adhere to its standards. Therefore, this particular study was conducted to explore the factors affecting adherence to infection control practices amongst nurses in the health care facilities so that appropriate interventions for this problem can be instituted.

1.3 STATEMENT OF THE RESEARCH PROBLEM

Failure to adhere to infection control standards is a malpractice which has very serious consequences to clients who receive health care services in a facility. This failure can lead to prolonged illness, co-infections, long hospital stays, financial drainage and lack of trust by the consumers of the entire health care system of the specific country. It is therefore recommended that nurses should adhere to proper infection control standards as a major step to prevent infection; and this will also improve the level of health care.

According to the National Quality Assurance Report (2010:7), about 6 in-service trainings on infection control were conducted to nurses and doctors of a specific
hospital in Manzini Swaziland from 2009-2010 financial years. However, the report stated that 20 out of 62 cases of caesarian section procedures got severe infections post operatively. That was summarised as 10 clients got infected in every 31 clients done caesarian section procedures and that was a concern to the hospital management. Although the report did not mentioned the actual causes of such high infection rates, it is suggested to the hospital management to put necessary measures of infection control and prevention, and advised for a formal enquiry to the possible causes of these infection.

The researcher believed that the report encouraged the concerned hospital management to make some effort to capacitiate clinical staff to improve adherence to infection control standards, and such enquiry could have been a great benefit in identifying the possible connection of high infection rates associated with nurse’s failure to adherence to infection control standards. During contact with the nurses, the researcher observed nurse colleagues failing to adhere to infection control standards and casually explored possible causes of such failure to adhere to infection control standards. Various reasons such as lack of or inadequate staffing, improper education on infection control, lack of equipment and supplies, and infrastructure including lack of policies and guidelines were identified. There was a need for a formal scientific enquiry to further identify other reasons behind this serious problem within the nursing profession.

1.4 PURPOSE OF THE STUDY

The purpose of the study was to develop practice guidelines to promote adherence to infection control standards in a specific hospital in Manzini, Swaziland.

1.4.1 Research objectives

The objectives for this study were to

- describe the methods used for infection control in the specific hospital
- determine the factors affecting adherence to infection control standards amongst nurses
• develop practice guidelines to promote adherence to infection control standards in the hospital

1.5 SIGNIFICANCE OF THE STUDY

The value of the study can be discussed in terms of theoretical and practical importance. For the theoretical significance, this enquiry may bring new knowledge to the existing body of knowledge within the nursing profession, the entire nursing bodies such as Swaziland Nursing Council and Nursing Association; and other health/educational institutions could utilise such knowledge to develop their own information materials which can assist nurses and other health care workers in improving adherence to infection control standards as a whole.

For practical significance, the results of the study to a certain extend may be a ready-reckoner for administrators, clinicians, academicians and nurse practitioners practically in health care facilities for policy-making, formulation of standards operating procedures, implementing techniques and processes for infection control at large. It could more particularly help to establish, modify and improve systems which will holistically support nurses as professionals to adhere to infection control standards as expected.

1.6 DEFINITION OF TERMS

Terms and concepts in research are abstracts of a particular aspect of human behaviour and characteristics, and they may be defined differently by different individuals. The specific terms to be used in the study are defined and explicated to assist in clarifying the conceptual underpinnings of the research, thus making it easier to integrate the research findings (Polit & Beck 2008:143).

1.6.1 Adherence

To adhere is to obey or follow a set of principles, course of action and values (Oxford Advanced Learners Dictionary 2008:15). For the purpose of this study adherence is the ability of the nurse to stick to reasonable minimum standards utilising the available resources while conducting nursing procedures at the hospital.
1.6.2 Infection

According to Damani (2012:xxii), infection is the host reaction to invasion to microorganisms, or the damaging of body tissue poisonous substance released by a microorganism. In this study it refers to a disease, ill-health or medical problem which could have been contributed by failure to adhere proper infection control standards while proving health care in hospital.

1.6.3 Infection control standards

According to Taylor et al (2011:658-659), these are scientifically proven guidelines to be followed by health care providers to safeguard their clients by controlling disease and preventing the spread of infection. For the purpose of this study, these are written protocols and guidelines a nurse should follow in making sure that there is maximum control and prevention of client infection in the process of nursing care.

1.6.4 Nurse

The Swaziland Nursing Council Bill (2008) (Bill No. 12 of 2008 Section 14) states that the registered nurse is described as “a person who has successfully completed a programme of generalised nursing education and is authorised by the Swaziland Nursing Council to practice as a professional nurse in Swaziland. For the purpose of this study, a nurse is a professionally trained individual approved by the government to work in the health care facility as a nurse to treating sick people from the community.

1.6.5 Hospital in Manzini

For the purpose of this study, a hospital is a community health facility which provides a package of health services like prevention, treatment and rehabilitation to in and out patients utilising professionally trained health personnel.
1.7 THEORITICAL FOUNDATIONS OF THE STUDY

The theoretical foundation of the study is seen as the framework or rationale of the parameters or boundaries of a study (Polit & Beck 2008:142). A descriptive qualitative study was a systematic subjective approach to be used to enable nurses to describe work related experiences regarding infection control at the work place. The naturalistic enquiry approach was most suitable as the researcher was investigating both the methods used in infection control practices and the factors affecting adherence to infection control by nurses in a specific hospital.

1.7.1 Assumptions underlying the study

Polit and Beck (2008:748) describe an assumption as a principle that is accepted as being true based on logic or reason, without proof. In research, the assumptions are embedded in the philosophical base of the framework or study and they influence the development and implementation of the research process. The general assumption in this study was that nurses have the knowledge gained from training which helps them to adhere to infection control standards as they deliver health care services. This assumption may not be empirically tested but it is an underlying proposition which can be challenged meta-theoretically.

The general assumption made about nurses as skilled health care professionals is linked to the core of the nursing practice which mainly relates to the person, environment and health. These concepts were explained as follows:

**Person:** The skilled professional nurses who is in constant interaction with lived world in clinical settings and the clients who are the primary recipients at the health care facilities in receiving optimal care.

**Environment:** The health care facility departments (lived world) where in and out-patients are given relevant specific health care services.

**Health:** The practical and experiential nature and ability of the nurse’s adherence to infection control standards while providing health care services to clients.
1.7.1.1 Ontological assumptions

This refers to the nature of reality. According to Polit and Beck (2008:15), for the naturalistic enquiry, reality is not a fixed entity but rather a construction of the individuals participating in an enquiry; it exists within a context and many constructions are possible. The reality in this study was the factors affecting nurse’s adherence to infection control standards as they deliver health services, and that was individual realities self-created and as well as subjectively constructed. The researcher believed that the reality of nurse’s adherence to infection control standards could be best obtained within the context of nurse’s individual understanding, interpretations and experiences as trained professionals on the importance of adherence to infection control standards.

1.7.1.2 Methodological assumptions

This refers to how evidence is best obtained (Polit & Beck 2008:14). In this study, methodological assumptions were related to the nurse’s adherence to infection control standards which were an inductive process where focus was on the individual subjective experiences of the in-depth truth and understanding of the phenomena. The findings were the product of the interaction between the researcher and participants, qualitative data collection was meant to capture participant’s challenges and successes on adherence to infection control standards.

1.8 RESEARCH DESIGN AND METHODOLOGY

A qualitative, descriptive and explanatory design study was conducted, aiming at determining the extent at which nurses adhere to infection control standards.

1.8.1 Study setting

The study was conducted in a specific hospital at Manzini, Swaziland. The proposed hospital is the second largest hospital situated at the center of the country and has a capacity of admitting 200 inpatients and consulting 400 outpatients per day (Ministry of Health 2010). The hospital has 8 functional departments, more than 80% of the nursing personnel in each department is formed by registered nurses (Ministry of Health 2010),
and that made it convenient for the researcher to hand pick rich participants to represent the target population.

1.8.2 Population and sampling

The target population was registered nurses working in the proposed hospital for this study. A purposive sampling method was used to select registered nurses with a minimum of a diploma in general nursing, with 1 to 5 years’ experience working as a nurse. The researcher believed that such category of nurses did undergo training in infection control because it is a generic module, and furthermore the duration of such clinical experience at work would have exposed the participants in a working environment which strictly needed an adherence to infection control standards. Sample size was not predetermined but data collection was done until data saturation occurred.

1.8.3 Data collection

Individual unstructured face-to-face interviews with the participants were conducted. The interviews were audio recorded with the permission of the participants in order to keep a record for analysis later.

1.8.4 Data analysis

Data analysis started immediately after data collection phase on each participant. The study followed the qualitative content analysis mainly of the narrative data to identify prominent themes and patterns. The data were broken down into smaller units, and then named and coded according to the contents they represented (Polit & Beck 2008:517-518).

Narrative information was also obtained as the researcher was having conversations with participants. Massive amount of rich non-structured data in a form of words and recordings were gathered and therefore required careful analysis. Coding and categorising was initiated as soon as data collection began, coding for themes was specifically used in interview data. The rest of the data analysis steps followed, that included making memos about the context and variations, verifying selected themes through reflection on the data and discussion with expert (supervisor) in the field,
refining categories, recording of support data for categories and the identification of propositions (Brink 2003:192). Data analysis is further explained in chapter 3.

1.9 TRUSTIWORTHINESS OF THE STUDY

The researcher believed that research design and methods to be used were appropriate and relevant to address the purpose of study which was to develop practice guidelines to promote adherence to infection control and prevention standards. The study design, setting and methods proposed were executed as planned. Data collection, handling and analysis were done in accordance to the below mentioned ethical considerations and trustworthiness. It was up to the researcher's effort to maintain trust and reliable relationship with participants by employing all elements of human respect, dignity, anonymity and humanity. Trustworthiness is further explained in details in chapter 3.

1.10 ETHICAL CONSIDERATIONS

The study considered the following ethical considerations:

**Informed consent:** The researcher recruited willing professional participants after having fully explained the purpose of the research. A consent form was given on time thus allowing participants to have enough time to read and understand, thereafter verbal explanation of possible risks and advantages was discussed with each individual participant. They were asked to sign the informed consent form willingly; and informed of the freedom to withdraw at any stage of the study.

**Institutional Review Board:** The proposal was submitted to the Higher Degrees Committee of the Department of Health Studies, College of Human Sciences at the University of South Africa, for approval and ethical clearance. Permission to conduct the study was sought from the Swaziland Ministry of Health; and the proposed hospital management after the researcher requested a platform to present the research purpose, benefits and risks in general.

**Confidentiality:** The researcher describes how confidentiality was maintained throughout the study; and that includes privacy, signing of confidentiality clauses and
safe storage of research data. Permission was sought from the participants during the observation times.

**Anonymity:** The participants were coded instead of using real names. The name of the hospital was also not mentioned until the finalisation of the entire research.

**Principle of beneficence:** The study may benefit the hospital by helping to come up with effective guidelines to promote adherence to infection control standards.

**Principle of respect of human dignity:** The researcher maintained the participant’s right to self-determination, as the participants were given freedom and a conducive environment to express themselves and be comfortable as possible. The study ensured the right to full disclosure where the full aspects of the study were explained to the hospital management, nurses and clients as well. There was no cohesion or exploitation of participants as a means of persuading or forcing them to participate, freedom of withdrawal will not be infringed upon participants.

1.11 **CONCLUSION**

This chapter presented an overview of this study with special emphasis on the problem statement, purpose of the study and introduction to methodology. The next chapter, chapter 2, presents the literature review.

1.12 **STRUCTURE OF THE DISSERTATION**

The structure of the dissertation is as follows:

Chapter 1: Overview of the study

Chapter 2: Literature review

Chapter 3: Research design and methods

Chapter 4: Analysis, presentation, and description of the research findings

Chapter 5: Conclusion and recommendations
CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Qualitative researchers have differing opinions about reviewing the literature before doing a new study, particularly in grounded and phenomenology studies (Polit & Beck 2008:105-106). The researcher conducted an upfront literature review to determine trends, experiences and attitudes of nurses on adherence to infection control standards within the acceptable and expected conduct in line with the general health and nursing theories, philosophy and scholarly. The literature review was the critical summary of the research in the topic of adherence to infection control standards by nurses, which put the research problem in context.

The chapter briefly deliberate on the nature of infection in general, chain of infection and nosocomial infection also known as hospital acquired infection (HAI), and most of the information will be extracted from current information from books, similar studies presented in journals and reports and from the researcher’s general observations while at field work as a nurse and with his nurse colleagues.

2.2 THE NATURE OF INFECTION

It is important to note that exposure to a microorganism does not always necessarily lead to infection, healthy individuals maybe colonised without diseases or carry infectious agents without overt symptoms of infection. Hospital clients are more prone to develop infections either from an exogenous route (where sources of infections are acquired from health care environment, equipment and from health care workers) or via an endogenous route (source of infection is from the client’s own micro flora) (Damani 2012:5). According to Singh et al (2012:3-4), a healthy person is protected from acquiring nosocomial pathogens by virtue of natural barriers like skin, mucus membranes, humoral immunity and cellular immunity. Pathogens penetrate the skin or mucus membranes barrier to reach interior body parts and cavities which are normally
sterile, and reaction to such penetration develops clinical symptoms, such response is termed an infection.

2.2.1 Chain of infection

Infection cannot occur unless all the key elements are present. An infectious agent, a source of the agent, a susceptible host to receive the agent, and most critically, a way for the agent to be transmitted from source to the host (Singh et al 2012:16). The interaction among these elements is known as the chain of infection and it emphasises the necessary linkages among all elements.

2.2.1.1 An infectious agent

This is the microorganism which could be a bacteria, virus, fungi or parasite that can cause infection or disease (Singh et al 2012:16). These microorganisms can attach loosely to the skin in dirt and grease or under finger nails and they can be transmitted unless removed by proper hand washing.

2.2.1.2 A reservoir

According to Damani (2012:6), the reservoir of infection can be an infected person, animal, fomites and the environment on which microorganisms can survive and in some cases multiply. Infectious reservoirs abound in health care settings, and may include everything from patients, visitors, health staff members, medical equipment, food and water.

2.2.1.3 Portal of exit

The microorganism must have a mode of exit from the host to another or to environment for transmission to occur, most micro-organisms exit through the respiratory tract, gastrointestinal tract and genitourinary tract or blood (Smeltzer et al 2010:2123).
2.2.1.4 Mode of transmission

The way in which the infectious agent moves from the reservoir to a susceptible host is called the mode of transmission. Taylor et al (2011:656) suggested that such infectious agents can be transmitted directly which involves proximity between the susceptible host and an infected person such as touching, kissing or sexual intercourse. Health care professionals have the potential to directly transmit these microorganisms to clients through touching, and proper hand hygiene or glove use can interrupt this means of transmission. Indirect contact route involves personal contact with an inanimate object such as touching a contaminated instrument. From the researcher’s point of view, transmission by direct contact was discovered long ago, through socialisation at young age we were encouraged to wash hands before eating, and that helped to reduce transmission of infectious agents.

2.2.1.5 Portal of entry

Damani (2012:9) describes this stage as the path by which infectious agent invades a susceptible host and this is usually the same as the portal of entry.

2.2.1.6 Susceptible host

According to Smelter et al (2010:2123), for infection to occur, the host must be susceptible (not possessing immunity to a particular pathogen) and infection does not develop until an individual becomes susceptible to the strength and number of microorganisms. Most patients who are hospitalised are highly susceptible to infections as their immune system is compromised, this is also worsening by being exposed to various medical treatments and invasive procedures therefore nurses adherence to infection control standards can help to minimise the spread and onset of infection on clients.

2.3 NOSOCOMIAL INFECTIONS

These are infections which develop when the client is hospitalised; such infections were not noted as being present on admission (Taylor et al 2011:665). Some nosocomial infections results from treatment and procedures rendered by health care workers, they
increase the costs of health care, extend hospital stay, increase disability and prolongs recovery time.

The hospital management through the Quality Assurance Committee and Infection control Committee developed procedure guidelines which incorporated the infection control practices and placed them in strategic rooms of various departments as health care personnel reference when rendering health care. The hospital has followed Taylor et al (2011:666) ideas of reducing incidences of nosocomial infections in hospital like having written infection control practices placed in walls (hand washing and wound dressing) and establishing committees to ensure proper adherence to infection control standards. Nurses as health care providers have an obligation to prevent nosocomial infections through practicing proper medical and surgical aseptic techniques.

2.3.1 Medical asepsis

This is the clean technique aimed at nurse’s effort in minimising the onset and spread of infection, they are based on the principles of simple, basic and obvious techniques expected to be done on daily basis.

2.3.1.1 Cleaning

Rutala (2005:27) describe cleaning as the removal of all foreign material such as soil and organic material from objects, it involves the use of water and mechanical action with or without detergents. The hospital has a procedure manual which clearly states that ward cleaning and damp dusting of beds, cabins and sinks are basic routine activities to be done every morning before commencement of other activities, but the Raleigh Fitkin Memorial (RFM) Hospital’s (2011:14) report concluded that routine ward cleaning was hardly done to majority of the hospital departments.

2.3.1.2 Disinfection and sterilisation

These two processes eliminate many or all pathogenic microorganisms on inanimate objects, Singh et al (2012:71-72). Proper adherence to infection control standards call for health care workers to use properly sterilised surgical equipment per client in a well disinfectant environment to minimise spread of pathogenic microorganisms to clients.
The importance of environmental contamination in the spread of nosocomial infections has generated a need for high performance disinfectants, according to Humphreys, Finan, Rout, Hewitt, Thistlethwaite, Barnes and Pilling (2013:127), chlorine-based disinfectants are the products of choice which provide a realistic effectiveness when tested against bacteria and spores.

2.3.1.3 Hand hygiene

This is basically done in two methods, hand washing (which is the application of soap and water) and alcohol hand rub (application of alcohol gel for hand disinfection) which primarily aimed at removing dirt, organic material, loosely adherent transit in hands, hand rub in particular decontaminate hands (Damani 2012:137-138). Although there is an agreement that hand hygiene is the most important procedure for preventing infections, this procedure is still not performed consistently in the health care settings with compliance rates generally below 50% (Taylor et al 2011:661-662).

Taylor et al (2011:662) further associates poor compliance to hand hygiene with lack of access to sinks, lack of time, skin irritation, ignorance, individual preferences and insufficient institutional commitment to appropriate hand hygiene procedures. Improvements to hand hygiene compliance includes collaboration and leadership in the health care environment, ensuring the availability of hand hygiene products, collecting data on compliance and infection rates and focusing on individual accountability.

Damani (2012:139) has adopted the World Health Organization (WHO) indication for hand hygiene called the “five moment of hand hygiene” which specify that it should be done:

- Before touching a client
- Before clean or ascetic procedure
- After body fluid exposure risk
- After touching a client
- After touching client’s surroundings
2.3.1.4 Personal protective equipment

Protective clothing generally includes face masks, gloves, goggles, mask, gowns, boots, shoe covers, caps and hair cover, the researcher believes that majority of nurses has the misconception that protective clothing only provides physical barrier between microorganism and the wearer, nurses are more concerned about being protected from infectious environment and clients.

According to Singh et al (2012:57-58), protective clothing like mask, gloves, caps and shoe covers protects microorganisms from staff to clients or environment, therefore they should be properly donned and used to provide maximum protection. Proper procedures and policies should be followed by health care workers, like gloves are not substitutes for hand washing and they are single used to avoid contamination (Taylor et al 2011:699). The researcher has observed several health care workers using same gloves for different clients especially in procedures which are not invasive like bed making, bathing, changing positions, taking vital signs and feeding, and such contamination practices put clients at risk of cross infection.

2.3.1.5 Environment and equipment cleaning

The environmental care plays an important role in the transmission of pathogens that cause nosocomial infections, studies has documented short term improvements in environmental cleaning through use of objective cleaning measures, improved disinfectant and modification of housekeeper practices (Rupp, Fitzgerald, Sholtz, Lyden & Carling 2014:866). Health care delivery rooms, items and equipment must be cleaned and disinfected using appropriate disinfection, health care staff should follow standard procedure and guidelines on a daily basis to reduce the bioburden of microorganisms (Damani 2012:105).

The RFM Hospital’s (2011:13) report stated that most of the time nurses are not involved in the cleaning of the hospital rooms but nursing assistants and ward aiders, it further concluded that nurses as professionals has responsibility to develop cleaning procedures and guidelines which will be modified as necessary which will be followed by the staff responsible for daily cleaning of the wards and its equipment.
2.3.1.6 Equipment and supplies

Enough and proper equipment are vital in reducing the risk of infection in general, depending on the guidelines such equipment should be properly washed, disinfected, sterilised or discarded according to standards. According to Smeltzer et al (2010:2132), all caregivers must pay careful attention to disinfection and aseptic technique while using medical equipment.

Contaminated supplies must never be used for another client and once used proper disposal system should be followed (Taylor et al 2011:672). The RFM Hospital’s (2011:22) report mentioned that over 70% of the hospital wards did not practice proper waste disposal, bins with red liners could be seen filled with general waste and those with black liners filled with used gauze and gloves. The report further concluded that the hospital had enough both red and black bin liners to supply the whole hospital departments, but trained health care workers failed to follow the proper waste disposal standards thus posing a high risk for infection.

2.3.2 Surgical asepsis

Hands of health care workers are the most common source of cross infection (Sigh et al 2012:38), surgical asepsis which is basically a sterile procedure requiring health care workers to use extra precautions above the general medical asepsis to prevent spread of infection.

2.3.2.1 Overview of surgical asepsis

Taylor et al (2011:675) mentioned principle of surgical asepsis as follows:

- An object is considered sterile when all microorganisms including pathogens and spores have been destroyed.
- Sterile forceps and gloves are used to handle other sterile objects to avoid contamination.
- Open sterile package so that the first edges of the wrapper is directed away from the health care worker to avoid the possibility of sterile object toughing unsterile clothing.
• Avoid spilling any solution on a cloth or paper used as a field for a sterile setup.
• Hold sterile objects above the level of the waist.
• Avoid talking, coughing, sneezing or reaching over the sterile field.
• Never walk away from or turn your back on a sterile field.
• Keep all items sterile that are brought into contact with broken skin or to use to piece skin.
• Consider an object contaminated if you have any doubt as to its sterility.

The important aspect of surgical and medical asepsis is that the effectiveness of both depends on faithful and conscientious practice of health care workers, (Taylor et al 2011:674). The researcher has observed most nurses working in environment that needed practicing of surgical sepsis like emergency room, surgical wards and labour ward failing to adhere properly to these principles of surgical asepsis. Such observation was mentioned in The RFM Hospital’s (2011:25) report where most deliveries at labour ward were done without sterile delivery packs, most midwives were improvising with sterile gloves wraps to make a sterile field.

2.3.2.2 Performing sterile procedures

The researcher as a qualified professional nurse is aware that nurses are taught all nursing sterile procedures; step by step manuals are readily available both in university and hospitals as referral sources for health care workers. Most disease transmission occurs due to actions of health care workers that ignore basic principles of aseptic techniques such as the reuse of needles, contamination of sterile fields and inadequate decontamination of the port of entry (Singh et al 2012:38).

A previous study by the researcher that about 6 nurses out of 20 in a surgical setting grossly cross contaminated sterile a sterile field while doing wound dressing (Simelane 2006:33) and that shows that despite training some nurses still cannot adhere to infection control standards. Professional health care workers like nurses must be aware of their own role in infection control standards and incorporates good practices into their daily activity to ensure that they don’t jeopardise health of clients (Damani 2012:301). Simelane (2006:18) identified that more than 95% of nurse participants appreciate the importance of adhering to proper infection control standards in controlling the spread of infection. However, that appreciation seemed not conforming into practicality. Most
health care facilities has been affected by poor resources but there has been a positive changes done by Governments in prioritising health budgets (Damani 2012:302), some important equipment and supplies have been made available to enable health care workers to adhere to infection control standards.

2.3.3 Hospital infection control and prevention programme

Nosocomial infections are now recognised as a major cause of morbidity and mortality worldwide, provision of effective infection prevention and control Programme is essential for all health care facilities (Damani 2012:18), hospital management should ensure that a joint agreement on an effective hospital infection prevention programme.

2.3.3.1 Infection control committees

The infection control committee should be made up of key personnel from the various health facility departments acting as a liaison between departments responsible for patient care and departments responsible for support. According to Singh et al (2012:5), some responsibilities of the committee are to

- approve annual plan for infection control
- approve infection control policies
- ensure availability of appropriate supplies needed for infection control
- facilitate and support staff training
- investigate and report outbreaks of nosocomial infections
- assist in development and update infection control policies
- assist setting up infection control team and identify focal persons

Infection control committee has the overall responsibility of planning, evaluation of evidence based practice and implementation, prioritising and resource allocation of all matters relating to infection control. Lack of departmental participation was cited as a challenge in the RFM Hospital’s (2011:34) report, some departments had no focal person while some declined complaining of extra work load. The researcher believes that active and effective infection control committees can assist in developing hospital
infection control adherence guidelines which could be relevant to each individual health facility.

2.3.3.2 *Infection control team*

It is advisable that facilities with more than a capacity of 150 beds should have an effective infection control team headed by a full-time doctor and a nurse who manages the team through full support from top management (Singh et al. 2012:5). The team is responsible for a day-to-day running of the infection control programme almost at all relevant departments. Damani (2012:22) briefly summarises its role as follows:

- Production of an annual infection control programme with clearly defined objectives.
- Production of written policies and procedures including regular updates.
- All grade of staff education in policy, practice and procedures relevant to their work area.
- Conduct daily audit activity in relevant departments.
- Provide advices to all grades of staff on all infection control and prevention matters on day to day basis.
- Surveillance of infection to detect outbreaks at the earliest opportunity and provide data to inform any positive change in practice.

Adequate support including resources, training, and access to internet, office, expert resources and transport are essential for the team to enable a maximum delivery. The RFM Hospital’s (2011:27) report has acknowledge the hospital investment in infection control programme where a permanent nurse was hired as infection control coordinator, setting up of an office and installing computers, sending coordinator to trainings and purchasing of requested infection control supplies like proper waste refuse bags as per the team recommendations.

2.3.3.3 *Effective communication in infection control and prevention*

Nosocomial infections can be reduced by implementation of a complete improvement programme, steps towards that include system change, education, monitoring performance, reminders and safety culture (Singh et al. 2012:3). Constant reminders
and feedbacks to the entire health care staff are imperative for success of the programme, posters, printings, short feedback questionnaires and suggestion boxes can be helpful to improve communication and compliance to the infection control programme.

Staff should have an easy access to manual of policies and procedures, such policies should be practical, workable and sufficient flexible to ensure their implementation (Damani 2012:19). New policies should be carefully monitored by regular audit and should include feedback to the clinical team as well; changes to the policies like amendments and introduction of new ones should be properly communicated to the entire health care staff. Generally an average of 2 audits per department was conducted by the infection control coordinator over a 6 month period, (the RFM Hospital report 2011:35) and audit reports were share with staff who were also encouraged to send feedbacks on their performances.

### 2.3.4 Infection control and prevention trainings

A study done by Cherry, Brown, Bethell, Neal and Shaw (2012:406) in determining features of educational interventions that lead to compliance with hand hygiene in health care professionals within a hospital care setting, concluded that educational interventions had a greater impact if compliance to infection control compliance best practices were low, multiple interventions were also better than single interventions in terms of eliciting and sustaining behaviour change. The researcher believes that well-structured effective infection control and prevention trainings can be very useful in changing the mind set for health care workers in ensuring that they consistently adhere to infection control standards.

#### 2.4.4.1 Hospital staff training

Hospital trainings particular in-service trainings are very critical in equipping health care workers with practical and relevant knowledge, the researcher’s study on nurse’s gap between theoretical and practical knowledge towards infection control discovered that about 95% of nurses have not participated in any in-service training on infection control since graduated from nursing school (Simelane 2006:26). Continuous educational trainings can have more impact than single educational trainings in sustaining
behavioural change in health care workers, and first step towards such improvement in infection control compliance should be to target educational interventions in areas where compliance to best-practice is poorest (Cherry et al 2012:408).

2.4.4.2 Education of client/patient and caregiver/relatives

Nurses as patient advocates has a responsibility of teaching patients and families about infection control and prevention strategies like good hand hygiene, they can also hold other members of the health care team accountable for not practicing good hygiene, Upshaw-Owens and Bailey (2012:80). According to Taylor et al (2011:678), medical asepsis techniques are appropriate for most procedures both in hospital and home setting, activities like washing hands before preparing food and eating food and washing hands after using bathroom are universal. Clients and caregiver relatives must also be assisted in properly downing of gloves, masks, gowns, wound care and identifying signs of infection to reduce risks of nosocomial infections.

2.4.4.3 Infection control and prevention feedback and evaluations

Upshaw-Owens and Bailey (2012:79) recommended that the involvement of health care workers staff during infection control and prevention planning phase may contribute to greater clinical functionality as well as better compliance with specific practices like hand hygiene and isolation precautions. This can further encourage nurses in particular to give feedbacks and recommendations for infection control and prevention improvements at different departments.

According to the RFM Hospital’s (2011:34) report, the infection control department distributed suggestion boxes to different wards which encourage clinical staff to submit any complains and suggestions related to infection control, unfortunately they were hardly used as most of them were found to be empty. Scientific evaluation of the entire facility infection control programme is very important, the provision of data on scope and infection occurrences and assessment of programme at large helps to inform clinicians about how best to priorities preventive interventions and to assess the impact of those interventions as well, (Singh et al 2012:146). The entire ongoing evaluation process of infection control in hospitals will determine whether health care provider’s
goal of minimising infection has been met, and this will further results to infection control improvement plans and interventions.

2.5 CONCLUSION

Literature has shown that adherence to infection control standards is very critical in reducing the incidence of nosocomial infections, and in addition health care workers particularly nurses they are aware of the danger they impose to clients should they ignore the infection control and prevention measures. Nurses has the capacity to adhere to the simple straight forward precautionary measures like hand washing, donning gloves, masks, disinfection, sterilisation and maintaining sterile field can be still correctly done despite lack of human, finance and supply resources. Hospitals have the responsibility to establish effective infection control committees which will assist lead in perusing the entire objective of infection control and prevention in the hospital.

The hospital like other hospital has adopted some approved and acceptable infection control methods which are familiar to nurses who were taught while at nursing school, and as other studies stated, such methods are not always done as per the clinical acceptable standards. The literature has been insufficient in explaining the possible practical causes for nurse’s failure to adhere to infection control standards, relevant and practical guidelines need to be established to assist nurses to adhere to infection control and prevention standards.
CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

This chapter explains the research design and methods followed which include the research population and sampling, data collection, management and analysis. The ethical considerations and trustworthiness in the context of both the study design and methods to be used are discussed.

The purpose of the study was to develop practice guidelines to promote adherence to infection control standards in a specific hospital in Manzini, Swaziland. The objectives for this study were to describe the methods used for infection control in the specific hospital, and to determine the factors affecting adherence to infection control standards amongst nurses.

3.2 STUDY DESIGN

According to Brink (2003:214), research design is the overall plan for gathering data in a research study. Once the research question is identified; the study must be then designed. This was a qualitative, descriptive and explanatory design study aiming at determining the extent at which nurses adhere to infection control standards. This design was chosen to enable the researcher to generate information on the factors affecting adherence to infection control standards and measures in the specific hospital.

3.3 STUDY SETTING

The study was conducted at a specific hospital in Manzini. The proposed hospital is both a regional and second largest hospital in Swaziland. It is situated 1 kilometer away from Manzini city center, a city which is the second largest in Swaziland and where majority of the population lives. This hospital has a capacity of admitting 200 inpatients and consulting 400 outpatients per day (Swaziland Ministry of Health National Quality
Assurance 2010:5). This is a mission hospital under The Church of the Nazarene Mission and gets financial support from the Government of Swaziland.

The hospital has 8 functional departments, and more than 80% of the health care personnel in each department is manned by registered nurses (Swaziland Ministry of Health National Quality Assurance 2010:4) such hospital environment enable a variety of options in selecting participants with rich information and who will be the best representative of the target population. The Government funding has assisted the hospital to hire enough qualified health care professionals, build infrastructure, purchase equipment and supplies to enable delivery of high quality health care services including adherence to infection control and prevention standards.

3.4 STUDY METHODS

Study methods are steps, procedures and strategies for gathering and analysing data (Polit & Beck 2008:758).

3.4.1 Population and sampling

According to Polit and Beck (2008:338), target population is the aggregate of cases about which the researcher would like to generalise and on the other hand, accessible population is the aggregate of cases that conform to designated criteria and that are accessible as subjects of the study.

The target population of the study was all registered nurses of Swaziland and the accessible population was nurses working in a specific hospital in Manzini, Swaziland. Eligible participants (eligibility criteria) were nurses who had the following criteria:

- Registered with Swaziland Nursing Council with valid and current practice license.
- Had a minimum qualification of diploma in general nursing.
- Working in surgical departments of the hospital where infection control and prevention were of greatest priority in the nursing care delivery.
- Had a minimum of one (1) year working experience in a surgical environment.
The sample was part or fraction of the whole larger accessible population selected by the researcher to participate in the study (Brink 2003:133), a non-probability purposive sampling approach was used where the researcher decided purposely to select subjects who met the eligibility criteria. The researcher visited the hospital, approached the nurses on duty and specifically handpicked a single nurse participant who was:

- Currently working in hospital surgical units which was mainly maternity, labour, and surgical and emergency/outpatient units. Such nurse participant was believed to be registered and holding current practicing licenses with Swaziland Nursing Council as a standard requirement for health practitioners in the country.
- Wearing red applets as distinctive devices that proved that the nurse had a diploma in general nursing.

The sampling size was not predetermined; rather it was left dependent on the extent to which no new information was gathered during data analysis.

3.4.2 Data collection

An unstructured in-depth face-to-face interview method which was convectional and interactive to enable participants to give deep, rich and detailed information was used to collect data (Brink 2003:158). The unstructured face-to-face interview was relevant to this qualitative, explanatory study because the researcher did not possess enough knowledge about the topic to structure questions in advance of data collection; therefore the researcher believed that a free naturalistic setting would facilitate participants to openly share their experiences on adherence to infection control standards.

Data collection was conducted during week days where a maximum number of nurses are on duty to avoid disturbances of routine nursing services in the units. Each selected participant was informed through their mobile phones and SMS notification on the date, time and place of the interviews; that was done on the previous day for optimal preparedness and to avoid missed appointments. The hospital management allowed the researcher to utilise a counseling room (Room 5) to conduct the interviews, participants were called from their working unit through the hospital telephone handset located in the interview room.
Data collection tool was developed by the researcher (Annexure E) which was initially used on two (2) participants in a pretest phase to elicit its ease of use and to identify any aspect that needed modification. The result of the pretest helped to researcher to identify the relevancy, appropriateness and quality of the data collection tool. A conclusion was reached that the tool will answer the research questions.

The researcher welcomed each participant on entering the room, introduces himself then briefly explained the participant’s eligibility criteria to clarify to participants as to why they were handpicked to participate in the study. The purpose of the study was explained; both ethics clearance and hospital permission to collect data letters were read and shown to participants. The researcher also explained the process of data gathering and management including the ethical considerations in maintaining anonymity, privacy, confidentiality and the right and freedom to withdraw from the study at any time.

After the participants showed interest and verbally agree to participate, the researcher further explained the importance of obtaining an informed written consent from the participant as a means an agreement that he or she was willing to participate. After signing the written consent forms participants (Annexure D), they were made aware that the conversation will be recorded on the computer and sometimes the researcher will be taking notes during the conversation.

The researcher collected data using an audio recorder during the interview process to ensure the highest possible reliability of data and to prevent a total information loss (Polit & Beck 2008:400). The computer audio system was started, and the researcher used an interview guide with both grand tour and follow-up probing questions. As the participants gave detailed explanations, the researcher noted down some non-verbal communications. Further probing open ended questions were asked to the participants for clarity and additional information.

The researcher believed that utilising the face-to-face interview method would enable taking of advantage of social cues such as voice, intonation, body language and mannerisms of participants and this could give the interviewer a lot of extra information that could be added to the verbal answer of the interviewee on a question (Opdenakker
The researcher further took field notes as documentation on specific important points and non-verbal communications deemed important as useful information to be utilised during the analysis phase. Data collection was done over a period of 2 months. The researcher reached a point where he realised that the analysis process gave almost same themes and categories, there was no new information obtained and redundancy was obtained. Data saturation was reached on the ninth participant therefore determining the sample size of nine (9) participants.

The researcher anticipated some advantages and disadvantages of using this data collection method (Brink 2003:152). Some advantages and disadvantages encountered were follows:

### 3.4.2.1 Advantages of face-to-face interviews

- Responses were obtained from definite participants.
- Responses and retention was high as well.
- Non-verbal behaviours and mannerisms were easily observed and documented.
- The researcher was able to clarify questions from the participants on the spot.
- Rich in-depth responses were obtained.

### 3.4.2.2 Disadvantages of face-to-face interviews

- The interviews were time consuming.
- The nurses were short staffed and busy in the units.
- Arrangements for the interviews were difficult due to time constraints.
- The researcher struggled to get a private free room at the hospital.
- The nurses may have provided reasonably acceptable explanations especially after being made aware that the researcher is a nurse as well.
- Nonverbal communications might have been misinterpreted by the researcher.

### 3.4.3 Ethical considerations related to data collection

According to Polit and Beck (2008:753), these are systems of moral values concerned with the degree to which research procedures adhere to professional, legal and social
obligations to study participants. The following measures were done to comply with the expected ethical considerations:

- Ethical clearance (Annexure A) was obtained from the university and the researcher waited for the permission from the supervisor to go ahead to collect data from participants.
- Permission from the hospital (Annexures B and C) to collect data was sought and once obtained the researcher proceeded to collect data. A copy of the letter of permission was shared with the participants.
- Data collection lasted for about 30-40 minutes; and other than being enough time to express experiences, it also enabled participants and the researcher develop trust and flexibility on both researcher and participants.
- The researcher explained the nature of the study to participants; and then obtained a signed written informed consent form which had a code instead of participant name, (Annexure D). The participants were also explained about their freedom to decline in the study at any time when deem so.
- All recorded conversations and notes taken were kept confidential in a safe lockable place. Audio information was kept in a pass-word restricted computer and hard drive as a secured soft copy file. The password is known by the researcher and the supervisor of this study only. All interviews were conducted in a private room, with a lockable door and a friendly professional setting.
- The researcher asked now and again participants about comfortability and flexibility as the interviews continues, this was done to eliminate any discomforts and all the interviews ran smoothly with no disturbances.

### 3.4.4 Data management and analysis

Data analysis was initiated immediately after data collection. Following each interview all documented notes and the computer were safely packed and taken to a safe lockable study room for analysis. Each participant's audio file was saved by a code not name, the documented notes were kept in a single file with the same code used to save audio recording file in the computer, and again personal names were not used.

The researcher played the audio recording using a slower pace player setting to listen to all the details of the conversations, and as the information flowed from the recording
the researcher jotted down important concepts and ideas on the coding booklet. Audio recorded data was transcribed verbatim and converged with written notes. The data was read and reread to make a sense of the whole. The recorded information was also compared with the field notes taken on the same day to identify any common important relationships that could be considered in developing units, codes and themes.

Qualitative content analysis was followed to analyse the collected study data. According to Polit and Beck (2008:518), content analysis involves the analysis of the content of narrative data to identify prominent themes and patterns among themes. Data was broken down into smaller units, coding and naming the units according to the content they represented and grouping materials based on shared concepts. The entire sets of transcripts were read in order to get a sense of the whole and discriminate irrelevant units from the participant’s description of the experience under study. Data was coded for common themes, and the coding involved combining data for themes, categories, and making similar passages of text with a code label. Analysis involved identifying emerging themes, ideas, terms, phrases and key words from the data. All meanings attributed to by the participants were synthesised into consistent statements regarding the participants’ experiences in adhering to infection control and prevention standards.

The data analysis almost followed Smith and Osborn's (2008) guidance on interpretative phenomenological analysis (Roberts 2013:215-218), where the researcher immersed himself in the data by coding it line by line, and emerging themes then developed and grouped together.

The researcher followed the same process for new data which kept coming from other interviewed participants, there were instances where the researcher had to re-code new data for common themes and categories as means of getting final themes and categories which would represent all the mentioned participant’s experiences. Analysis involved identifying emerging themes, ideas, terms, phrases and key words from the data. All meanings attributed to by the participants were synthesised into consistent statements regarding the participants’ experiences in adhering to infection control and prevention standards. The whole process of data analysis including data collection took two (2) months.
3.5 DATA TRUSTWORTHINESS

According to Polit and Beck (2008:768), trustworthiness is the degree of confidence qualitative researchers has in their data assessed using the criteria of credibility, dependability, transferability and conformability.

The researcher used the following strategies to enhance trustworthiness:

3.5.1 Credibility

This was a demonstration that the enquiry was conducted in a manner that ensured that participants were accurately identified and described (De Vos, Strydom, Fouche & Delport 2009:346), they were information-rich nurses with vast experience. The researcher spent at least a minimum of 45-60 minutes per each participant which was deemed sufficiently in interacting them during the interviews to ensure an in-depth understanding of their experiences. A pre-test of the data collection tool was done on two (2) participants and the findings assisted the researcher to identify any aspects that needed modification and clarity. This assisted to further polish the grand tour and follow up questions. The pre-test enabled the researcher to refine the data collection instrument to efficiently and adequately address the study question.

3.5.2 Dependability

According to De Vos et al (2009:346), this is the stability of data over time and over conditions and the researcher’s attempts to account for such changes. The researcher utilised a digital recorder and transcribed the data verbatim to enable accurate capturing of the interview; and a second in the form of the researcher’s supervisor was used to conduct an enquiry audit in the middle and at the end of the study by scrutinising the data. The researcher made sure consent was obtained following a thorough process of mainly giving information, seeking permission, explaining benefits and risks, and purpose of the study.
3.5.3 Confirmability

The study guaranteed that the finding conclusions and recommendations were supported by the data and that there was an internal agreement between the researcher’s interpretation and the actual evidence (Brink 2003:118). All the interview transcripts were reviewed by the researcher’s supervisor to confirm the actual process of data collection, analysis up to conclusions and recommendations. Code books with all data related to interviews and observations were kept safe and secured to be access by any legal individual willing to confirm the study findings.

3.5.4 Transferability

According to Polit and Beck (2008:539), transferability is the extent to which the findings can be transferred to or have applicability in other settings or groups. The researcher carefully selected a proper site and participants sampling method and technique which represented the entire setting and population. The researcher gave detailed explanation of both site and participants of the study so that findings could be relevant to similar settings and participants.

3.6 CONCLUSION

This chapter presented an overview of the research design and methods. The next chapter presents analysis and description of the research findings.
CHAPTER 4

ANALYSIS, PRESENTATION AND DESCRIPTION OF RESEARCH FINDINGS

4.1 INTRODUCTION

This chapter focuses on the presentation and description of the study results. The chapter begins with a description of the data collection and analysis process. The final section addresses the participants' characteristics, followed by the important themes and categories which emerged from analysis of the interview data. The findings are than discussed with reference to the research objectives.

4.2 PURPOSE OF THE STUDY

The purpose of the study was to develop practice guidelines to promote adherence to infection control standards in a specific hospital in Manzini, Swaziland.

4.3 RESEARCH OBJECTIVES

The objectives for this study were to describe the methods used for infection control in the specific hospital, determine the factors affecting adherence to infection control standards amongst nurses and develop practice guidelines to promote adherence to infection control standards in the hospital.

4.4 DATA COLLECTION

4.4.1 Data collection process

Data was collected through individual in-depth interviews. Nine face-to-face interviews were held with participants who met the eligibility criteria as explained in chapters 1 and 3 of this study. The participants were nurses working in the selected units of the proposed hospital. The interviews took place at the hospital counseling room in mid-week days where staff complement is better to prevent disturbances on the normal
routine nursing duties. The interview dates and times were arranged ahead of time by working with the matron in-charge of the hospital, with the help of the unit managers who helped to set up appointments for the interviews with the participants. The interviews took place at the hospital in the different units in which the participants were working.

Each interview began with a brief introduction given by the researcher stating the purpose and objectives of the study. The participants were asked if an audio recorder could be used to record the interviews and all the participants agreed to be put on record. Written consent to participate in the study was provided by the participants. The form was prepared by the researcher before the study and the contents of the contents were read to the participants to seek their consent. As part of seeking consent for the study, the researcher informed participants that they were free to withdraw their participation at any time of the interview since participation was voluntary. In all cases, interview codes were used in the form of the number, unit and gender; in order to promote confidentiality and anonymity. The central question for the interviews was “Can you kindly describe the challenges you experience as a nurse with regards to adhering to infection control standards in your unit?”

4.4.2 Data management

The interviews were audio recorded. Each audio recorded during the interviews saved on the computer using a code not name, same with the notes taken were coded to represent participant. All written notes, signed consent forms and computer with audio recordings were kept in a safe lockable cupboard ready for analysis which was done for about 4 days per participant. Each audio recorded interview was listened to and written down by the researcher in the form of a verbatim transcript which was later analysed. During each interview, the researcher also took notes. The the verbatim reports were transcribed within a few hours of each interview, and the written notes were added to the relevant sections of the transcripts to support the data collected.

4.4.3 Interview schedule

Based on each participant’s response to the central question as stated earlier, the following questions on the interview schedule were used to probe the participants:
• Which infection control standards are used in the hospital and your units? (Please describe).
• In your own view, what are could be the factors affecting adherence to infection control standards amongst nurses, particularly in your unit?
• What factors should be considered when developing practice guidelines to promote adherence to infection control standards in the hospital?

4.4.4 Challenges encountered during interviews

Most of the interviews went as planned, however, the following challenges were encountered during the interviews:

• Some participants who were senior staff members in the unit encountered some disturbances from junior colleagues who came for consultation.
• Two participants signaled the need to answer their vibrating cellphones in the middle of the interviews. The audio recorder was stopped and after a few minutes the interviews continued. These were actually calls from pre-schools where their kids attend and they felt that it was very important to respond to the phone calls.
• There was an instance where the unit needed to get HIV test kits which were stored in the refrigerator located in the counseling room used for interviews. The researcher stopped the audio recorder and allowed the counselor to take the kits from the refrigerator, and later the interviews were resumed.

4.5 DATA ANALYSIS

Analysis involved breaking up the data into manageable themes, patterns, trends and relationships (Mouton 2008:108). It started immediately after data collection from each participant, qualitative content analysis was used where prominent themes and patterns were identified. The participants’ verbatim transcripts were read to get sense of understanding. Data was broken down into smaller units coded and named units according to contents they represented. Meaningful units were derived from narrative materials, the researcher verified the narrative material and aligned them
with established categories, and where needed these categories were redefined. Then similar categories were clustered into broad themes.

The researcher continued to read the entire sets of transcripts to get a sense of the whole from the participant’s description of the challenges of adhering to infection control. All significant statements were extracted from the transcripts and analysed to identify participant’s explanations of descriptions under study.

Below is an illustration of how the researcher started by obtaining significant statements from transcripts then formulated meanings and then finally identified themes which had different categories.

“Sometimes there is an issue of shortage in the middle of an emergency, we will be busy, and the issue of hand washing and proper disposal of waste is just done carelessly as you are running up and down trying to cover some gaps.”

<table>
<thead>
<tr>
<th>Significant statement</th>
<th>Formulated meaning</th>
<th>Theme</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Issue of shortage in the middle of emergency”</td>
<td>The unit had inadequate staff unable to cope during emergencies</td>
<td>The working condition for nurses</td>
<td>Shortage of nurses</td>
</tr>
<tr>
<td>“Running up and down trying to cover some gaps”</td>
<td>The insufficient nurses ended up compromising adherence to infection control standards as they tried to attend every client</td>
<td></td>
<td>Physical set-up of the unit according to proper client flow</td>
</tr>
</tbody>
</table>

At this stage of analysis the researcher attempted to formulate more general statements or meanings for each significant statement from the transcripts. Formulated meanings were developed for all significant statements followed by the researcher then beginning to arrange the formulated meanings into themes clusters.
4.6 DATA FINDINGS

The presentation of the findings begins with the characteristics of the participants followed by the participant’s narrative findings.

4.6.1 Participants’ characteristics

There were nine (9) professional nurses who participated in the interviews. The characteristics of the participants are described according to gender, clinical experience after completing basic nursing diploma in general nursing and department or unit allocation in the hospital. The graphs that follow depict the findings.

4.6.1.1 Participants’ gender

The participants’ gender indicates that there were 6 females and 3 male professional nurses as shown in figure 4.1.

![Participants' gender](image)

**Figure 4.1** Participants’ gender

4.6.1.2 Participants’ clinical experience

Figure 4.2 that follows shows the clinical experience in years for each participant. The clinical experience ranged from 2-11 years. It was necessary to describe the years of experience as this means that the participants would have knowledge of infection control measures.
4.6.1.3 Participants’ allocation in units of the hospital

Figure 4.3 that follows depicts the number of participants per sampled department at the hospital. The figure 4.3 displays the unit where the participants were allocated to work in the hospital, at the time of data collection. A total of 9 nurses participated, 2 from labour ward, 2 from surgical ward, 3 from emergency department, 1 from Intensive Care Unit and 1 from postnatal maternity ward. All these departments prioritised infection control standards, as they deal with procedures that are skin piercing, wound dressings, control of bleeding and also generate high infectious medical waste. Therefore strict adherence to infection control is very critical.
4.6.2 Participants' narrative findings

The participants’ narrative findings were translated into themes and categories, supported by meaning units. Table 4.2 presents the themes and categories together with their meaning units accordingly. Four (4) themes with individual categories emerged from the narrative findings.

Table 4.2   Themes and categories

<table>
<thead>
<tr>
<th>Themes</th>
<th>Categories</th>
<th>Meaning units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theme 1</strong></td>
<td>Category 1.1 Lack of infection control supplies and equipment</td>
<td>Nurses are working in units which critical supplies and equipment are unavailable.</td>
</tr>
<tr>
<td>The working environment for nurses</td>
<td>Category 1.2 Inadequate staffing and poor infrastructure</td>
<td>The units have less nurses staff numbers than patients and a flawed design.</td>
</tr>
<tr>
<td><strong>Theme 2</strong></td>
<td>Category 2.1 Performance of infection control standards</td>
<td>The nurse’s conduct and behaviour when performing infection control standards.</td>
</tr>
<tr>
<td>Nurses’ descriptions of infection control standards</td>
<td>Category 2.2 Nurses’ personal beliefs and ideas</td>
<td>Nurses believe infection control standards were meant to protect them from patients and environment.</td>
</tr>
<tr>
<td></td>
<td>Category 2.3 Knowledge of infection control</td>
<td>Importance of the nurse knowledge on infection control standards.</td>
</tr>
<tr>
<td><strong>Theme 3</strong></td>
<td>Category 3.1 Nursing theory and practice discourse</td>
<td>Nurses find a different practical setting in the field of work than that taught at the training institution.</td>
</tr>
<tr>
<td>Nurses’ challenges regarding adherence to infection control standards</td>
<td>Category 3.2 Nurses’ negative attitudes</td>
<td>Nurses develop and learn wrong short cuts and work precedents and trends as influenced by various factors in the field of work.</td>
</tr>
<tr>
<td></td>
<td>Category 3.3 Prioritisation of quantity and outcome of care</td>
<td>The level of nurse productivity in work setting is generally weighed in terms of quantity than quality.</td>
</tr>
<tr>
<td><strong>Theme 4</strong></td>
<td>Category 4.1 Protection</td>
<td>Safety and infection control standard measures.</td>
</tr>
<tr>
<td>Nurses’ expressed needs</td>
<td>Category 4.2 Ongoing In-service training</td>
<td>Training and skill development in adherence to infection control standards.</td>
</tr>
<tr>
<td></td>
<td>Category 4.3 Review of nurses’ performance appraisal system</td>
<td>Nurses’ appraisal system should have element of quality of adherence to infection control.</td>
</tr>
</tbody>
</table>
### Category 4.4: Support structures

- Hospital management to support infection control standard systems and processes in the hospital.
- Immediate supervisors and colleges has role to play in support and enable subordinates to comply to infection control standards systems in their department and lead by example.

### 4.7 DESCRIPTION OF DATA

#### Theme 1: The working environment for nurses

The working condition for nurses emerged as a theme was in relation to the lack of supplies and equipment, poor staffing with shortage of nurses in particular and inadequate unit infrastructure. The participants mentioned that there was a general lack of equipment and supplies very crucial to infection control standards, and some units had shortage of staff making very hard for nurses to efficiently provide quality nursing care to all clients.

It was also gathered that the units were initially poorly constructed; and even worse that currently were also not properly maintained. That on its own had a negative bearing to infection control. In some units, it was mentioned that there were instances where clients had to deliver on the floor because of shortage of beds, and that delivery was sometimes observed by a non-trained ward-aider as the few nurses available were engaged with other clients. The initial construction of the medical isolation unit with no windows and closer to a surgical unit of the emergency room has compromised the infection control standard in the department; and again it’s inside air extractors and air conditioners had not been working for over 8 months.

#### Category 1.1: Lack of infection control supplies and equipment

The participants cited lack of supplies and equipment as serious problems and contributory factors to failure to adhere to infection control standards. Although the hospital was trying to purchase the necessary equipment and supplies, the need was still very high. One participant indicates that:
“When you are trained on certain things, there are certain standards that you should follow, but when you get into the clinical setting you don’t find the things that you were trained with. For instance you are trained to conduct a delivery with a full delivery and that is how you are assessed during an examination. But when you get into clinical area, it’s a completely different kind of setting, you don’t have complete sterile delivery pack thus taking short cuts and ending up compromising the client quality of care, the things are not available as how you were taught” (Female, Labour ward).

The narrative by the participant indicates that the current working conditions do not support adherence to infection control; as it was further mentioned that there were inconsistent provision of infection control supplies like sterile delivery packs. The nurses ended up taking short cuts which compromised adherence to infection control. According to the participants, the unit protocols state clearly that each and every procedure must be conducted using a complete sterile pack but the hospital did not consistently provide the packs to nurses.

“The issue of lack of resources is vital, we don’t have soap here, we have just one towel used by every staff to wipe their hands for the whole day, I have never seen it changed” (Male, Emergency unit).

The participant’s description of the situation where the unit had no soap for washing hands is against the World Health Organization (2009) hand wash why, how and when guidelines which emphasise the use of soap for proper and effective hand washing. The towel used for wiping hands was used for a long time and by different people. Ideally, there should be plenty of towels so that they can be changed frequently to avoid cross infection. If not, use disposable paper towels.

**Category 1.2: Inadequate staffing and poor infrastructure**

The participants mentioned poor staffing particularly a very low nurse-patient ratio as one of the factors affecting infection control. It was revealed that one nurse finds her/himself responsible for many clients who expect same equal nursing services. That put pressure on most nurses; who find themselves doing short cuts and failing to adhere to certain important steps in adhering to infection control standards. A participant said:
“Staffing, the nurse patient-ratio has an impact, if I can nurse this 1 patient for maybe three hours, its highly possible to adhere to infection control, but currently with influx and lot of patient I find myself jumping from one client to another, there are some patients rolling over the floor, all beds full, there is no way for me to screen for infectious diseases, change gloves or wash hands, priority will be assist them to deliver and go to open space” (Female, Labour ward).

The participants cited a problem of poor infrastructure in the units as another contributory factor. The lack of isolation wards was something which forced the nurses to mix infectious with non-infectious clients; and this posed risks of cross infection. Some units had poor ventilation, and the hospital tried to install extractors which were not functional due to lack of maintenance. The initial ward construction plan did not include isolation wards. Most of the present isolation wards were supplementary structures which were not in the initial plan and therefore lacked basic structures of an isolation ward.

“Here at labour ward we don’t have an isolation unit, you can find patient with TB admitted here, so these clients are at labour and even if you realised that he has signs of TB or diarrhea you don’t have other options but to keep her on the same beds for everyone and that is no right at all” (Female, Labour ward).

Utilisation of isolation precautions is another additional important barrier that decreases the spread of infection. Taylor et al (2011:673) recommended that each ward should have a proper private room to be used for as an isolation room, and such room should have the basic components of an isolation room such as proper ventilation, protective clothing for staff and clients, disinfectants and adequate equipment. The participants from units which have an isolation room expressed lack of these important basic components and to them the whole objective of infection control was not met.

Some participants though acknowledged the fact that the hospital tried to provide extra rooms by converting some to be isolation rooms. However, due to lack space and land, the hospital found itself restricted in providing rooms and that is a situation which is beyond their control.
Theme 2: Nurses’ descriptions of infection control standards

The findings revealed that the participants mainly described infection control standards in terms of the way they perform them, personal beliefs and knowledge. It was evident that most standards are known and practiced in the wards but in a compromised manner. The participants mentioned that infection control standards seemed done to protect nurses from acquiring infections and nurses needed to be given on-going training on infection control as well.

Category 2.1: Performance of infection control standards

It was indicated that nurses practice infection control standards like hand washing but at an unsatisfactory manner. The underlying factors like poor staffing were mentioned which, according to Upshaw-Owens and Bailey (2012:79), it may significantly contribute to staff noncompliant to hand hygiene behaviours that can allow the spread of bacteria. This was also related to waste segregation where sometimes nurses just discarded to the closest bin despite its liner color coding. The participants also mentioned that some wards had enough supplies which could enable nurses to perform a complete infection control standard but one could realise that there was still a compromise in infection control standards. A participant had this to say:

“In this department we try to always adhere to infection control standards, this month we have been with TB clients in the unit for some time and we don’t have enough N95 masks. Each one of us has his/her mask and I have been wearing mine for the whole month now and I don’t think it serves the purpose but I tried to comply to the standard” (Male, Emergency ward).

The other participants suggested that nurses adhere to infection control standards. Wound care was done using sterile dressing pack and following a strict surgical aseptic technique. Proper waste segregation was well embraced because the ward aider made sure that all bins have appropriate liners and available to all sections and corners of the ward. One participant said:

“We make sure enough dressing packs are first packed and send for sterilisation and be collected early in the morning before routine wound care is
done, this enable us to see in advance whether we will need to borrow more sterile packs, and every nurse does a sterile procedure because everything is there. The ward aider always make sure all bins are covered with appropriate red and black liners at within reach to avoid long walking distances where people end up throwing at any nearby bin and it seems working for us" (Male, Surgical ward).

Category 2.2: Nurses’ personal beliefs and ideas

The findings indicated that nurses described infection control standards according to their own belief and understanding despite undergoing intensive training while at school. Nurses developed their own sense of judgments and opinions on infection control. It was indicated that nurses believed that infection control standards are basically for protecting nurses from acquiring infections as they treat patients in the health care facility. Whatever precautionary measures to be done were mainly for protecting the nurses, and clients came second or were not considered in this regard. A participant had this to say:

“To me adherence to infection control seems more important to me, it’s more beneficiary to me than client. I always remember to wash hands before taking food but I easily forgot to wash them when I am from one client to another. I think that we as nurses we are not capable of transmitting infection, we are more important therefore need to be protected” (Female, ICU ward).

Category 2.3: Knowledge of infection control

The participants were able to mention most of the infection control measures that they performed on a daily basis at their facilities. They acknowledged that it was important to adhere to the set standards as a means of assisting to protect clients from infection. This concurs with the findings of a study by Simelane (2006) where it was found that nurses had knowledge of infection control, were also aware of how and when to apply them but could not conform to practice. A participant indicated that:

“Common infection control standards we apply in this ward are mainly hand washing to remove microorganisms, sterile delivery of every woman, disinfection of beds after discharging patient, changing linen, segregating waste
red linear for medical waste like blood, human tissue (placenta), general waste in black liners like papers, food left overs, wearing gloves to protect spreading microbes from my hands to clients and others" (Female, Labour ward).

On the other hand the findings revealed a lack of infection control training particularly at the work setting. The only time they were intensively told about infection control was during their training. The participants were having clinical experience of up to 7 years therefore it was highly possible that they had forgotten some infection control standard measures. It was mentioned that with long service on the field the procedures one learnt at school becomes irrelevant as new equipment and supplies are introduced in the clinical area. Therefore nurses need to be updated on relevant infection control standards as participant commented that:

“My infection control knowledge has long ago diminished, I completed my general nursing 6 years back and I never attended training. We are short staffed, only supervisors go for these trainings and we are unfortunate that we have to always remain in the ward, we need new updates on using guidelines and procedures developed recently otherwise we will be left behind” (Female, Postnatal ward).

According to Upshaw-Owens and Bailey (2012:78), infections can be prevented, however, prevention efforts must be supported by infection control practices that address patient populations as well as staff members. The authors further mentioned that teaching daily prevention strategies to nurses and other health care professionals can decrease most infections.

**Theme 3: Nurses’ challenges regarding adherence to infection control standards**

Nurses’ challenges regarding adherence to infection control standards are discussed with regard to the categories of nursing theory and practice discourse, nurses’ negative attitudes and prioritisation of quantity and outcome of care. The participants acknowledged the presence of various challenges in adhering to infection control standards, and they were concerned about the urgent need to overcome those challenges and to correct the situation on the ground.
Category 3.1: Nursing theory and practice discourse

There was a feeling that nurses are taught infection control standards while at their respective training institutions but they do not always follow those guidelines when they are deployed at their various work stations. The participants reported to have observed colleagues failing to adhere to infection control standards when providing routine nursing care to clients, which support the conduct of this study. A participant indicated that:

“Most nurses are aware of the infection control standards but they don’t adhere to because even now things go out of stock, those working in the so called isolation unit go there without protective clothing and masks. Nothing much is said from the hospital side they only told us that they have ordered and it look no further push, and unfortunately nursing care has to continue therefore as nurses we found ourselves compromising the infection control standards” (Female, Surgical ward).

According to Taylor et al (2011:668), health care agencies must provide employees with the equipment and supplies necessary to minimise spread of infection. Infection control knowledge might not be transformed into practice in the absence of essential supplies and equipment; and it has been found that such situation occurs more often in the hospital.

Category 3.2: Nurses’ negative attitudes

The findings showed that some nurses have negative attitudes towards infection control standards. They just had the “I don’t care” attitude and depending on the influence of that particular nurse, such negative attitude can be spread to the rest of colleagues thus worsening the situation. A particular nurse would just do things not being taught despite the presence of supplies and equipment, but doing such without a specific valid reason. A participant had this to say:

“Socialisation at work place is vital, I think if supervisors and other senior nurses do not adhere to infection control themselves, it’s highly possible that other nurse’s fail as well, it’s like an infection process on its own. I can just throw a used glove in a black liner bin if I saw someone throwing it there, a
wrong precedent is easily follow able especially when seeing someone doing it, I feel like it’s doable in this department” (Female, ICU ward).

Ward supervisors are generally expected to lead, manage and mentor subordinates at work place, and adherence to infection control standards should be part of their leadership and management roles.

Rowley, Clare, Ruffell and Beer (2010:19) mentioned that leadership plays an important role at all levels, senior managers need to demonstrate their commitment to safety, for instance, by visiting clinical areas, because such visits have been shown to influence the nursing infection control and safety culture.

The findings from other participants did not favor this version. They believed that each professional nurse has ethical and moral values to adhere to despite peer and work related pressures or influences. Some participants said:

“You have been doing wrong things for a long time because of shortage of supplies, now you even fail to realise that things are normal now therefore I should do things right now. But your head keep on telling you that let’s just continue the way we have been doing things because the normality won’t last long anyway, we just have these for a short time, things will go back to old situation of shortage” (Female, Postnatal ward).

“When I joined the hospital, during those times they were enough supplies and equipment, but all of a suddenly this year things are not available, now I will be teaching or mentoring the younger staff with wrong things and this will create a long trend of wrong behaviours, we are training nurses that do not exactly the correct procedures. Much as they know the theory that they should was hands but they will be seeing senior staff washing hands without soap and think that that’s the correct way of doing things, and finally that will create a generation of poor nurses” (Female, Labour ward).

The participants mentioned the element of just not adhering to infection control standards with no valid reasons. Although certain work behavioural trends and practices had contributed to nurse’s failure to take extra precautions, it just became a bad habit or behaviour where nurses just failed to come to their senses of
acknowledging and properly using the available necessary equipment and supplies for infection control on that particular given time.

As part of behavioural and attitudinal change, Duval (2010:487) suggested that nurse should make a habit of using common infection control techniques, and as with other habits, infection control techniques must first be performed conscientiously and with repeated performance they will end up automatic.

**Category 3.3: Prioritisation of quantity and outcome of care**

The participants mentioned that the hospital priority was quantity than quality. Infection control standards was viewed to fall under quality; which was something less prioritised by the hospital management and delivery systems. Nurses themselves had adopted this belief where priority has been the number of clients seen, treated or offered services that focused on the quality of services as well. One participant said:

“It’s just that some supervisors we are with in this department they can’t emphasise the importance of adhering to infection control because they are with us, they can see the challenges when we are doing those nursing procedures. What becomes important is rendering nursing care, if I have to put an IV line, yah, it’s the outcome that is important not the steps” (Female, Surgical ward).

Nurses play a critical role in reducing incidences of nosocomial infections through adherence of infection control. Nosocomial infections are not there during client admission but usually manifest later after admission or after discharge (Taylor et al (2011:665). This means that somehow the client may have been treated for the primary condition but then acquired other disease(s) while in or out of the health care facility, and that particular client will suffer the consequences of nosocomial infections. The findings suggested that some nurses and their supervisors could not realise the damage caused to clients due to nosocomial infections. The nurses thought of assisting clients on their primary concerns with tangible health outcomes but compromising infection control standards was not a serious matter.
The participants mentioned the importance of having their performance appraisals assessed based on the quality of care as well. They indicated that their supervisors should include the element of adherence to infection control element, and it should be considered part and parcel of expected nursing health care measures.

“I think it’s very important to protect ourselves and clients as well, I have to make sure I wear a mask to prevent spread of infection to my clients, my performance based should also be based on the level I adhere to infection control. I may see twenty clients a day and that’s a huge number but its highly possible that I may infect all the clients and at the end of the day becomes as good as I haven’t see a client, worse part being that I have infected them or myself” (Male, Emergency unit).

**Theme 4: Nurses’ expressed needs**

The participants indicated that they were working under conditions which were risky; and therefore felt that proper infection control standards would be necessary to protect both the client and nurses. In-service training on infection control and a review of the entire approach towards the hospital appraisal system for nurses was reportedly essential.

**Category 4.1: Protection**

The participants mentioned that the hospital management has the obligation to provide sufficient supplies necessary for infection control to protect nurses from acquiring infections while providing nursing services. The findings also showed that most protective clothing like gowns, masks, and gloves are mostly unavailable while they are on high demand and almost used on a daily basis. Such a gap exposed nurses to serious risks of infection. A participant had this to say:

“Can you imagine the hospital cannot buy us gowns, I bought myself a gown I use on daily basis otherwise I would be helping clients without a gown as some of my colleagues do. I will go with this gown home to wash it and come back with it the following day something wrong, I am taking infections to my home but I have no option than sharing a single gown with everyone. I think sometimes we are not well protected in this ward, you are forced to wear
gloves which are not your size, for an example I wear size 6 and I has been out of stock ever since, I therefore have no options but to force other sizes, really sometimes there is no protection” (Female, Surgical ward).

The primary aim of using personal protective equipment in health care settings is to protect the skin and mucous membranes of health care workers from exposure to blood and body fluids (Damani 2012:147). The author further elaborated that it also prevents contamination of clothing and reduces the opportunity of spread of microorganisms from patients and/or fomites to other patients, staff and environment.

It was also revealed that the hospital emergency ward also attend to medical emergencies, like clients with TB who are put for observation for a certain period of time. The room had insufficient ventilation, and it was situated inside the emergency ward which was also responsible for children and injured clients. The doors were left opened and the nursing staff responsible did not have sufficient N95 masks. A participant indicates that:

“Look we treat clients with TB, we are not sure whether they have MDR as well, the last time we were given N95 masks was six months ago, we hang them over this wall and every time you come here you take one and its highly possible that you use someone else mask. The hospital must do something we are not protected here, we feel threatened, and it’s unfair” (Male, Emergency ward).

**Category 4.2: Ongoing in-service training**

The participants indicated that they also needed continuous on-the-job training on infection control standards. They were of the opinion that there are always new changes and developments in the nursing field; therefore staff needed to be given an opportunity to attend trainings.

Unfortunately factors such as staff shortage and high volume of clients often prevented the nurses from attending trainings and that resulted in infection control knowledge and skill deficit. The participants mentioned that:
“For me the issue of continuous on job education is critical, some nurses fail to adhere to infection control standard just because they lack education, they don’t know why hand washing, masking is done, they don’t know the rationale for some of these infection control measures” (Male, Emergency ward).

“I think there is an issue of lack of understanding the importance of infection control, we just know maybe partially about infection control, we haven’t seen a clients who got infections through our actions. So to some of us it’s like oh! there is infection control but we haven’t seen how badly an infection can destroy someone life, I think we need some training as well” (Female, ICU ward).

According to Singh et al (2012:189), the intention of providing a continuous training to all health care workers in infection control practices is to provide them awareness and tools necessary to participate knowledgably in the health care facility’s infection control programme thereby reducing the risk of infection to clients and to themselves.

**Category 4.3: Review of nurses’ performance appraisal system**

The participants expressed different views on the manner in which they were appraised or acknowledged by ward supervisor and management. Some mentioned that the current status quo has been that quantity of work is the most important factor where staff is assessed based on the number of clients rendered nursing care to. It was also mentioned that most failure to adherence to infection control might have been affected by factors related to quantity which most nurses believe should be the considered factor when they are appraised. The participants had this to say:

“I don’t think it would be fair for me to assessed based on quality, or how I adhere to infection control, but I think it should be based on the ability to clear all clients in the room within a short space of time to open space for other clients to come for delivery” (Female, Labour ward).

“In this ward the supervisor is seemed interested in the number of clients done daily dressings in the morning hours. When I am assigned to do dressings I will make sure that I push them so that by lunch time I would be done to impress
my supervisor, and there after I would feel great that I have done my job” (Male, Surgical ward).

The hospital staff could learn from the experience of Saint Francis Heart Center Hospital staff who made effort to meet the challenge for zero tolerance for infections. According to Au and Cregan (2011:102), in addition to some, they developed a performance improvement task force for infections and developed a process that allowed them to create a collaborative environment that led to employee and patient satisfaction with quality outcomes measured by using benchmark data. And those measures put in place were successful in creating a culture of decreasing infections in general, therefore quality approach in the staff performance appraisal can contribute to a general improvement in infection prevention and control in the health care facility.

On the other hand as probing continued some participants expressed the need for consideration of the quality aspect in staff performance appraisals sessions. The participants showed element of remorse, sympathy and expression of guilt as they recall the importance of adhering to infection control. The participants mentioned that:

“I seriously think that would be a very fair and sincere to be assessed based on level of adherence to infection control, I can see twenty clients a day, everyone will be happy but I could have infected all of them and that could be as good as I haven’t helped anyone but damaged everyone, oh my God” (Male, Emergency ward).

“As nurses we have to adhere in infection control standards, it’s good for us and client as well, I think its dual benefit it would be fair to be assessed also based in infection control adherence because that’s part of our job as nurse and we should do it. As much as you can see lot of patients per day and fall sick in two days’ time because you could have been infected, your production becomes zero based” (Female, Postnatal ward).

Category 4.4: Support structures

An effective infection control system in a hospital setting needs an entire involvement of other important support structures to enable staff to adhere to the standards. Nurses also require support from form hospital management and immediate supervisors from
each and every ward. The category of support deliberates on the findings obtained particularly on the two important support structures in the hospital. This category is explained with reference to support from management, and support from immediate supervisors and colleagues.

The participants mentioned that they received some form of support from management but not in a satisfactory manner. They believed that the main challenge of infection control which was lack of supplies and equipment had to do with lack of support from hospital management. A participant said:

“Hospital management supports but not fully, they don’t support because most of the time there is lack of supplies to use for infection control. Right now we have influx of clients, no space but they kept on allowing more clients to come into hospital knowing exactly that they don’t have resources” (Male, Emergency ward).

The findings related to support from management were that management has been supporting nurses to adhere to infection control in general through providing training, establishment of an active infection control committee and supporting departments in developing internal infection control policies. However, it was mentioned that although the turn over at the hospital was high, management did not employ nurses consistently to maintain their presence; thus making sure that nursing service continue. A participant said:

“We do get support from hospital management; they try to provide supplies and equipment, look I have been in other hospitals where things are horrible, I think here the management tries. Nurses are taken for trainings, there is an infection control committee, sterilisation machines are working and recently there were activities in the whole hospital where we were reviewing policies including those of infection control, I really think they are trying their best” (Female, ICU ward).

The participants mentioned that supervisors were aware of the challenges faced by nurses in adherence to infection control; as they worked with them on daily basis. The same supervisors placed orders for supplies but they were not provided with these supplies; and therefore were also demoralised. The participants preferred that their
supervisors should as well assist them in adhering to infection control standards despite the presence these challenges. One participant said:

“But then with all these challenges if our supervisors can be strict and be straight to the point and tell us that we just don’t need to compromise, either there is time or its emergency, you rather not do the procedure than infecting clients” (Female, Labour ward).

Some participants mentioned the limitations from their colleagues as something which made them to be less useful to them in terms of motivating and mentoring them to adhere to infection control standards.

The study revealed that senior nurses who should be exemplary were reportedly not adhering to infection control standards; as they seemed unclear and not willing to follow procedures and guidelines towards infection control. A participant had this to say:

“Infection control is important to clients, but our senior colleagues don’t correct or warn us, it’s just an element of ah!!! If everybody is doing it, no matter how bad it is, it then becomes a norm which everyone does” (Female, Postnatal ward).

Rowley et al (2010:19) when discussing team work in improving adherence to infection control measures, indicate that an estimated 80 per cent of health care errors are caused by human factors linked to poor team communication and understanding. Therefore, clear communication is essential to deliver high quality and safe work. The authors further mentioned that both senior colleagues in technical and non-technical interventions set daily goals, encourage and support communication between staff, they also provided junior staff with an opportunity to speak up about how practice can be improved.
4.8 DISCUSSION OF THE RESULTS

Theme 1: The working environment for nurses

The study revealed that the working environment for nurses was not a positive one. There were times where equipment and supplies useful for infection control was inadequate; thus making it difficult for nurses to adhere to infection control standards. The hospital could not provide consistently the necessary protective clothing to be used in isolation wards such as N95 masks, gloves, bin liners and gowns. This was contrary to the idea of Singh et al (2012:57-58) that protective clothing like mask, gloves, caps and shoe covers protects microorganisms from staff to clients or environment, therefore they should be properly donned and used to provide maximum protection.

Lack of supplies had completely changed the practical environment from the way nurses were told while at school. The nurses completely saw a different practical environment which did not support adherence to infection control standards. Lack of supplies became a norm in the hospital; and resulted in nurses adopting the system of improvising in the work area something which really compromises adherence to infection control standards.

It was also revealed that there was inadequate nurse staffing in majority of the wards. Nurse-patient ratio was high and that put pressure to nurses who found themselves overwhelmed by the influx of clients. The hospital being the second largest in the country had been receiving a lot of clients which the nursing staff could not handle. For example, in the labour ward a woman may not be offered beds as the ward would be in its full capacity. This could result in chaos where clients will lie on the floor. Nurses will be forced to conduct quick deliveries to open space and such pressure may compromise nurses’ adherence to infection control.

There was also failure from the hospital to provide proper isolations for all wards to cater for suspected and confirmed cases needing isolation. There were challenges of providing enough appropriate isolation rooms for each and every ward, nurses had difficulty to isolate clients suspected of infectious diseases. The current isolation infrastructures had several problems like poor ventilation, improper strategic location, lack of separate washing rooms, toilets and linen, above these the situation was also
worsened by the fact that it lack isolation supplies and equipment. The emergency ward had a medical section right within rooms reserved for surgical and pediatric observations with a door did not close properly, all clients in the ward being managed by same staff which lacked proper personal protective clothing. Taylor et al (2011:672) emphasised isolation technique as an important protective procedure that limits the spread of infectious diseases among hospitalised patients, hospital personnel and visitors.

A proper working environment should include consistent provision of infection control supplies and equipment, adequate nurse personnel and proper building and development of infrastructure, all these geared to support nurses to adhere to infection control standards.

**Theme 2: Nurses’ descriptions of infection control standards**

According to the findings participants described infection control standards satisfactory, but unfortunately its adherence has been poorly done. Participants had challenges to at least complete a single infection control measure without compromised as a result of underlying challenges like shortage of supplies and unfavorable conditions. Simple procedures like hand wash should be supported and given priority because, according to Smeltzer et al (2010:2125), the most frequent cause of infection outbreaks in health care institutions is spread of microorganisms by the hands of health care workers. Unfortunately hand washing was partially done because there was lack of soap or only one towel available to swap hands for the whole day, as much as participants would try to wash hands but it would not be a complete proper hand washing procedure. The performance of infection control standards were explained as a difficult task to accomplish despite willingness to fully comply, the situation simply did not support compliance to infection control standards.

The study also revealed that the participants thought that infection control standards were basically done to only protect them from being infected by clients and the hospital environment. They did not believe that patients as well are beneficiaries. That belief had actually resulted to the participants being careful to protect themselves but careless to protect clients. An example was that a nurse would wash hands before eating but would not bother to wash hands when examining one client and the next. The infection
control standards were wrongly described and misinterpreted by participants and that led to wrong behaviours that compromised adherence to infection control. Singh et al (2012:127) has expressed the importance of educating health care workers with updated infection control information especially those who have been in the field for longer period on regular basis as another means of promoting health care worker’s adherence to infection control standards.

It was also interesting to note that the participants had knowledge of infection control standard measures. They could list majority of such measures which are most often done at their respective wards. The study revealed that the participants knew the purpose and importance of each infection control measure mentioned. However, the participants mentioned the need to be more trained on infection control standards, especially because the standards are improved as situations change.

**Theme 3: Nurses’ challenges regarding adherence to infection control standards**

According to the findings nurses’ challenges regarding adherence to infection control were overwhelming. It was indicated that the nurses were aware of their inability to efficiently adhere to infection control standards thus willing for a quick solution to the challenges. According to Taylor et al (2011:653), nurses as primary givers, are involved in identifying, preventing, controlling and teaching the patients about infection; and are also aware that prevention of infection is their major focus. The participants had observed a total different situation altogether as they entered the working field from what they were taught at school, adhering to infection control standards became difficult to them as they experienced a situation of improvising due to different reasons. There was an obviously clear nursing theory and practice discourse happening in the different wards observed from their colleagues. The new nurses found themselves not following the correct infection control principles. The study showed that the participants were easily derailed from the normal infection control standards they were taught during training as they approached the practical clinical environment which had critical infection control short falls. They could not abandon provision of nursing services but they had to compromise the infection control standards, thus committing an intentional theory and practical discourse.
The study also revealed that nurses had a negative attitude towards infection control, despite knowledge and skills obtained during their training. Some still did not want to adhere to infection control standards. For example, a professional nurse would reportedly just deliberately do something totally wrong, something never taught despite the presence of basic necessary support to adhere to infection control standards. The other serious implications to that shortfall were that such nurses could not realise that they were doing something unacceptable. The study identified that such behaviour might also be facilitated by nurses observing their supervisors and colleagues conducting themselves in a wrong manner of failing to adhere to infection control standards and that is why they could not give scientific rationale for their wrong doings.

The study also showed that the hospital was interested in quantity and outcome of care from the nursing services; with less priority given to quality of nursing care which also included adherence to infection control standards. The number of clients seen and attended was mostly important especially in wards like labour and emergency wards. The nurses as well had adopted the notion of impressing their supervisors based on quantity rather than quality. Above that; nurses were yearning to be encouraged and appreciated on their effort towards improving quality, especially the effort placed on the level of adherence to infection control standards.

**Theme 4: Nurses’ expressed needs**

The findings revealed an important need for adequate protection from infection either from clients or hospital environment while at work. This has also been emphasised in the 1992 Occupational Safety and Health Administration ruling where health care agencies are tasked to provide employees with the equipment and supplies necessary to minimise or prevent exposure to infectious material (Taylor et al 2010:669). Lack of infection control equipment, supplies and infrastructure was seriously exposing the nurses to high risk of infection. Lack of soap for an example had rendered the nurses to not washing hands at all; thus endangering their lives; and that of their patients and families with cross-infection. The nurses consulted with hospital management to improve staff protection by providing enough supplies and conforming to required infrastructure standards for isolation.
The findings indicated a need for more systematic in-service training to enrich and improve the nurses with knowledge and skills for infection control. It was indicated that the training should be for all nurses; and that there should be a system to ensure that every nurse gets an opportunity to be trained despite shortage of staff and influx of clients in the hospital. The nurses were reportedly unable to attend trainings because they had to cover wards and continue to offer nursing services during those scheduled trainings. There was a strong opinion that proper systems need to be developed to make sure that every nurse gets that equal training opportunity.

Cherry et al (2012:410) mentioned that continuous educational trainings can have more impact than single educational trainings in sustaining behavioural change in health care workers, and first step towards such improvement in infection control compliance should be to target educational interventions in areas where compliance to best-practice is poorest. These trainings should target those units which are short staffed and therefore chances of attending these trainings were low, it can be later rolled over to other staff.

The study also revealed the participants’ need for the current nurses’ performance appraisal system review. The nurses felt that it quantity based than quality therefore it encouraged both nurses and supervisors to focus on quantity of work than quality of work which includes adherence to infection control as well. The general performance appraisal for nurses considered number of clients serviced, like in emergency department, the priority was how many clients were seen that level of quality nursing rendered to clients. The findings associated failure to adhere to infection control standards as influenced by the performance appraisal system and general appreciation from supervisor based on individual nurse to render services to many clients at a short space of time.

For the support structures the findings indicated that the participants did not receive enough support from the hospital management and supervisors. An effective infection control system in a hospital setting needs an entire involvement of other important support structures to enable staff to adhere to the standards. Singh et al (2012:5) explain that the importance role of the infection control committee which also include managers as that entire support, ensuring availability of supplies and providing consistent staff trainings.
The study revealed that most nurses believed that the hospital management systems were the key factor to the inadequate provision of equipment and supplies. There were gaps with the manner at which various departments should work to enable a consistent provision of necessary supplies. For an example it was mentioned that the common reasons stated for inadequate supplies were that hospital management is working on the purchasing process like placing orders, payments process and long delivery time.

On the other hand the hospital management did provide some form of support. Although supplies may not be enough, the nurses who left the hospital were replaced, trainings were organised for the staff and again there was an establishment and review of departmental infection control policies supported by the management. According to the findings, the nurses appreciated the support from management as an important player, but then they also strongly felt that hospital management should do more to assist in adherence to infection control standards.

The findings indicated that the supervisors failed to support participants to adhere to infection control; and would not supervise them specifically on infection control issues. It was also revealed that the main reason could be that those supervisors themselves knew the difficulties of adhering to infection control standards in the hospital.

4.9 CONCLUSION

In this chapter data was collected from nine participants and analysed using the qualitative analysis method of data analysis. Four themes emerged from the study being the working environment, nurse’s descriptions of infection control standards, nurse’s challenges regarding adherence to infection control standards and nurse’s expressed needs. In the next chapter the conclusion and recommendations will be presented.
CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The objective of this chapter is to provide the study conclusions, limitations and recommendations. The purpose of this study was to develop practice guidelines for nurses’ adherence to infection control standards in a specific hospital at Manzini Swaziland.

5.2 RESEARCH DESIGN AND METHOD

Individual in-depth interviews were conducted from carefully selected nurse participants with clinical experience. This qualitative, descriptive and explanatory design aimed at determining the extent at which nurses adhered to infection control standards. Data analysis was done following the qualitative content analysis, and the findings indicated that nurses had challenges in adhering to infection control standards. Finally the findings were used to develop the guidelines to promote nurses’ adherence to infection control standards.

5.3 CONCLUSIONS

Emerged themes were as follows:

Theme 1: The working environment for nurses

The working environment was recognised as a theme with regard to the unavailability of required equipment and supplies which could have supported the nurses to adhere to infection control standards. It was described as different from what they were taught; and equipment and supplies they were familiarised with while at school were not available at their working environment and that made hard for them to adhere to infection control standards. The working environment was also reported to be short staffed with high influx of clients thus increasing the nurse-client ratio; and that led to
compromise in adherence to infection control standards. From the same theme, isolation room’s infrastructure in each wards were identified as not up to standards of infection control, they had indications of lack of proper equipment and supplies.

**Theme 2: Nurses’ descriptions of infection control standards**

Infection control standards were described by the nurses as poorly followed because of several adherence challenges. The findings revealed the difficulty experienced by nurses to complete a single nursing procedure without compromising adherence to infection control. Infection control standards were wrongly misunderstood and that led wrong behaviours which compromised adherence to infection control.

**Theme 3: Nurses’ challenges regarding adherence to infection control standards**

The findings also indicated that nurses had a negative attitude towards infection control. Supervisors and other nurse colleagues might have contributed to such negative conduct of non-adherence to infection control. The hospital was more interested in quantity than quality of care which also had to incorporate the issue of adhering to infection control.

**Theme 4: Nurses’ expressed needs**

The study revealed the nurses expressed need for adequate protection from infection while at work. The challenges they experienced in adhering to infection control standards puts them at higher risks of being infected, and hospital management did not provide them with the necessary protection they deserve. The nurses needed an effective and efficient in-service training on infection control to be attended by all nurses despite challenging situations which might prevent nurses from attending like staff shortage and influx of clients. The study revealed nurse’s need for change of performance appraisal system which focusses nurse’s performance in adhering to infection control standards.

There was lack of proper collective support from hospital management system especially in providing equipment and supplies to be utilised for infection control. There were various gaps identified within various departments which were supposed to work
together in planning, purchasing, storage, distribution and feedback communications of entire infection control system of the hospital.

5.4 GUIDELINES TO PROMOTE NURSES’ ADHERENCE TO INFECTION CONTROL STANDARDS

The findings factors contributing to non-adherence to infection control standards, which were related to the challenges encountered during their day to day rendering of nursing services at the hospital. The findings call for current and practical based guidelines for nurses to adhere to infection control standards. The guidelines could provide the hospital management, supervisors and nurses a direction on support to adherence to infection control standards in general.

Five guidelines are presented based on the study findings. The challenges and expressed needs were all considered to be important factors to be looked at and these guidelines were formulated from them. Each guideline is formulated based on an identified problem; and additional rationale to each guideline is presented and these guidelines will be referred to Ministry of Health, Swaziland Nursing Council, hospital management, supervisors and entire nursing staff upon completion of this study.

5.4.1 The working environment for nurses

*Guideline 1: Create a conducive and supportive working environment that promote nurse’s adherence to infection control standards in the hospital.*

- Create standard lists of infection control basic equipment and supplies per ward.
- Establish maintenance plan for purchased equipment and replacement of supplies.
- Develop hospital infection control management system involving planning, procurement, storage, distribution, monitoring and feedback usage, stock and procurement of supplies.
- Purchase and distribute all necessary equipment and supplies for infection control to relevant wards.
- Provide isolation rooms which meet basic isolation standards and proper location for each ward with necessary equipment and staffing.
• Create staffing plan with adequate and relevant nurses for each ward, taking into consideration the nurse-patient ratio.
• Create ward environment that is equivalent to training environment in terms of equipment and supplies to close gap between training and work environment.

Rationale: To enable a consistent supply of equipment and supplies, provision of staff and proper isolation rooms.

5.4.2 Nurses’ descriptions of infection control standards

Guideline 2: Ensure re-enforcement of the emphasis of infection control standards importance to both client and staff in health setting.

• Provide and make nursing procedure manuals available in each ward for nurses to refer when necessary.
• Encourage a positive work atmosphere in the wards where nurses mostly work in pairs when doing procedures to mentor, correct and motivate each other.
• Provide an additional explanation of beneficiaries whether it is a client or staff to every infection control procedure guidelines or manuals to be used by nurses.
• Involve clients and explain precautionary measures to be taken to protect them from acquiring infections and allow them expression of ideas.
• Provide health education to clients on infection control measures every time during a nursing procedure.

Rationale: To enable the nurse to acknowledge and appreciate the objective of infection control standards as beneficiary to themselves and clients.

5.4.3 Nurses’ challenges regarding adherence to infection control standards

Guideline 3: Conduct a situational analysis of the instability and unprecedented ward situations and nurse behaviours when developing infection control policies.

• Consider and include situations where there would be inadequate equipment and supplies, provide reasonable non compromising options.
• Consider unexpected conditions like staff shortage and influx of clients, also provide reasonable options to avoid compromise to infection control standards.
• Involve nurses in development of infection control policies and encourage their participation and test practicality as well.
• Give scientific clinical rationale for each infection control step to emphasise its importance therefore sealing it mandatory to be done.
• Design nursing quality check list per ward to enforce compliance to quality by nurses.

Rationale: To eradicate the negative attitudes nurses had towards infection control and provide practical policies applicable at different situations.

5.4.4 Nurses’ expressed needs

Guideline 4: Safeguard the protection of nurses from possible infection and providing training on infection control.

• Hospital has to provide and maintain constant supply of all protective clothing for staff.
• Develop check list for all necessary protective clothing for staff in all wards.
• Initiate a clinical screening system of possible infectious diseases for all nurses in the wards.
• Provide an effective and efficient in-service training for all nurses on infection control.
• Encourage periodic reading and review of infection control policies in the wards.
• Invite nursing school participation in improvement systems of infection control in the wards.

Rationale: To equip and skill nurses to be able to protect themselves from acquiring possible infections at workplace.
5.4.5 Support structures

Guideline 5a: Strengthen and capacitate the hospital infection control committee.

- Follow and comply with isolation room construction and maintenance guidelines for all isolation rooms of the wards.
- Engage staff and encourage feedbacks on infection control processes of the hospital.
- Ensure functional and reliable mechanism of maintaining constant provision of necessary equipment and supplies for infection control in the hospital.
- Allow professional advices form infection control experts for improvement.

Rationale: To ensure that hospital top management respond positively to hospital infection control issues raised by nurses.

Guideline 5b: Encourage ward supervisors to prioritise infection control standards to nurses.

- Identify and capacitate ward infection control focal persons.
- Provide enough infection control guidelines and procedure manuals in the wards for staff referencing.
- Perform regular staff acknowledgements and appreciation on infection control quality.
- Develop infection control quality checklists for staff for assessing performance.
- Supervisor compliance to set standards for infection control.
- Encourage staff participation in meetings, debriefings and sessions for infection control in the wards.

Rational: To assist hospital top management and ward supervisors to support nurses to adhere to infection control standards.

5.5 RECOMMENDATIONS

The following are the recommendations from the study:
5.5.1 Recommendations for further research

- The evaluation of the effectiveness of training on importance of infection control in nursing units in general.
- The experiences of infection control committee personnel in hospitals.

5.5.2 Recommendations for nursing practice

- Develop infection control standards in-service training protocol for general hospitals.
- Implement and adhere to the guidelines to assist nurse’s supervisors to mentor, monitor and evaluate nurses’ adherence to infection control standards in a general hospital.
- Establish infection control systems procedures for general hospital management to consult for an effective and efficient operation systems.

5.6 CONTRIBUTIONS OF THE STUDY

The study will contribute towards the understanding of the general challenges encountered by nurses in adhering to infection control standards. The researcher will communicate the findings and findings to the hospital management and other relevant stakeholders like nursing training school and nursing council. The study findings will be disseminated through presentations at the relevant workshops and conferences, and through publication in accreditation nursing and medical journal relevant to the target readers.

5.7 LIMITATIONS OF THE STUDY

The limitations were that the study was conducted in one hospital in Manzini Swaziland and therefore the findings cannot be generalised to other general hospitals. A sample of 9 nurses working in 5 wards prioritising infection control was included; and therefore if a bigger sample from all the departments/wards from the hospital was used, the results might have been different. Again the findings might be different if the study was conducted in another hospital in a different geographic area of Swaziland.
5.8 CONCLUDING REMARKS

The study findings revealed the need for practical based guidelines for nurse’s adhering to infection control standards, as nurses had challenges to adhere to infection control standards. The outcomes of these challenges of adherence to infection control standards has led to compromised infection control measures in the hospital which put the lives of clients and nurses at risk.

The practice guidelines are designed to provide the hospital management, supervisors and nurses a direction in terms of supporting an adherence to infection control standards in general. The unexpected positive outcome of the study was that the participants got an opportunity during the interviews to realise the possible risks they had imposed to clients and themselves; as they somehow failed to adhere to infection control standards due to different challenges. The researcher himself was moved by some of the expressed experiences.
LIST OF REFERENCES


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ANNEXURE A

ETHICAL CLEARANCE CERTIFICATE

Approval of research study by the Higher Degrees Committee of the Department of Health Studies
UNIVERSITY OF SOUTH AFRICA
Health Studies Higher Degrees Committee
College of Human Sciences
ETHICAL CLEARANCE CERTIFICATE

HSHDC/190/2013

Date: 3 July 2013
Student No: 4808-020-9

Project Title: Adherence to infection control standards by nurses in a specific hospital in Manzini, Swaziland.

Researcher: Simelane Sibusiso Chalzela

Degree: MA in Nursing Science
Code: MPCHS94

Supervisor: Dr MC Matlakala
Qualification: D Litt et Phil
Joint Supervisor: -

DEcision of Committee

Approved [✓] Conditionally Approved [ ]

Prof L Roets
CHAIRPERSON: HEALTH STUDIES HIGHER DEGREES COMMITTEE

Prof MM Moleki
ACTING ACADEMIC CHAIRPERSON: DEPARTMENT OF HEALTH STUDIES

PLEASE QUOTE THE PROJECT NUMBER IN ALL ENQUIRES
ANNEXURE B

LETTER REQUESTING PERMISSION TO CONDUCT THE STUDY
Dear Doctor

Re: Request for permission to conduct research at Manzini hospital

I am a post graduate student registered for the Master of Arts (Health Studies) programme at the University of South Africa. As part of my study, am required to conduct a research project.

The topic for my research project is: **"Adherence to infection control standards by nurses in a specific hospital in Manzini, Swaziland"**

I would like to conduct the research in RFM hospital in Manzini. The purpose of this letter is to request permission to be allowed to collect data from the registered nurses working in the proposed hospital. After the study, findings will be shared with your office.

Attached/enclosed with kindly receive a copy of the research proposal and the ethical clearance certificate from the academic institution.

Yours Sincerely,

MR-SC Simelane

Research Student: 4808-020-9 Contact +26876078057
ANNEXURE C

HOSPITAL APPROVAL TO CONDUCT THE STUDY
03 November 2014

Mr. S.C. Simelane
P O BOX C1894
Hub Manzini
M223
Swaziland

Dear Sir

RE: AUTHORIZATION TO DO A RESEARCH IN THE HOSPITAL

Your application on the fore mentioned endeavors has been duly considered and Authorization granted on the following conditions please;

a). That confidentiality is strictly observed
b). That the hospital receives a copy of the report on the proposed Internship Training.

Again thank you for considering the Institution for such a task and wishing you all the best.

Sincerely yours

Leonard S. Dlamini (Mr.)
HOSPITAL ADMINISTRATOR

CC: Senior Medical Officer- Administrative
    Senior Medical Officer - Clinical
    Matron 1
ANNEXURE D

CONSENT FORM
CONSENT FORM

INFORMED CONSENT FORM TO PARTICIPATE IN THE STUDY

I am Sibusiso Chalazela Simelane a post graduate student registered for the Master of Arts (Health Studies) programme at the University of South Africa. As part of my study, am required to conduct a research project.

The topic for my research project is: "Adherence to infection control standards by nurses in a specific hospital in Manzini, Swaziland".

The purpose of the study will be to develop practice guidelines to promote adherence to infection control standards in a specific hospital in Manzini, Swaziland.

You are requested to voluntarily participate in the study and therefore to take part in the individual interviews that will be conducted. You may withdraw from the study at any time and your name will only appear on the consent form. All information furnished will be treated with strict confidence.

Although there are no financial benefits for you in participating, the study results will be used to design support guidelines to assist health professionals to adhere to infection control standards in the health care centers.

Should you have any questions or desire further information please contact, Sibusiso Simelane +26876078057

Thank you for your co-operation and support, please sign below to acknowledge your agreement to participate in this study.
I………………………………….. (Name and Surname) agree to participate in the above-mentioned study.

I understand

- the purpose of the study
- that participation in the study is voluntary
- that information shared will be confidential

Signature of participant…………………………

Signature of witness……………………………..

Date……………………………………………. 
ANNEXURE E

DATA COLLECTION TOOL
DATA COLLECTION TOOL

Section 1

Participant information

<table>
<thead>
<tr>
<th>Participant Code</th>
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<tr>
<td>Sex</td>
<td></td>
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<tr>
<td>Highest nursing qualification</td>
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</tr>
<tr>
<td>Clinical experience (post diploma qualification)</td>
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<td>Ward, Unit, Department</td>
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</tbody>
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Section 2

Questions from this section are about adherence to infection control standards by nurses in the hospital.

Grand tour/central question

Can you kindly describe the challenges you experience as a nurse with regards to adhering to infection control standards in your unit?

Follow up questions

1. Describe the infection control standards used at your hospital department/unit.

2. In your own view what could be the factors affecting nurse’s adherence to infection control standards particularly in your department.

3. In your own view, what factors, circumstances or situations in general should be considered when developing practice guidelines to promote nurses adherence to infection control standards.