

**Experiences of the University of the Western Cape student nurses who  
sustain needle-stick injuries during their clinical placement.**

**by**

**Mogasweri Naidoo**



UNIVERSITY *of the*

WESTERN CAPE

**Student Number: 2724839**

**A mini-thesis submitted in partial fulfilment of the requirements for the  
degree of Magister Curationis in the School of Nursing, Faculty of  
Community and Health Sciences, University of the Western Cape.**

**Supervisor: Dr. J. D. Jeggels**

**November 2010**

**DECLARATION**

I declare that: *The lived experiences of student nurses who sustain needle stick injuries in their clinical placement* is my own work and it has not been submitted for any degree or examination at any other University and that all the sources have been indicated and acknowledged by complete references.



Mogasweri Naidoo

November 2010

Signed.....

## KEYWORDS

- Needle-stick injuries
- Student nurse
- Exploratory study
- Phenomenology
- Lived experiences
- Traumatic event
- Emotional response
- Skills laboratory
- Clinical placement/setting
- South Africa



## LIST OF ABBREVIATIONS

- UWC - University of the Western Cape
- SON - School of Nursing
- HEI - Higher Education Institution
- NSI - Needle-Stick Injury
- HIV - Human Immuno-deficiency Virus
- HBV - Hepatitis B Virus
- HCV - Hepatitis C Virus
- ART - Anti-Retroviral Treatment
- PEP - Post Exposure Prophylaxis



## **DEFINITION OF CONCEPTS**

**Needle-stick injury:** is a percutaneous injury caused by hollow-borne needles, suturing needles, scalpels and lancets (Ebrahimi & Khosravi, 2007: 56)

**Anti-retroviral treatment (ART):** are drugs which is given to HIV positive patients/clients to achieve HIV viral suppression and reduce the level of HIV RNA to as low as possible, for as long as possible (Evian, 2006: 79)

**Clinical skills:** is a set of practices that is learnt through repetitive behaviour until competence is achieved. These skills are performed in service settings on patients and clients.

**Student:** is a person who is studying, especially at a university or another place of higher education (Reader's Digest Complete Word finder, 1993: 1547)

**Nurse:** A nurse is a person who is specially prepared and registered to provide care for the sick, wounded or helpless as well as those with potential health problems (Freshwater & Maslin-Prothero, 2005: 400) For the purpose of this study it refers to students who are enrolled in the four-year undergraduate nursing programme at the School of Nursing (SoN), University of the Western Cape (UWC).

## **DEDICATION**

I dedicate this work to my friend, the late

CAROL HEATHER WAGNER

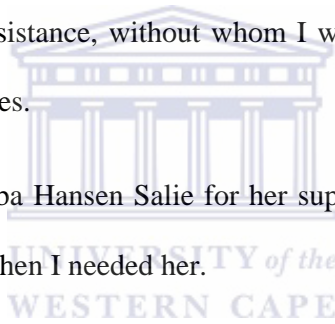
For her spirit and encouragement



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## **ABSTRACT**

An estimated 12 billion injections are administered annually worldwide and result in two million needle sticks each year in health workers. Needle-stick injuries occur worldwide on a daily basis. These injuries are traumatic experiences which if not handled correctly may have devastating psychological effects on the student nurse. The researcher proposed to explore the lived experiences of student nurses in the undergraduate programme at the University of the Western Cape (UWC), Cape Town, who had sustained needle-stick injuries during their clinical placement to uncover the meaning that these lived experiences had to the student nurses.

The researcher, through her clinical supervision of the BCur undergraduate nursing students at the School of Nursing (SoN), University of the Western Cape (UWC) suspected that needle stick injuries sustained by student nurses are being mismanaged in the service settings and that the phenomenon of a needle-stick injury had far reaching emotional and physical effects on the student nurse.

In this study a qualitative phenomenological approach was used because the researcher identified it as the most appropriate method to do this study. The population under study was the student nurses studying towards their BCur nursing degree at the SoN at the UWC. A purposive sample consisting of 8 respondents were selected, aged between 19 and 32.

The data were collected through unstructured, in-depth interviews lasting for about 1 hour. The responses from this type of data collection provided the researcher with 'rich' details of the student nurses experiences of the needle-stick injury. The core principles of Phenomenology focus on the 'lived' experiences of an individual and the researcher chose the unstructured, in-depth interview to collect the data in this study because it was the most appropriate method of obtaining the data. Participation in the study was voluntary and



informed consent was obtained from the respondents prior to the commencement of the study. An inductive theory was used as a framework to guide the data analysis process because through the process of analysing the data, categories and themes emerge. Findings from the study revealed the following: a needle-stick injury is considered to be a traumatic incident that students react in various ways to the traumatic incident, that several intervening factors precede the incident and lastly that the students need support following the incident.

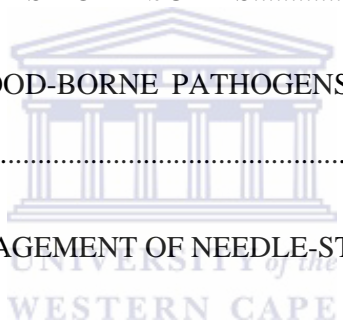
These research findings indicate a need for the provision of a structured preventive and promotive programme relating to needle-stick injuries for the student nurses. Clinical procedures should be revised to ensure the safety of students when they work with sharp instruments. The knowledge about policies and procedures relating to the management of needle-stick injuries should be reinforced to both staff and students.



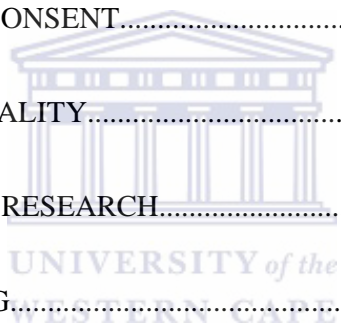
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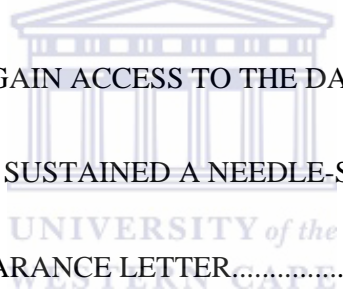
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# CHAPTER ONE

## ORIENTATION TO THE STUDY

### 1.1 Introduction

The acquisition of a new clinical skill is one of many learning outcomes that student nurses have to master. Learning to become adept at using a needle and syringe for the administration of medication to a patient is an example of such a skill. In undergraduate nursing programmes student nurses are expected to perform invasive procedures such as the administration of injections via the intramuscular or subcutaneous routes.

Student nurses by virtue of their 'student status' are novices upon entering the undergraduate programme. Benner (1984) suggests that students apply the Dreyfus Model of Skill Acquisition to develop clinical competence in nursing. The model proposes that in the acquisition and development of a skill, a novice must pass through a number of levels of proficiency. Benner describes a novice as a beginner who has no experience of the situation in which they are expected to perform. Novices are governed by rules which are extremely limited and inflexible.

Student nurses in the undergraduate program at the School of Nursing (SoN), University of the Western Cape (UWC) are required to perform clinical procedures as part of their learning outcomes. These students initially perform non-invasive procedures in their first-year and progressively perform invasive procedures throughout the four year programme. The students are able to practise these procedures in the skills laboratory at the UWC prior to performing the procedures on 'real patients' in the real world setting. The skills laboratory setting provides a safe environment where the students are able to practise on simulated patients and



mannequins. Clinical procedures may be practiced repeatedly in the simulated setting until the student becomes competent.

Feather and Fry (2009:456) as cited in Fry, Ketteridge and Marshall (2009) state that simulation has many advantages and learning can occur without the risk to patients. Students can be allowed to make mistakes and learn from these mistakes. The authors' further suggest that practical skills can be developed in a systematic, supported manner, which can be difficult to achieve in busy practice environments. The immersion of 'novices' in a real world setting with real patients may increase the risk of sustaining needle stick injuries especially if the student (novice) is still inexperienced and unskilled.

Student nurses are exposed to 'concrete experience' in the real world setting and this allows for the development of 'lived experiences'. Kolb (1984), in his theory on Experiential Learning suggests that, concrete experiences which elicits specific feelings in the student, facilitates the development of the attributes of reflective practise. The affective learning environment according to Kolb (1984: 198) emphasizes concrete experiences so that students actually experience what it might be like to be a professional in a given field of study. He further suggests that the concrete experience mode is characteristic of learners who desire plenty of opportunities for direct human interpersonal reactions and these individuals also prefer to feel and experience rather than to think (Kolb, 1984: 204). Kolb's theory of Experiential Learning can therefore be applied to the practise of nursing as the profession is based on clinical teaching and learning that allows for the development of lived experiences for the student nurse.

This research study describes the experiences of student nurses who sustained needle-stick injuries during their clinical placement. It is also aimed to uncover the meanings that these

lived experiences have for the student nurses. The study will be conducted at the SoN, UWC in Cape Town.

## **1.2 Background/Rationale**

The World Health Report (2002: 73) reported that out of an estimated 2 million percutaneous injuries which occurred annually in health care workers worldwide, 40% of Hepatitis B Virus (HBV), 40% of Hepatitis C Virus (HCV) and 2.5% of Human Immuno-deficiency Virus (HIV) infections, were due to needle-stick injuries.

The three studies undertaken in South Africa were: the doctors' experiences after a needle stick injury (Moody, 2002), experiences and reasons why health care workers report injuries (Williams, 2005) and the experiences of all levels of nursing staff in a service setting, about the possibility of acquiring HIV infection after injury (Ziady, 2007). The researcher has identified a gap in the literature with regards to the lived experiences of student nurses following percutaneous injuries. Statistics obtained from the SoN, UWC has revealed that over a period of 3 years (2007-2009), approximately 50 needle stick injuries/blood exposures were reported.

The researcher at present supervises the student nurses of UWC in the hospitals and clinics and has had to support students who sustained needle-stick injuries. Uncertainty about the management of the students at the clinical settings resulted in the delay of treatment after the needle-stick injuries. For the above-mentioned reasons an exploratory study into the phenomena of needle-stick injuries as experienced by student nurses is indicated.

The research question for this study is formulated as follows: What are the lived experiences of student nurses following a needle-stick injury during their clinical placement?

### **1.3 Purpose of the Study**

The purpose of the study was to explore the lived experiences of the student nurses at the UWC, SoN who sustained needle-stick injuries during their clinical placement.

### **1.4 Research Problem**

The largest amount of people infected with HIV is living in Sub-Saharan Africa. Two-thirds (64%) of the population are living with HIV while three-quarters of infected women live in Sub-Saharan Africa (Whiteside, 2008: 6). The author also reports that Southern Africa has the worst epidemic and the number of people infected with HIV is still increasing and statistics obtained from South Africa's antenatal clinic survey, show an increase in prevalence rates from 29.5% in 2004 to 30.2% in 2005.

Incidence and prevalence are associated with the spread of a disease and it is important to understand how these terms relate to the context of HIV infection. Incidence relating to HIV is the number of new infections over a specified period of time where the prevalence relating to HIV is the absolute number of people infected. Furthermore, the infected person with HIV will leave the infectious pool of HIV by dying and can never be cured, and therefore the prevalence rate of HIV will always increase (Whiteside, 2008: 14). The risk of a needle-stick injury is greater in Sub-Saharan Africa than anywhere else in the world as 1 in 2 hospital patients are HIV positive (International Council of Nurses (ICN), 2005: 89). These statistics are disturbing as it clearly indicates that the risk of health care workers in Sub-Saharan Africa, sustaining a needle-stick injury from an HIV infected patient is very likely.

Whiteside (2008: 28) confirms in his book, that the HIV is found in all body fluids of an infected individual. The viral load is minimal in sweat, tears and saliva, however blood or blood products have a higher viral load and during transmission, the risk of infection is high.

To reduce the risk transmission with blood and blood products, blood safety and hygiene in health care settings is vital and the risk of HIV infection sustained by a needle-stick injury from an HIV person who receives Zidovudine (AZT) as post exposure prophylaxis is 1:10 000.

An article by the International Council of Nurses (ICN) (2005: 89), reports that the World Health Organisation (WHO) estimates that 12 billion injections are being administered annually worldwide and each year there are 2 million needle stick exposures which are sustained by health care workers. This report further stated that 40% of the one million needle-stick exposures that occurred in Europe, involved nurses.

Presently, in developing countries approximately 30% of immunisations are thought to be unsafe. In 2003, the ICN and the WHO launched a needle-stick project in three countries which were Vietnam, South Africa and Tanzania. In South Africa, the Democratic Nursing Organization of South Africa (DENOSA) in collaboration with the National Institute for Occupational & Environmental Health and the Ministry of Health are the leading partners assisting with this needle-stick project. The goals of this project were to prevent needle-stick injuries and occupational exposure to HIV/AIDS as well as to implement control measures such as universal precautions, elimination of recapping, provision and use of sharps disposal containers and safer needle devices (ICN, 2005: 89).

The B Cur undergraduate nursing students at the SoN, UWC enter their training as novices and exit as professionals. During their education and training, they are required to perform nursing tasks in the service settings. They progress through the year levels after the completion of the required theoretical and practical components. The clinical procedures that the students are expected to perform are classified according to their year level.

First year students perform non-invasive clinical tasks whilst second year students are required to administer injections to adults. Third year students have to administer injections to neonates and children whilst the fourth year students perform much more invasive procedures. Nursing student by virtue of their student status have minimal experience and lack the dexterity when administering injections to neonates and children. They also become extremely anxious when administering injections to infants who are not properly secured. These factors increase the risk of the students sustaining needle-stick injuries.

The UWC nursing students also practise their clinical procedures in the skills laboratory at the SoN. This learning environment is safe for them as they are allowed to make mistakes and repeat the clinical procedures until they become competent. If the mistakes made in the skills laboratory have not been corrected, students internalise this wrong behaviour and when placed in the hospitals and clinics with 'real patients', they are confronted with a challenge. This heightened sense of awareness may cause them to become over cautious and increase their anxiety levels, thereby placing them at risk for a needle-stick injury. Health care workers who have experienced needle-stick injuries suffer from emotional strain whilst undergoing testing and waiting for their results, even in the absence of an infection (ICN, 2005: 89).

Needle-stick injuries are very traumatic experiences which if not handled correctly may have devastating psychological effects such as the development of a simple phobia to more severe effects such as Post-Traumatic Stress Disorder (Uys, 2010: 328) as cited in (Uys and Middleton, 2010: 328). The author has confirmed that "persons who have a simple phobia usually are free of symptoms unless they are entering or anticipate a phobic situation and in Post-Traumatic Stress Disorder, persons develop symptoms of re-experiencing, avoidance of stimuli associated with the trauma and hyper arousal symptoms. If the student nurses are not

managed adequately, they may develop these conditions which may interfere with their learning.

The researcher who also supervises students in the clinical setting has had to manage students who have sustained needle-stick injuries. The researcher suspected that the students were not being managed according to policy and procedure of the hospitals and clinics where the needle-stick injury occurred and that the events surrounding the injury affected the students on an emotional level. The policy refers to the treatment of an exposure to a blood-borne pathogen whilst the procedure dictates the management of the students post occupational exposure to blood-borne pathogens. This includes the counselling of the students and the initiation of the post exposure prophylaxis.

The researcher proposed to explore the lived experiences of student nurses in the undergraduate programme at the UWC, Cape Town, who have sustained a needle-stick injury during their clinical placement and to uncover the meaning that these lived experiences have to the student nurses. Depending on the outcome of the data analysis, the researcher hopes to provide baseline information about needle-stick injuries to the SoN, UWC as well as to recommend corrective measures to reduce the rate of needle-stick injuries in the student population.

## **1.5 AIM AND OBJECTIVES OF THE STUDY**

### **1.5.1 Aim of the Research**

To explore the lived experiences of student nurses at the UWC, SoN who sustained needle-stick injuries during their clinical placement.

### **1.5.2 Objective of the Research**

To describe the experiences of student nurses who sustained needle-stick injuries during their clinical placement and to uncover the meanings that these lived experiences have to the student nurses.

### **1.6 RESEARCH DESIGN AND METHOD**

In this study a qualitative, phenomenological approach was used to explore the lived experiences of nursing students who have sustained a needle-stick injury. Moustakas (1994: 58) asserts that phenomenology aims to describe experiences in detail and that these descriptions keep a phenomenon alive.

Through a phenomenological approach which is appropriate for this study the researcher elicited rich information. Creswell (2003: 15) states that “in phenomenological research, the researcher identifies the ‘essence’ of human experiences concerning a phenomenon and understanding the ‘lived experiences’ marks phenomenology as a philosophy and a method.”

Creswell (2003: 18) further states that, “a qualitative approach is one where the inquirer makes knowledge claims based on the multiple meanings of individual experiences however in a quantitative approach the inquirer employs strategies of inquiry such as experiments and surveys to test theories”. In this study, a qualitative approach was selected because the researcher wanted to explore the lived experiences of the student nurses and what these experiences meant to the student nurses.

The researcher is aware that by adopting a qualitative research approach, the researcher had to follow the processes of the research design and methodology. This type of research is based on inductive inquiry where the researcher becomes immersed in the details and specifics of the data to discover important categories and interrelationships, rather than

testing theoretically derived hypothesis as in deductive inquiry (Terre Blanche and Durrheim, 2002:43).

The researcher used a purposive sampling method because of its suitability in a qualitative investigation where the focus is on studying a small number of individuals in-depth (Patton, 2007). Patton further stated that by “selecting information rich cases for in-depth studying, the researcher is able to learn a great deal about issues of fundamental importance to the purpose of the study.” The researcher then proceeded to select the names of the respondents who sustained needle-stick injuries from the database which was maintained by the nursing staff at the SoN.

The purposive sampling method later incorporated a snowball sampling method because during the interviews the respondents disclosed the names of other students who were not included in the data base. Snowball sampling is a sampling procedure in which subjects are located based on referrals from other subjects in the sample (Doordan, 1998: 115). The researcher obtained the names of these students and found their contact numbers through the universities’ administrative database. The students were contacted telephonically and appointments were arranged for a face-to-face meeting. There were various reasons which emerged during the interviews, for not reporting the injury to the SoN.

The researcher also had to use a third sampling method which was the convenience sampling method because the researcher, whilst performing her duties as a clinical supervisor became aware that the students who were being supervised, had previously sustained needle-stick injury in the clinical settings. These names of the respondents were not in the database because the students failed to report the injury. Convenience sampling method “is a non-probability sampling procedure in which readily available individuals are selected for participation in a study.” (Doordan, 1998: 48)



The study sample consisted of 10 respondents, however the researcher reached saturation after 8 participants as no new information emerged from the interviews. The respondents who agreed to be interviewed were above 18 years old and were able to sign a consent form to participate in the study. Data were obtained through individual, unstructured, in-depth face-to-face interviews with the respondents. Data analysis was done manually by the researcher who followed the steps of Tesch (1990: 142). Individual cases were analysed and this was followed by cross-case analysis.

Credibility, trustworthiness and validity were ensured throughout the data collection procedure. Ethical consideration was attended to by obtaining permission from the Research Ethics Committee and the Director of the SoN to conduct the interviews on the undergraduate student nurse population at the UWC.

## **1.7 Outline of the Study**

**Chapter 1:** This chapter serves to introduce the reader to the study and briefly outlines the background/rationale of the study. Included in the chapter is the problem statement, aim, purpose of the study, the research design and process.

**Chapter 2:** In this chapter the literature review is discussed. Previously published quantitative and qualitative research findings relating to needle-stick injuries are discussed with the focus on the qualitative reports.

**Chapter 3:** The research design and methodology, sampling, data collection and analysis process and rigor in qualitative research are included in this chapter and discussed in detail.

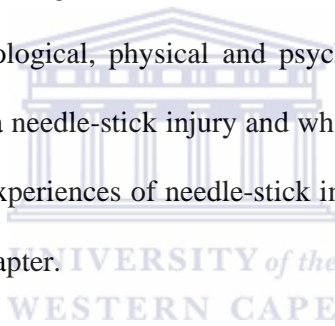
**Chapter 4:** This chapter describes the context of the study. Also included is the demographic profile of the respondents, the process of the data analysis with emergent categories and themes. The themes are supported by anecdotal notes extracted from the data.

**Chapter 5:** The findings of the data analysis are validated and recommendations to improve existing inadequacies are outlined in this chapter. Comparisons are made between the findings of the study and current research literature

## **1.8 Conclusion**

In this chapter, the reader was introduced to the study. The background, problem statement and purpose of the study were presented. The researcher outlined the aim and objectives and a brief overview of the research design and methodology was given.

The incidence of needle-stick injuries are increasing and remain a serious problem for the student nurses who are still in training. The effects of these injuries are devastating and affect the student nurse on the physiological, physical and psychological levels. An exploratory study into these experiences of a needle-stick injury and what meaning it has for the students may provide insight into their experiences of needle-stick injuries. The literature review will be discussed in the following chapter.



## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

A review of the literature will be discussed in this chapter. The aim of a literature review is to investigate whether similar research studies were done and how this study fits into the existing literature. A literature review according to (Kaniki, 2002) as cited in (Terre Blanche and Durrheim, 2002: 17) “involves the identification and analysis of literature related to one’s research project...puts your research project into context by showing how it fits into a particular field.”

In the review of the literature, the researcher did a broad, initial search through the online library services at the UWC. The databases included, amongst others, EbscoHost, Pubmed, CINAHL, Jstor, Scopus, Sabinet and Google Scholar. The literature search revealed that there are a large number of quantitative research studies done on the topic worldwide, however these studies focused mainly on factors relating to the incidence and prevalence of needle-stick injuries, the knowledge of universal precautions and determinants of HIV. During the literature review, the researcher identified a gap in the existing literature with regards to qualitative studies about needle-stick injuries.

#### 2.2 Needlestick injuries....an upward spiralling trend

The first report of occupationally acquired HIV appeared in 1984. In 1997 a report by the Centers for Disease Control (CDC) stated that there were 52 documented cases of occupationally acquired HIV in health care workers as result of sero-conversion. Of these cases, 90.3% were as a result of exposure to blood and needle-stick injury (Grande, El-Far, Barsanti & Servolo, 2001: 235). In the 2002 World Health Report (WHO) an estimated 2

million needle-stick injuries occurred in health care workers worldwide. Included in the report are statistics relating to rates of HBV, HCV and HIV infections that are as a direct result of needle-stick injuries. These statistics show that 40% of HBV, 40% of HCV and 2.5 % of HIV infections in health workers were caused by needle-stick injuries. Nyantumbu, Geyer, Botham, Wilburn and Eijkemans (2005) highlighted studies that were done in South Africa that show that needlestick injuries are common and are underreported (Kastaedt, 2001: 58) and (Rabbits 2003: 8) with prevalence rates of up to 69% (Gounden & Moodley 2000: 265). Quantitative research is important because it informs the medical fraternity of the incidence of needle-stick injuries, the causes of needle-stick injuries and the risk patterns related to needle-stick injuries. There were three qualitative studies that were done in South Africa about the experiences health care workers who had sustained needle-stick injuries.

The literature will be presented under the following headings: experiences of health care workers who sustained needle-stick injuries; the prevalence of needle-stick injuries; the transmission of blood-borne pathogens through needle-stick injuries and the prevention and management of needle-stick injuries.

### **2.3 Experiences of health care workers who sustain needle-stick injuries**

Moody (2002) in his South African study, a qualitative inquiry into doctors' experience after a needle-stick injury found that after being informed of the injury, the family members of the doctors became very emotional. This led to the doctors being deprived of expressing their emotions because they had to support their families instead. The doctors understood that they could not expect much support from their family and friends because of their lack of understanding around needle-stick injuries. Lack of knowledge about the protocols regarding managing a needle-stick injury post exposure on the part of two of the doctors was evident as well. Two doctors stated that they discontinued the post exposure prophylaxis soon after it

was initiated because of the side effects they were experiencing. A lack of infrastructure relating to the availability of the anti-retroviral starter packs and protective measures such as gloves placed the doctors at risk for a needle-stick injury or a sero-conversion. The change in their disposition with regard to their role and function as a doctor was a direct result of the injury. They developed thoughts of anger and blame toward the patients even though they did not express these feelings. The doctors felt that there was a lack of support from by the medical system because the issue of needle-stick injuries were trivialised. Prior to the injuries the doctors used denial as a shield as they did not think that they could injure themselves through a needle-stick injury.

The second South African qualitative study done by Williams (2005) explored the experiences and the reasons why health workers report a needle-stick injury. Some of the health workers who sustained a needle-stick injury felt the injury to be traumatic and developed feelings of anxiety and anger, post exposure. They did not share the details of the injury to anyone for fear of rejection, but rather internalised it. One health worker developed depression and it took about two years to recover from the experience. The common feeling that the health workers experienced was fear, especially whilst awaiting the outcome of the blood tests. Some of the health workers were scared about contracting a disease.

According to Williams (2005), the emotional turmoil that the health workers experienced extended to their family and friends. There were mixed responses from family members when they were informed of the injury. Some of the family members became very upset with the health worker whilst others offered their support. Some of the reasons why health workers report a needle-stick injury are because it was mandatory to do so. They also thought that they might be exposed to blood-borne pathogens. A lack of education and training relating to Universal Precautions and the incorrect discarding of used needles were some of the

causative factors. Recapping appeared to be a non-issue as none of the participants who sustained the injury, recapped.

Ziady's (2007), study focused on the nurses' experience of possible exposure to HIV infection after sustaining needle-stick injuries. The study was conducted at a hospital in the Free State, South Africa. The findings pointed to feelings of bereavement related to the concept of being healthy. Anxiety, fear and anger surfaced in the nurses who had sustained the injury. Anger was directed at themselves for causing their own injury and at their employer for allowing unsafe working conditions. The nurses initially denied having sustained the injury and Ziady (2007) explains that this was a coping mechanism which they adopted. Post exposure, the nurses developed extreme vigilance and became over cautious in the workplace. All the injured nurses were treated with the post exposure prophylaxis and the physical experiences of post exposure medication were nausea, vomiting, sleeplessness, dizziness, abdominal discomfort and malaise. The nurses did however receive overwhelming support from their colleagues, family and the institution.

At the time of the literature review, the researcher was unable to extract the findings of a phenomenological study of the lived experiences of registered nurses who have sustained a needlestick injury at University of South Australia (Thornton, 1998).

#### **2.4 Prevalence of needle-stick injuries**

A study done on student nurses in Taiwan relating to needlestick injuries revealed that 61.9% of the participants had sustained needle-stick injuries and only 14.2% of the student nurses reported the incident. Furthermore 86.8% of the needle-stick injuries were as a result of using syringe needles. This study also reported that 47.6% of the student nurses who participated had no Hepatitis B vaccination coverage (Shiao, Mclaws, Huang & Guo, 2002: 197).

Quantitative studies done by Smith and Leggat (2005: 449) and by McCarthy and Britton (2000) revealed that nursing students were at a greater risk of acquiring needle-stick injuries, whilst performing invasive procedures because of their limited clinical experience. Smith and Leggat (2005) found that in their third year of study, students were 14.8 times more likely to have experienced a needle-stick injury than their counterparts in other year levels.

Blackwell, Bolding, Cheely, Coyle, Mc Lester, Mc Neely, Odom, Owens, Porter, Dawn, Smith, Suite, Swofford and Lawson (2007) in a qualitative study, revealed that student nurses were extremely anxious whilst caring for patients known to have a blood-borne pathogen. This is especially true when these students administer an injection to a known HIV positive patient. Pre-disposing factors for needle-stick injuries appear to be having prior knowledge of a patient with a blood-borne pathogen, feelings of anxiety and lack of clinical experience of the student nurse.

Ncama and Uys (2003: 11) explored trauma nurses' fear of contracting HIV/AIDS in the province of KwaZulu-Natal, South Africa. The researchers' findings revealed that despite having precautionary measures in place, the risk of contracting HIV/AIDS in their working environment was real and that they feared needle-stick injuries the most. Contrary to the findings of many quantitative research studies about the under-reporting of needle-stick injuries, Williams (2003: 64) found that since health workers assumed responsibility for their own health, they were more likely to report needle-stick injuries.

The above studies indicate that there appears to be a common thread amongst nursing students worldwide regarding the prevalence of needle-stick injuries. Extreme anxiety and fear are some of the emotional reactions experienced by the health care worker especially when the patient's serological status is known. These emotions may affect the student nurse

whilst a procedure is being performed and the risk of a needle-stick injury might occur as a result thereof.

Inexperience of the student nurse in the third year of their training was also found to be a contributing factor in the prevalence of needle-stick injuries. This inexperience could be related to the type of clinical procedures that the student nurses are expected to perform as part of their clinical training as a nurse.

### **2.5 Transmission of blood-borne pathogens through needle-stick injuries**

According to a Canadian Communicable Disease Report (1996), the potential for sero-conversion following a needle-stick involving HIV positive body fluid is 1 to 300. Furthermore, over a period of 5 years, one health care worker sero-converted out of a total of 1000 recorded needle-stick injuries. Investigation into the incident revealed that the health care worker was caring for a person with advanced HIV disease and sustained a shallow puncture wound from a small needle and chose not to go on any anti-retroviral treatment. Sero-conversion occurred seven weeks after the injury.

Leliopoulou, Waterman and Chakrabarty (1999: 53) explored the nurses' knowledge regarding the transmission of infection from blood-borne viruses. They found that many nurses believed that a needle-stick injury with a contaminated needle was an unlikely source of infection. The nurses also disagreed with the statement that nurses are at a higher risk of exposure to HBV/HCV than any other health care worker. They have however admitted that they were likely to take special precautions if the patient had an HIV/HBV infection.

Nauss (1999: 59) reported in a Canadian study, that student nurses are more at risk than experienced nurses at sustaining needle-stick injuries because they are inexperienced and lack the dexterity when handling needles.



Statistics relating to the risk of the transmission with a pathogen from an infected individual to a non-immune individual through an injury with a sharp instrument is estimated to be between 6 and 30% for HBV, 10% for HCV and 0.3% for HIV (Ebrahimi & Khosravi, 2007: 56).

A study that was undertaken at a Spanish hospital relating to the risk for occupational transmission of HIV infection among health care workers showed that out of the health care workers that participated in the study, the nursing profession sustained the highest exposure rate. Of the total exposures, 95% were percutaneous injuries (Romea, Alkiza, Ramon & Oromi, 1995: 225).

Removing a needle from a syringe and disposing of a used needle in a full sharps container were the most common causes of needle-stick injuries in a study that was performed on nurses at a Polish hospital (Bilski, 2005: 251). Findings from the research study showed that almost half of the sharps injuries were caused during certain shifts of the day when the workload was the heaviest. Interestingly, the nurses who had sustained needle-stick injuries were all wearing gloves at the time of exposure.

These studies have shown that nurses are a group of individuals who are the most vulnerable to the exposure of blood-borne pathogens. Shift work, heavy patient loads, nursing patients who are infected with an infectious disease and inexperienced student nurses who lack the deftness of handling needles are contributing factors that set the scene for a needle-stick injury to occur.

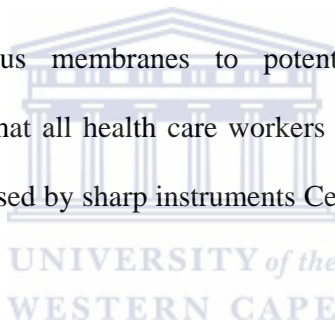
The most common blood-borne pathogen that is transmissible through needle-stick injuries are HIV, HBV and HCV. Sero-conversion after a needle-stick with a patient who is HIV positive is a reality and the statistics prove that it has happened. The studies show that as a

result of personal choices, sero-conversion is a reality and it is evident that needle-stick injuries will prevail.

## **2.6 Prevention and management of needle-stick injuries.**

In an article by Nyantumbu *et al* (2005) on universal precautions, the researchers' stated that universal precautions (UP), were introduced in South Africa in 1997 (South African Law Commission 1997). These sets of practices were developed to protect the health care worker whenever there was a potential for exposure to blood.

Universal precautions involve the use of protective barriers such as gloves, gowns, aprons, masks, or protective eyewear and these barriers can reduce the risk of exposure of the health care worker's skin or mucous membranes to potentially infectious bodily fluids. Recommendations were made that all health care workers take the necessary precautionary measures to prevent injuries caused by sharp instruments Centers for Disease Control (CDC), 1996).



In Nyantumbu, *et al* (2005) article, the researchers noted that a 2008 report from the WHO stipulated that all health care workers must make use of the universal precaution guidelines because every patient should be considered as a source of infection irrespective of whether the patient has a blood-borne disease or not. Trimm (2004) found that training and education in universal precautions and sharps management have been identified as being very important to develop awareness amongst health care workers. However, despite this training program health care workers continue to demonstrate inadequate compliance with the application of universal precautions.

In a study done by Hamory (1983: 174) in the United Kingdom, it was identified that an estimated 40% of needle-stick injuries from 726 responses that occurred within a three month

period and 75% of needle-stick injuries that occurred in the previous year were not reported and subsequently in 1991, this statistic increased sharply to approximately 91%. Trimm (2004) in her article on raising awareness and reducing the risk of needle-stick injuries, found that researchers have suggested that there were various reasons for not reporting needle-stick injuries and that these reasons include the following: a lack of procedural knowledge following needle-stick injuries (Trimm, *et al.* 2003), the decision to report needlestick injuries based on the health care workers perceived views about the patient's lifestyle (Nash & Goon, 2000); the acceptance that needle-stick injuries were an inevitable part of handling sharp instruments (Connington, 2002) and the stigma associated with contracting a blood-borne disease (May & Brewer, 2001).

A fatalistic approach to needle-stick injuries has been described in Moody's (2002: 76) study of a doctor's experience after a needle-stick injury. He stated the following "all doctors felt that as a medical student, a needle-stick injury was a certainty". According to the Safe Injection Global Network (WHO, 2008) the risk of infection following a needle-stick injury with a needle from an infected patient is 0.3% for HIV, 3% for Hepatitis C and 6-30% for Hepatitis B. They suggest that an effective response to occupational exposure to blood or other body fluids involves amongst others, the development and dissemination of guidelines outlining the first aid required, awareness of the reporting mechanism and procedure to be followed for post-exposure prophylaxis and follow up testing as well the provision of support and counselling.

A study done in the United Kingdom by Diprose, Deakin and Smedley (1999: 767) revealed that administering post-exposure prophylaxis immediately after the needle-stick injury reduces the risk of sero-conversion. The type of medication used for the post exposure prophylaxis is also important, because according to Coutellier, Desmoulins, Veron and

Herson (1993), an experienced nurse sero-converted after she was only treated with Zidovudine (AZT), which is one of the most widely used anti-retroviral drugs available.

These studies have highlighted the fact that, because of the nature of their work, and their disregard to apply preventative strategies, such as adherence to universal precautions, student nurses have an increased risk of sustaining needle-stick injuries and contracting blood-borne pathogens. The findings have suggested that the nurses' perception of an individual's lifestyle illustrates whether the prevention strategies of the universal precautions and the management of the injury, will be adhered to.

Policies at the South African Universities in the Western Cape appear to differ with regards to the management of students who sustain needle-stick injuries. The South African Universities include the University of the Western Cape and the University of Cape Town. The differences relate to the provision of anti-retroviral drugs, especially if the HIV status of a source patient is not known. Zidovudine (AZT) as a single drug is given in some cases, whereas the combination therapy of Zidovudine (AZT) and Lamivudine (3TC) is recommended. The time period when anti-retroviral therapy is initiated, especially if the source patient is HIV positive becomes very important because delaying treatment could negatively impact on the outcome. The lack of knowledge about the procedure of reporting needle-stick injuries by the health care workers has become a concern, because delays in the initiation of the post exposure prophylactic medication may have an effect on sero-conversion. Health care workers who are exposed to patients with other blood-borne diseases including Hepatitis B and Hepatitis C may become symptomatic within days of the exposure.

## 2.7 Conclusion

Various risk factors relating to the prevalence, transmission of blood-borne pathogens as well as prevention and management of needle-stick injuries have been highlighted in the literature. The qualitative studies focused mostly on the experiences of health care workers who sustained and reported needle-stick injuries. The literature review yielded numerous quantitative research studies where the researchers looked at the risks and prevalence of needle-stick injuries and also the health workers' adherence to the universal precautions.

The researcher has identified a gap in the qualitative research literature relating to the experiences of health workers immediately after the needlestick injury. Based on the questions that a qualitative researcher might pose to a participant, the knowledge of policies and protocols as well as the physical effects of the post exposure prophylaxis may be explored. These findings will provide important baseline data.

The following chapter focuses on the research methodology and design that the researcher employed to conduct the study. A description of the purpose of the study, the research design and the philosophical underpinnings is presented. Data collection and data analysis is described and the ethical consideration and rigor is included in this chapter.

## CHAPTER THREE

### RESEARCH METHODOLOGY AND DESIGN

#### 3.1 Introduction

A qualitative research approach was identified to guide this study. “A qualitative approach is one in which the inquirer often makes knowledge claims based on the multiple meanings of individual experiences with an intent of developing a pattern” Creswell (2003:18). Creswell also suggests that the use of open-ended questions will facilitate a narrative response which, once transcribed, can be coded into themes.

According to Hinds, Chaves & Cypess (1992) as cited in Morse & Field (1996: 8), qualitative research “is usually conducted in a naturalistic setting so the context in which the phenomenon occurs is considered to be a part of the phenomenon itself.”

The research design and research method that was used in this study will be discussed in detail in this chapter. A research design can be defined as “the general plan for the methods and procedures of a study and a research method is the procedures and strategies to obtain and analyse data.” (Doordan, 1998: 80).

Recommendations based on the outcome of the data analysis will be presented to the SoN, at the UWC. This will be discussed in chapter five of this study.

#### 3.2 The Purpose of the Research

The purpose of this study was to explore the lived experiences of student nurses at the UWC, SoN who sustained needle-stick injuries during their clinical placement.

### 3.3 Research Design

The principles of research design encompasses four dimensions, “they are the purpose of the research, the theoretical paradigm informing the research, the context with in which the research is carried out and the research techniques employed to collect and analyse data.”(Terre Blanche and Durrheim, 2002: 33).

“Paradigms or world views can be described as a basic set of beliefs or assumptions that guide research inquiries.” There are five such philosophical assumptions according to Guba and Lincoln (1988: 94) as cited in Creswell (1998: 74). These philosophical traditions form the basis of a qualitative research study. In this study the researcher was guided through the research process by these set of principles. The researcher will endeavour to explain how these traditions fit into qualitative research studies by describing the meaning of the assumptions and how they relate to this study.

The *ontological* assumption addresses the nature of reality which is constructed by the individuals involved in the research. These individuals involve the participants being interviewed, the researcher undertaking the study and the readers of the study Guba & Lincoln (1988: 94) in Creswell (1998: 74). In this study, the researcher conducted unstructured in-depth interviews with individual respondents. The process of transcription of the interviews, verification of the transcriptions by the respondents, data analysis and the consequential theme emergence allowed for the unfolding of the reality of the experiences of the student nurses who have sustained needle-stick injuries.

These experiences were of such a personal nature to the students that by telling their story in their own words, the researcher was able to understand how the students constructed meaning to their experience. The personal anecdotes relating to the nurses experiences from the transcriptions were used as evidence and an exhaustive literature review was performed to

search for studies that related to the topic. Ontology also addresses the reality of the researcher in the research inquiry and in this study it was addressed by employing the strategies of reflexivity and bracketing.

**Epistemology** refers to the relationship of the researcher to that being researched. It relates to the amount of time spent between the researcher and the participants in the field. The researcher's role is that of an 'insider' and an 'outsider' because of the time spent with the participants Guba and Lincoln (1988: 94) as cited in Creswell (1998: 74).

In this study, the researcher did spend some time with the participants to develop a trusting relationship, even though it was not prolonged. It is important that prior to the undertaking of the research, the researcher attempts to understand the philosophical underpinnings of the research inquiry, to ensure rigor of the research process.

The **axiological** assumption relates to the closeness between the respondents and the researcher to the phenomenon in question. The researcher has to acknowledge that the responses of the participants were very significant and the researcher reported any personal bias which may hamper the findings of the research process (Guba and Lincoln, 1988: 94) as cited in (Creswell, 1998: 74).

In this study, the researcher having had prior experiences of the phenomenon in question, had to admit at the outset of the study, that her objectivity may be affected. To validate the research findings, the researcher used the process of bracketing in which her pre-conceived knowledge of the phenomenon, her personal bias and judgements were acknowledged. The researcher also identified that these personal experiences relating to the phenomenon could have influenced her participation in the study.



The *rhetorical* assumption according to Creswell (1998: 77) is when the researcher makes use of specific language terms in qualitative research. The qualitative research process makes use of specific research language to delineate its processes. Words such as transferability, dependability and confirmability Lincoln and Guba (1985) as cited in Creswell (1998: 77), will describe rigor in qualitative studies. In this study the researcher made use of the term 'explore', which is applicable to this study because the researcher wanted to uncover what the experiences of the needle-stick meant to the respondents. The word 'explore' takes on a deeper meaning in this study because the researcher expects that the responses of the respondents will be rich in detail. This 'richness of the data' will strengthen the essence of the research study.

When the qualitative researcher employs an inductive framework whereby categories and themes emerge from the research process, a *methodological* assumption is used (Guba & Lincoln, 1988: 94) as cited in (Creswell, 1998: 74). Through a process of manually analysing the data using the steps of Tesch (1990: 142), the researcher identified various categories and themes relating to the phenomena. During the unstructured interviews the researcher used probing questions to elicit varied responses relating to the phenomenon. The researcher also discussed the research methodology and design as well as the context of the study in relation to the researcher, the respondents and the phenomenon. The use of these paradigms in relation to the research investigation is pivotal to the whole research process and the incorrect application of these assumptions may invalidate the findings of the research.

Edmund Husserl, who was the founder of the philosophical approach of phenomenology, stated "that the phenomenological method is the descriptive analysis of experience" Koestenbaum (1961: X) as cited in Nijhoff (1975: XII). The researcher chose this phenomenological design because of its appropriateness to the study. The researcher wanted to understand how the experience of the phenomena affected the students to gain a better

understanding of what the words ‘lived experiences’ meant. The researcher had to unpack what the meaning of the phenomenon held for the respondents. In the context of this study, ‘meaning’ became significant because it held different values to the respondents.

The experience of the needle-stick injury has a different meaning to the student nurses as compared to the registered nurses in relation to the management of the needle-stick injury. The respondents are in training and by default are not as experienced as the registered nurses whereas the registered nurses by virtue of the fact that they have a professional qualification should know what to do when the respondents prick themselves. The registered nurses’ meaning of the experience of the needle-stick injury may consequently be different to that of the student nurse.

In this study, the researcher wanted to understand what meaning the needle-stick injury had for the respondents and therefore using unstructured interviews, the researcher was able to extract what the meaning held for the respondents. The unstructured interviews unearthed rich vivid details of the experience surrounding the phenomenon. Line-by-line reading of the transcripts during the data analysis allowed the researcher to acquire a deeper understanding of what the respondents were saying about the occurrence of the injury. It is through this process to uncover meaning that the researcher understood why descriptive analysis is part of the phenomenological philosophy. This discovery allowed the researcher to understand the true meaning of what it was to develop a trusting relationship with the respondent.

The researcher had experienced the process of ‘immersion’ whilst reviewing the data collected during the process of analysis. Immersion is a term used in qualitative research to “describe the degree to which the researcher is absorbed in the detail analysis, synthesis and description of data.” (Doordan, 1998: 60).

### 3.3.1 The Husserlian Philosophy of Phenomenology

Quentin Lauer in his book ...Its Genesis and Prospect (1958:3) writes that whenever the term 'phenomenology' is used today, it usually refers to the philosophy of Edmund Husserl or of someone who has drawn their inspiration from him. Phenomenology is the study of consciousness; it is an attempt to examine an act of consciousness as a pure act seeking to discover in each its essence. Husserl believed that his philosophy should be regarded as a discipline and that true knowledge of reality and logic is found in the world of consciousness (Lauer, 1958: 21).

Edmund Husserl (1859-1938) as cited in Nijhoff (1975) was a mathematician and the founder of phenomenology. This method of phenomenology was born out of his passion of philosophical work in logic and mathematics. His research led to the broader view of the method of phenomenology which he developed whilst undertaking his research into those areas and through this process, Husserl gained a deeper understanding of logic and mathematics. Phenomenology is also considered to be the methodological foundation and theoretical justification of existentialism (Nijhoff, 1975: X). To the existentialists, phenomenology is the disciplined, rigorous, sensitive and imaginative description and analysis of the data of experience. *The Phenomenological Epoche* is cited by Husserl as follows "we must not make assertions about which we do not ourselves see." (Nijhoff, 1975: XIX). The term *Epoche* is equivalent to the term of bracketing which is a term that is frequently used in qualitative research.

Another term used by Husserl is '*Reduction*' which means 'to lead back to origins'. Simply explained, *reduction* means that in order for the researcher to fully understand the facts of the phenomenon under study, the researcher had to revert back to the original and pure version of

events. It is through continuous reduction and bracketing that the researcher is able to discover the essence of the consciousness (Nijhoff, 1975: LVI).

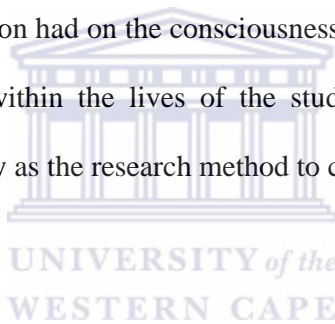
### **3.2 The Application of Phenomenology**

The researcher wanted to explore the lived experiences of student nurses who sustained a needle-stick injury during their clinical placements and to uncover the meaning that these lived experiences had for the student nurses. Moustakas (1994: 47) stated that reflection occurs throughout the phenomenological approach and that the continuous use of reflection provides a logical and systematic analysis to arrive at essential descriptions of the experience. The researcher understands that the term ‘lived experiences’ of the student nurses in this study is the effect the phenomenon had on the consciousness of the student. The phenomenon eventually became integrated within the lives of the student. It is these reason why the researcher chose phenomenology as the research method to conduct the study.

### **3.3 The Research Context**

The setting in qualitative research is vital to the study because it orientates the reader to the research study. The context answers the following question, “what is this research study about”? A detailed description of the background of this study, will introduce the reader to the various role players and the reasons why the researcher wanted to pursue this topic. The researcher is hopeful that by following the philosophy of the phenomenological method, the reader will be able to carefully reconstruct the event of a needle-stick injury.

The insertion of the relevant anecdotes of the students’ experiences by the researcher, will allow the reader to ‘live the experience’ of the student nurses whilst placing themselves in the ‘shoes of the student nurses’ at the time of the injury. Another purpose is to introduce the reader to the clinical environment of the student nurses and how subtle changes in this



environment can impact the student nurses' optimal functioning. The needle-stick injury was such a traumatic event for the student nurses that they were able to recall the minute details even though the incident happened months ago. Similarly, the researcher is able to recall vivid details from needle-stick injuries that she sustained approximately 13 years ago.

This vivid representation further highlights the trauma that the researcher underwent at the time of the injury. The researcher, through her role as a clinical supervisor has had to support students in the B. Cur under-graduate programme at the SoN, UWC who had sustained needle-stick injuries in the service settings. The researcher, through her communication with the injured students suspected that the staff at the service settings had mismanaged the injury. Students using the skills laboratory at the UWC were injuring themselves with unused needles and failed to report these injuries to the coordinator of the skills laboratory at UWC. The undergraduate nursing students are placed in the service settings for the fulfilment of their clinical requirements according to the curriculum of the nursing program. They also have to complete a stipulated number of clinical hours as a legislative requirement of the South African Nursing Council (SANC), the statutory body for nurses in S.A.

### **3.4 Population and Sampling**

It is the opinion of Morse and Field (1996:65) that qualitative sampling is guided by two principles which are appropriateness and adequacy. They describe appropriateness as the selection of respondents who have knowledge of the phenomenon and can best inform the research. Adequacy is described as having enough data which is rich and detailed to allow for themes to develop and thereby meeting the objectives of the study. The authors include the term 'saturation' which is when no new data emerges after a certain number of interviews have been conducted. In this study, the researcher was guided by these principles of qualitative sampling.

The population under study was the student nurses in the undergraduate programme at the SoN, UWC. The researcher initially used a purposive sampling strategy for the study. Creswell (2007:125) states that "... in a purposive sample, the inquirer selects individuals and sites for study because they can purposefully inform an understanding of the research problem and central phenomenon in the study."

This sampling strategy was chosen because all the respondents experienced the same injuries and their contributions to the study would form the essence of the research. During the data collection process the sampling methods changed from that of a purposive method to snowball and convenience sampling method. "Snowball or chain referencing sampling is a method where the researcher starts interviewing the respondents who will then refer other respondents to the researcher who has experienced the same phenomenon" (de Vos 1998: 254). Convenience sampling method "is a non-probability sampling procedure in which readily available individuals are selected for participation in a study" (Doordan, 1998: 48). The reasons that the researcher had to change from the original sampling method and adapt to the other sampling methods are discussed further.

All the students who sustained needle-stick injuries in the service settings, has an obligation to report the incident to the staff at the SoN at the UWC. The details of the respondent and the injury are kept in a database at the SoN. The researcher had to initially obtained permission to peruse the database to access the names of relevant students. Once the researcher got hold of the names and contact details of the respondents the prospective students were contacted telephonically.

The researcher requested that the students participate in the study and a date, venue and a time for a meeting was negotiated. During the interviews with the respondents, they informed me of their friends who had sustained needle-stick injuries and provided me with their contact

details. The researcher then proceeded to contact these students to include them in the sample. The names of these students were not captured in the database of the SoN. This was the reason why the researcher has had to use the snowball method of sampling in this study.

During her work as a clinical supervisor of the undergraduate students, the researcher was also informed by some of these students that they had had sustained needle-stick injuries. The names of these student nurses were also not in the data base because they failed to report the incident to the SoN. Permission as sought from these students to include them in the study. This explains why the researcher had used the convenience sampling method in this study.

When doing qualitative research the researcher will select a small sample of participants to facilitate in-depth investigation within the context of the research. This is unlike the samples used in quantitative studies where the researcher usually selects large numbers of participants for statistical significance which are devoid of context (Miles & Huberman, 1994: 27).

The sample for this study was initially 10 participants because the responses obtained in qualitative research are by nature extensive and the researcher may reach saturation of data with a relatively small number of participants. Gibson and Brown (2009: 29) confirm that “Theory saturation is a fundamental aspect in the late stages of theory (category) development and the authors further concluded that “saturation refers to the point when the researcher who is applying categories routinely sees the same thing.” This implies that when no new information can be coded from the data, then the data is seen to have reached saturation. During the data collection and analysis process, the researcher reached saturation after interviewing eight respondents.

### **3.4.1 Sampling criteria**

Inclusion criteria were as follows: students who were 18 years old and above, who had sustained a needle-stick injury and were registered at the higher education institution (UWC). Participation in the study was voluntary and informed consent was obtained from the respondents prior to the interviews being conducted.

## **3.5 DATA COLLECTION**

### **3.5.1 Data collection process**

Written permission was sought from the Director of the SoN to access the database of the undergraduate students who had sustained needle-stick injuries. The students were contacted telephonically and a meeting was arranged to discuss the issues that pertained to voluntary participation, consent and confidentiality. This study was of a very sensitive nature and the issue of maintaining confidentiality was very important to the students. It was therefore imperative that the students were reassured that the researcher did not have access to their personal files. This initial procedure was handled with care to ensure that trust relationship between the researcher and the students were maintained.

After the initial telephonic conversation with the respondents, an agreement was reached regarding the time and venue for the interview. The interviews were undertaken in a private room at the Skills Laboratory at the SoN, UWC. The venue and time was booked in advance with the skills laboratory coordinator at UWC. Prior the interviews, the following documents were made available to the students, namely the participant information sheet (Annexure C) and the consent form (Annexure A).

The interviews were recorded on a digital voice recorder. The respondents had given permission for the interviews to be audio-recorded. Digital audio-files were created and



stored in a folder on the researcher's personal computer. These files were also stored onto compact discs and a code was allocated to each of the respondents to ensure anonymity. The compact discs were locked away and were only accessible to the researcher. The researcher had the only access to the personal computer.

Once these audio files were saved on the personal computer, the researcher proceeded to delete the recordings from the digital voice recorder. The transcription of each interview took about five days to complete and was transcribed verbatim. The researcher used an interview schedule (Annexure A) and after each interview, the researcher reflected on the interview by writing down information about her impressions and feelings of the responses she obtained from the respondents.

Terre Blanche and Durrheim (2007: 131) explain that "transcribing the interview makes it easier for the researcher to refer back and forth to different parts of the interview if it is on paper instead of repeatedly listening to an audio-tape." They also state that it is better to transcribe all the responses which were recorded, than to decide which data is relevant or which is not because the meaning of the data in the interview can only be interpreted in the context of the sentences which surround it and the conversation as a whole.

### **3.5.2 Data collection instrument**

In qualitative research, the interview is the most frequently used of all the methods of data collection and it can be defined as an interaction between the interviewer and the respondent (interviewee) with the interviewer establishing a general direction for the conversation (Babbie & Mouton, 2007: 289). A researcher will use a structured interview, to elicit straight forward information from the respondent. A structured interview contains a set of questions which the researcher has previously drawn up in the form of an interview schedule and this type of data collection instrument is usually used in quantitative research (Terre Blanche &

Durrheim, 2002: 128). The researchers further stated that in phenomenology, there is very little structuring during the course of the interview and a single open-ended question is usually asked at the outset of the interview.

In this study the researcher made use of unstructured, in-depth interviews which lasted approximately one hour. The researcher used a broad question to elicit a narrative account of the students' experiences, i.e. would you please tell me about your experience when you sustained the needle-stick injury? It is important to note that each time you repeat the basic process of gathering information, analysing it and testing it, you come closer to a convincing model of the phenomenon you are studying (Rubin & Rubin 1995: 45 as cited in Babbie & Mouton, 2007: 289).

The researcher used probing questions to explore deeper feelings. Probing is done to stimulate interviewees to provide additional information when the responses are vague (de Vos, 1998: 310). Creswell (2003) suggests that the researcher captures reflective notes to include all the researchers personal thoughts, feelings or problems encountered during the interview process. The researcher will also make use of reflective notes because of having had previous lived experiences of needle-stick injuries.

### **3.6 Ethical Consideration**

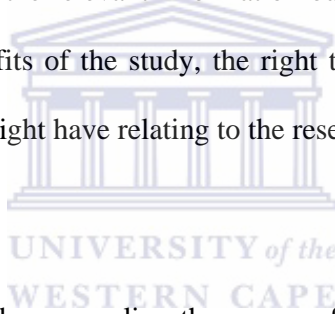
Ethical approval was obtained from the Deputy Vice-Chancellor (Student Development and Support), the Senate Higher Degrees Committee, the Senate Research Ethics Committee (Appendix D) and the SoN of the UWC (Appendix E). Needle-stick injuries are very traumatic experiences and interviewing a student who may have had a needle-stick injury a few years ago might still elicit an emotional response in the student. In such an event the researcher planned to refer the students for debriefing and support to the Student Development and Support Services at UWC.

### **3.6.1 Informed consent**

Informed consent was obtained from the participants prior to the interviews (Appendix B) Terre Blanche and Durrheim (2002: 66) state that obtaining consent is not merely the signing of a consent form. It requires that participants receive a full, non-technical and clear explanation of the tasks expected of them, so that an informed choice can be made. Respondents were informed that they could withdraw from the research interview at any stage and that no explanation was needed from them. Respondents were also informed that their studies would not be affected by their responses and that there was no remuneration for participation in the study. Each respondent was given a Participant Information Sheet (Appendix C) that contained all the relevant information outlining the reasons for the study, the risks of the study, the benefits of the study, the right to withdraw at any time and any questions that the respondents might have relating to the research study.

### **3.6.2 Confidentiality**

Confidentiality was maintained by concealing the names of the participants and a code was used on the interview notes, once the data was transcribed. The respondents were also informed that the once the interviews were transcribed, an audio file was created on the researcher's personal computer. Once the audio files were transcribed, the recording on the digital voice recorder would be deleted. The respondents were informed that only a code would appear on the hard copy of the transcription and that anecdotes from the transcriptions would be inserted into the research report. All the typed transcriptions were shown to the respondents, prior to the data analysis for verification of the content of the interview. The respondent proceeded to read through the document and signed it, thereby representing a true reflection of the interview.



### 3.7 Rigor in Qualitative Research

Guba and Lincoln (1994) as cited in Creswell and Miller (2000) claim that qualitative researchers must refer to the post-positivist, constructivist and critical influence paradigms in order to establish validity. The researcher will give a brief overview of the paradigms and the application of these paradigms in this research study to establish validity.

Researchers, who adopt the post-positivist strategy, understand that their research process must be methodical and extensive in order to achieve validity by actively employing specific protocols (Creswell & Miller, 2000).

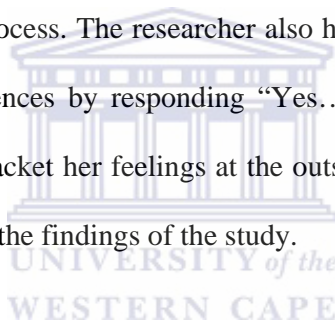
The researcher, who employs the constructivist/interpretive paradigm, believes in a diverse, interpretive, open-ended and contextualised perspective toward representativeness of their research. Trustworthiness, credibility, transferability, dependability, confirmability and authenticity are terms used to validate the research process and findings. Although this paradigm is used by both qualitative and quantitative researchers, it is in qualitative research that it is widely used (Creswell & Miller, 2000).

Researchers, who engage in the critical perspective, must recognise that during their research process, they should discover any hidden theories about how narrative accounts are constructed, read and interpreted (Creswell & Miller, 2000). The authors believe that the socio-political, cultural, economic, and ethnic background of the respondents largely influences the accounts of the respondents. It is important therefore, that these researchers be reflexive. The researcher applied these paradigms to the research process and will discuss the application as follows.

### **3.7.1 Bracketing**

Bracketing is a qualitative term primarily used in phenomenology. Doordan (1998:39) defines bracketing as a process where judgements, preconceived ideas, personal biases or knowledge about the phenomenon under study is acknowledged by the researcher. The researcher also affirms that these personal feelings may influence observations and the conclusion of the research study.

In this study, the researcher admitted that personal feelings and biases existed because the researcher had experienced the phenomenon of a needle-stick injury under investigation. The researcher became aware of her personal feelings but consciously chose not to influence the students during the interview process. The researcher also had to guard against affirming the students account of her experiences by responding “Yes...I know that...I know how you feel.” The researcher had to bracket her feelings at the outset of the study to avoid swaying the respondents and influencing the findings of the study.



### **3.7.2 Reflexivity**

Doordan (1998: 107) defined “Reflexivity as a term which is used in qualitative research and it that refers to the dual source of insight from being both researcher and participant” Reflexivity is crucial in qualitative work especially if the researcher has personally experienced the phenomenon. In this study, after the interviews were recorded, the researcher jotted down notes regarding her personal biases because of her own experience of needle-stick injuries. The researcher tried to maintain a distance and refrained to become too involved in the interviews by allowing participants to reveal what happened during the injury.

One of the themes that emerged from the data analysis was the need for support. It was revealed by some of the respondents that the support with regards to counselling at the higher

education institution was not forthcoming. This information surprised the researcher because whilst the data analysis process was underway, the researcher who is a registered nurse and an employee at the higher education institution had the unfortunate experience of an exposure to bodily fluids and the support that the researcher received from the higher education institution was excellent.

Some of the respondents also stated that they felt that because of their student status, they were not adequately supported. The researcher is of the opinion that by virtue of her professional status, the support that she received was very different from that of the student nurses. Student nurses are the 'hands on' people in the service settings and should be treated with more empathy and respect, but this is not happening. This is how the researcher dealt with reflexivity.

### **3.7.3 Credibility**

Credibility of qualitative research findings deals with how well the categories and themes emerge from data and that no relevant data have been inadvertently excluded or irrelevant data included (Graneheim & Lundman, 2004: 105). The researcher attempted to establish credibility by accurately transcribing the data and performing an accurate analysis of the data. Line-by-line analysis was performed in order to find similarities between words and sentences. Categories were formulated after similarities were found and later themes emerged from the categories. The findings were also peer reviewed and only relevant representative anecdotal notes from the transcriptions were included in the research report.

### **3.7.4 Trustworthiness**

Polit & Hungler (1999: 717) as cited in Graneheim and Lundman (2004: 105) claimed that "trustworthiness also included the question of transferability which referred to the extent to

which the findings can be transferred to other settings or groups”. Furthermore, the researchers state that for transferability to be facilitated, the researcher must describe the research methodology and design in detail. In this study, the researcher had ensured transferability by describing the context surrounding the phenomenon, sample selection, characteristics of the respondents, data collection and analysis in detail.

Trustworthiness in qualitative research according to Doordan (1998: 125) is “when the data gathered by the respondents accurately reflect the perceptions of the respondents”. The researcher ensured trustworthiness by returning to the participants and asking them to verify the data that was obtained from the interviews. After the respondents read and verified the transcriptions, they signed the transcriptions. Speziale and Carpenter (2003: 70) stated that content added or deleted by participants should be incorporated by the researcher into a revised description.

In conclusion, the researcher has made every effort to establish rigor in this research study by applying the theory relating to rigor and has undertaken the research process appropriately according to the philosophical principles of phenomenology.

### **3.8 Data Analysis**

In this study, the researcher chose to analyse the data manually and was guided by the steps of Tesch (1990: 142). Through a rigorous method of analysing the data, four main themes with sub-categories emerged. The researcher ensured the data analysis process was validated by applying the principles of rigor throughout the analysis. The process of data analysis is discussed at length in the next chapter.

### **3.9 Limitations of the Study**

Creswell's (2003: 150) view on limitation of a study refers to the identification of potential weaknesses in the study. In qualitative research the small sample size is regarded as a limitation because it may affect the representativeness of the sample. Doordan (1998: 107) defines representativeness as the "degree to which the key characteristics of the sample resembles the larger characteristics of the total population." In this study, the researcher through the process of adopting a purposive sampling strategy selected a small sample size for the research study. The researcher is also aware that the results of the study cannot be generalized as the sample is not representative of all the student nurses in the BCur undergraduate programme and it is the intentions of the researcher not to generalize the findings in this qualitative study. In qualitative inquiry, the sampling strategy is important as it defines the quality of the data. The sample size is usually small because of the large amount of data that is produced. However, small samples of respondents usually provide data which is "thick and rich" and this data is significant to affect changes in the management of needle-stick injuries within the learning environment of the student nurse.

### **3.10 Conclusion**

In this chapter the researcher discussed the theory related to the research design and methodology in detail as well as how these components were applied in this study. In the following chapter, the method of data analysis, the emergence and discussions of the themes relating to this study will be discussed.



## CHAPTER FOUR

### FINDINGS OF THE STUDY

#### 4.1 Introduction

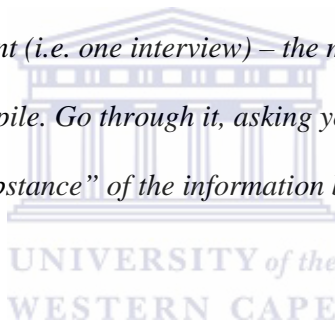
Phenomenological data analysis proceeds through the methodology of reduction, the analysis of specific statements and a search for all the possible meanings (Creswell, 1998: 52). In this chapter the details of the analysis will be presented. The researcher was guided through the process of data analysis and interpretation by the applying the steps described by Tesch (1990: 142). The research was commenced after permission was obtained from all the relevant authorities to access the names of the respondents from the data base at the SON, at the UWC. The respondents who participated in the study gave consent to be interviewed. The interviews were recorded on a digital voice recorder. Digital audio files were created of each interview and were stored in a folder on the researcher's personal computer. These files were also stored onto compact discs, and a code was allocated to each of the files. The compact discs were locked away and were only accessible to the researcher. The researcher had the only access to the personal computer. Once these audio files were saved on the personal computer, the researcher proceeded to delete the interview on the digital voice recorder. The transcription of each interview took about five days to complete and was transcribed verbatim.

The following is a detailed account of the of data analysis process according to the data analysis steps described by Tesch (1990: 142).

*Step 1: Get a sense of the whole. Read all the transcriptions carefully. Perhaps jot down some ideas that come to mind.*

After each interview was transcribed, the researcher immersed herself in the data by reading and re-reading the typed transcripts several times. This process allowed the researcher to obtain a general view of the data. Miles and Huberman (1994: 8) state that through continuous reading of the source material and through vigilance over one's presuppositions, one can reach the 'Lebenswelt' of the informant, capturing the 'essence' of the account. 'Lebenswelt' was the term used by Edmund Husserl to describe the vague experiences in his world which he thought were important enough to be described with precision and accuracy. Husserl believed that vague experiences are legitimate objects of philosophic scrutiny and that one cannot restrict one's efforts to the simple, the clear and the distinct (Koestenbaum, 1961) as cited in (Nijhoff, 1975: XIII).

*Step 2: Pick one document (i.e. one interview) – the most interesting one, the shortest, the one on the top of the pile. Go through it, asking yourself “what is this about?” Do not think about the ““substance” of the information but its underlying meaning. Write thoughts in the margin.*



Whilst the researcher was reading through each of the transcriptions, the researcher became aware of the underlying “feeling” expressed by the respondents. General descriptive words were then written in the margins of the transcripts. Questions kept re-surfacing in the mind of the researcher whilst the transcripts were being read. The questions included, amongst others, “what is this respondent trying to tell me?” and “How did this respondent feel at the time of the needlestick injury?” These questions assisted the researcher to think about words to describe the responses of the respondents.

*Step 3: When you have completed the task for several informants, make a list of all the topics. Cluster together similar topics.*

*Step 5: Find the most descriptive wording for your topics and turn them into categories. Look for ways of reducing your total list of categories by grouping topics that relate to each other. Perhaps draw lines between your categories to show interrelationships.*

A line-by-line analysis was performed. The researcher read each line, assimilated the words in the line, and then used a “cut and paste” technique, where the each word, a few words or the whole sentence was cut out and pasted on to a large white board, using the initial descriptive words. The researcher performed the “cut and paste” technique on three of the transcripts but had read through the rest of the transcripts. Categories emerged from the groups of similar words and these categories were colour coded. These colour coded categories were then attached to groups of words of the other transcripts. The latter is referred to as a cross-case analysis.

Once all the text from the transcripts was placed in the respective categories, four themes emerged. The researcher will discuss the categories and themes in detail. Although Tesch’s (1990:142) data analysis steps were used as a guideline the researcher choose not to use all eight steps as no numerical codes were used when grouping the categories.

## **4.2 Context**

Data analysis in qualitative research involves the researcher, the students, the setting as well as the researchers’ prior experiences. The researcher is of the opinion that context is very important in qualitative data analysis as it provides information about the relational links between the researcher and the respondents as well as any biases related to the phenomenon under investigation.

Babbie and Mouton (2007: 272) state that the qualitative researcher has a preference for understanding events, actions and processes in their context. Some writers refer to this as the contextualistic or holistic research strategy of qualitative research. They further state that the

qualitative researcher's aim is to describe and understand events within the concrete, natural context in which they occur. Therefore if one understands events against the background of the whole context and how such context confers meaning to the events concerned, that one can truly claim to 'understand' such events.

The practice of nursing has changed throughout the years and this change has influenced the way nurses care for their patients. Societal demands on health care services have increased drastically and nursing education must prepare the student to meet these demands. The student nurses at the UWC initially learn certain skills in the skills laboratory setting where the students are able to practise on mannequins and simulated patients. The skills laboratory provides a safe environment for the students where procedures can be practised at their own pace and time and the students are able to repeat the procedures until they become clinically competent. Students need to complete certain clinical procedures within a specific time period in the 'real world setting' and this limitation may cause them to become slightly distracted as their focus may be on the completion of the skill and not on the actual procedure.

The researcher in her role as clinical supervisor suspected that the students sustained needle-stick injuries in the skills laboratory setting and failed to report the incident because the unused needles posed no threat to them. This learned behaviour in the skills laboratory becomes internalised by the student and places them at a greater risk in the "real world setting" where they are more likely to sustain a needle-stick injury whilst nursing real patients. The researcher who is a registered nurse has had three needle-stick injuries and one exposure to bodily fluids. The researcher suspected that when a needle-stick injury occurs, the student may experience trauma, anxiety and they may become fearful of performing procedures involving needles as well as going back to the service setting where the injury had occurred.

The researcher was aware of her pre-conceived ideas about the effects of needle-stick injuries and that these ideas could influence the questions that the researcher posed to the respondents during the interview process. The researcher had to view the research from an ‘outsiders’ perspective by removing herself emotionally from the lived experiences of the needle-stick injuries that she had sustained. Husserl as cited in Nijhoff (1975: XX) describes this process as “bracketing”. He further stated that the experience in question must be observed from a distance, that is, from a state of reflection. In this study, the researcher wrote some reflective notes throughout the data collection and analysis process to consciously bracket out personal biases.

Reflective notes of researcher to the first interview:

*“I am feeling very angry at the sister in the service setting because of the way that this student was treated... these are registered nurses who are quoting nonsense when it comes to HIV incidence and prevalence. I am ashamed that a registered nurse can treat a student nurse so badly.”*

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### 4.3 Profile of the Respondents

The profile of the nursing students who participated in the study is presented in this Table which reflected demographic data relating to age, gender and year level when the injury had occurred.

	AGE	GENDER	YEAR LEVEL
Respondent 01	32	Female	3
Respondent 02	24	Female	2
Respondent 03	21	Female	3
Respondent 04	19	Male	2
Respondent 05	19	Female	1
Respondent 06	22	Female	3
Respondent 07	21	Female	4
Respondent 08	23	Male	2



The sample consisted of 8 participants who represented all the year-levels of the BCur undergraduate nursing programme at the UWC. The age of the respondents ranged between 19 and 32 years. Six respondents were female and two were male. The needle-stick injuries occurred during 2009 and 2010. The BCur nursing students were placed at various service sites for the fulfilment of the clinical training requirements as prescribed by the SANC, the statutory body governing nurse training in S.A. At the SoN UWC, nursing students are placed at clinical sites throughout their four year programme. During these placements they are expected to complete certain clinical procedures to meet the legislative requirements of professional nurses.

#### **4.4 Data Analysis – Themes and Categories**

The objective of this study was to describe the experiences of student nurses who sustained needle-stick injuries during their clinical placement and to uncover the meanings that these lived experiences have to the student nurses. During the data analysis process, the researcher analysed each interview line-by-line through a manual process before a comparison between cases were made. The researcher was guided by the data analysis and interpretation of Tesch's (1990:142). Four major themes emerged through the process of analysis. The themes included the traumatic incident, reaction to the traumatic incident, intervening factors and need for support. The themes are discussed in detail below.

##### **1. Traumatic incident**

*-Account of the incident*

*-Setting the scene*

##### **2. Reaction to the traumatic incident**

*-Physiological reaction*

*- Emotional reaction of the student and family*

*-Reaction to treatment*

*-Reaction to nursing practice*

##### **3. Intervening factors**

*-Knowledge of student*

*-Knowledge of professional staff in service setting*

*-Preparedness to practice*

##### **4. Need for support**

*- Support from family and friends*

*-Support from staff in service settings*

*- Support from staff at the Higher Education Institution (HEI)*



#### 4.4.1 Traumatic incident

##### *Account of the incident*

All the respondents described the needle-stick injury in vivid detail, even though it had occurred 4 to 12 months earlier. This traumatic incident affected them so deeply that recalling it was as if it happened the previous day. The responses to the question, “Can you describe to me what your experience was when you sustained a needle-stick injury?” “Were varied. The respondents described the details about the service setting where they were placed. This included the time, date and day of the week as well as what instruction they were given by the nursing staff. The respondents spoke about the details as if they were telling a story and it was as though the scene was set for the needle-stick injury to occur.

*Resp 01 “... the baby clinic...was the 17<sup>th</sup> February...was Ash Wednesday, I remember the day very clearly because it was my daughter’s birthday.”*

*Resp 05 “... it was about three o’ clock in the afternoon.”*

*Resp 06 “... actually what I what happened was like in the morning we have to draw blood in the ante-natal ward.”*

*Resp 08 “... uhm it was a ...it was my first day and I...it was on a Sunday...it was in the vacation period when we worked.”*

The needle-stick injury that happened to (*Resp. 01*) became an incident that the respondent would remember very clearly because of personal sentiments, namely that it was her daughter’s birthday and the incident also occurred on a very special religious day in her life.

The respondents continued to describe what they were instructed to do by the nursing staff at their respective service settings.

*Resp 04 “... I was supposed to give the patient Clexane injection.”*



*Resp 05 "... the sister of the ward asked me to do an HB and a HGT."*

*Resp 06 "...we have to draw blood in the ante-natal ward."*

*Resp 08 "... I had to do a glucose testing for the uhm sister."*

One of the respondents was preparing for an evaluation when the needle-stick injury occurred.

*Resp 02 "...I was preparing for an evaluation from my second-year supervisor."*

### ***Setting the scene***

The respondents then described how the needlestick injury occurred.

*Resp 01 "...I dropped the cotton wool in the dish. So I picked it up and then when I put on there I didn't realise at first I had a needle-stick injury...when I got home I discovered that my finger had a cut in it."*

*Resp 02 "...uhm I was administering Heparin subcutaneously and then when I finish...uhm, when I pulled out the needle from the patient I suddenly recapped it and pricked myself on the left thumb."*

*Resp 03 "...it was a simple mistake, a simple mistake, cause I was going to give insulin to this patient of mine that was a diabetic and he did not know how to give it to himself...so I was trying to help him...it was quite high up and already put the needle to himself but then when I tried to administer myself, he then bumped into me with his elbow...I end up pricking myself with the needle."*

*Resp 05 "... there were no lancets in the ward and then she told me that each patient has a needle next to the bed cupboard that they used to prick them...I did what sister*

*asked me to do and when I opened the needle...as I opened the needle it was...ja the next thing I know it was in my finger....”*

This category focused on the precise details that were imprinted in the minds of the respondents about the sequence of events that led up to the needle-stick injury. Despite the time lapse the account of the event entailed the exact identification of the day, date and time that it happened. The reflection of these minute details became very significant for the respondents. For an incident to occur there has to be a process and a sequence to set the incident in motion.

Researchers who have studied the situational model of accident causation refer to the domino theory and according to the theory there are six factors involved in the sequence of events which lead to an accident and its consequences. One is dependent on another and one follows because of the other, constituting a sequence of events. The six factors are lack of control, personal/job factors, unsafe acts/conditions, accident, injury damage/interruption and cost of accidents (Kotze, 1998: 56). This theme is very important because the incident formed the focus of the life of the respondents during that particular period in time.

#### **4.4.2 Reaction to the traumatic incident**

##### ***Physiological reaction***

The immediate effect of the needle-stick injury elicited a physiological reaction in the respondent.

*Resp 02 “...Yoh! I was shocked and then I didn’t think about anything else...and then I was sweating, I was dripping wet...I didn’t know what to do.”*

*Resp 03 “... I was waiting at the tearoom and at that time I was sweating and I wanted to just run away and scream...tears were falling down my face.”*

*Resp 06 “... after I pricked myself, I had a shock...I was going crazy...I was crying and crying.”*

These descriptions clearly indicated how the effect of the needle-stick injury had caused a physiological manifestation within the respondent.

***Emotional reaction of the student and family***

The needle-stick injury aroused feelings of fear within the respondents. They became fearful of becoming HIV positive and this overwhelming fear led to feelings of anxiety and depression, which the respondents experienced immediately after the incident.

*Resp 01 “... I felt numb...I felt like uhm a bit emotional but I didn’t show it...I felt like I had an out of body experience cause I was standing there but I wasn’t really there...yes, I actually still feel numb, I don’t know, maybe I just blocked it out like some bad thing happened in your life.”*

*Resp 02 “...yoh! I was shocked and then I didn’t think about anything else but I felt what if the patient got HIV...so I was anxious and then I quickly went back to the folder and checked her diagnosis.”*

*Resp 04 “... as soon as I left the clinical placement, everything sank in. Then it felt like this huge cloud over my head and that really started to depress me because my only thoughts was what if the results are positive.”*

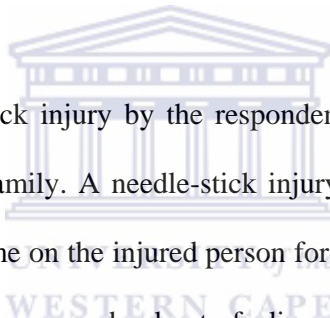
The responses that the student displayed at the time of the needle-stick injury were also as a result of how the nursing staff managed the needle-stick injury. Some students viewed the lack of care from the staff at the service settings as indifferent.

*Resp 01 “... when I got home I discovered that my finger had a cut in it...so I went back to the clinic and I spoke to the sister there...she was very unsympathetic...I think at the time she told me that I shouldn’t worry about it...I should go home, not tell my husband because she believes that it would cause problems in my marriage... I felt*

*that she didn't really know what she had to do, what her role was...even though she was the unit manager."*

*Resp 05 "... the results...oh it was nerve wrecking because they told me that I can phone in an hour's time, the night...I must phone in at eight...that was the time the girl gave me...and when I phoned this phone just rang and rang and rang and nobody ever answered."*

*Resp 08 "... I wanted answers basically...I was pricked myself found out that the patient is HIV positive and I just got a pat on the back...don't worry, good luck...everyone was telling me good luck...am I HIV positive now or what's the story now here."*



The disclosure of the needle-stick injury by the respondents elicited positive and negative emotional responses from the family. A needle-stick injury is perceived as an accident but somehow people may place blame on the injured person for allowing the injury to occur. The responses from the family members may be due to feelings of fear for their spouse/partner if they were to become HIV positive as a result of the injury. The respondents shared information about their injuries with their spouses and parents.

*Resp 01 " ... I said you know daddy this is one of the things that we have to go through and he said I don't want my child to be HIV positive. I will take it from you if I could."*

*Resp 02 "... I had to tell my husband how I pricked myself, he was very angry, he said to me how can you do that? I explained to him that the patient is HIV positive and there might be a possibility that I could also be HIV positive. He didn't talk to me for the rest of the day."*

*Resp 05 “...I told her, Mommy I pricked myself with a needle and my mommy was like...first thing she asked me if it was a used needle... I said yes and then she asked me if I know the status of the patient and I said yes and she is negative... so my mommy asked if I followed protocol or not and I told her yes... he told me she think it is a good idea.”*

### **Reaction to treatment**

The side effects of the post exposure prophylactic drugs presented the respondents with challenges. This affected their attendance at the service settings as well as their attendance of lectures at UWC.

*Resp 03 “...the medication made me feel sick...I had to take it early in the morning...8 o’ clock and then I started to be late at classes because after taking the medication I would feel nausea and I would sweat a lot.”*

*Resp 05 “...ah! It was terrible....OOOH! ...that medication I think was the worst part of it all...nausea, constant dizziness, I don’t feel like eating...my favourite food became my worst nightmare.”*

*Resp 06 “...the medication...it was during the school days, no I’ll be so dizzy, so weak and I told my supervisor in the skills lab at Hospital G ...I told her Ma’m I can’t take it anymore, I see two people, when the teacher is teaching in front, I see two people actually...I don’t know if it hallucinations or something.”*

Some of the respondents stated that they discontinued the post exposure prophylaxis soon after commencement, because of the side effects of the medication. They also did not inform anyone of their decision.

*Resp 03 “...I ended up not taking the medication...you just putting yourself at the misery of taking the medication.”*

*Resp 07 "...the medication I was on for 3 days...the doctor gave me the option to continue with it...the meds...uhm so I decided not to go on it for the 28 days cause it was making me sick."*

*Resp 08 "...the doctor gave me the PEP...I was on that the one day...it was supposed to be taken for 3 days...for the one day so I threw it away...it affected me badly."*

### ***Reaction to nursing practice***

The needlestick injury impacted negatively on the students when they had to go back into the service setting. They were traumatized and felt that by going back to the setting they would be re-living the injury. Specific phobia (formerly 'simple phobia'), according to Middleton (2010:323) is an obvious and persistent fear that is excessive or unreasonable, triggered by the presence or anticipation of a specific object or situation (e.g. receiving an injection, seeing blood). It would therefore be realistic to make an assumption that the fears of the respondents could develop into phobias which could impact on their studies.

*Resp 04 "...Sunday evening when I was busy preparing for an OSCE my thought ...they shouldn't give me an injection because I still have that fright in me and now I found out that we have to go to work 3 days again in that same placement."*

*Resp 06 "... I didn't want anything to do with drawing blood and I don't know what kind of sister I'm going to be because I don't want to draw bloods...the fear of drawing blood is still with me. When I'm giving adults family planning after the needle's being used or even if the sharps container is a little bit full...I can see the needles inside...you know I'm so afraid of that...I think that trauma is still within me."*

*Resp 08 "...back to the fears now maybe till this day I still don't want to work in a ward just for that whole setting I prefer being in a clinic."*

From the data analysed, the needlestick injury resulted in various degrees of trauma. There was an example of extreme emotional distress where one respondent was thinking of ways to kill herself had she sero-converted.

*Resp 03 “...I was thinking of ways to kill myself...I thought what if they are positive then how am I gonna end my life? ...am I gonna stand on the road....I was thinking of a better way...a quicker way to end my ...I cannot, I cannot accept it no matter what.”*

The trauma of the needle-stick injury elicited varying emotional responses in the respondents. This was a result of the reactions from the staff and family when the needle-stick injury occurred. Traumatic experiences according to Meintjies and Killian (2010:657) as cited in Uys and Middleton (2010), involve a sense of danger and a threat to one’s life as well as intense feelings of fear, helplessness and/ or horror. The authors further state that when trauma is intensely frightening and painful, the person responds in two ways which is avoidance and re-experiencing. Avoidance as described by the authors is when the person tries not to think about the experience and avoids places and things associated with the incident. They further describe Post-Traumatic Stress Disorder (PTSD) as a term developed by psychologists for a severe trauma reaction and should only be used if the symptoms (as described) are as follows:

- many, including avoidance, re-experiencing and increased arousal (anxiety)
- severe enough to interfere with the person’s normal living
- present for a long time after the trauma (at least one month, if not longer)

A respondent (*Resp. 01*) still felt numb two months after the incident occurred. This emotional reaction of the respondent represents typical behaviour of a severe traumatic reaction. Some of the respondents had discontinued their post exposure prophylaxis (PEP) shortly after they had commenced with it because of the side effects. In some cases, the

respondents shared extreme emotional responses regarding their fear of becoming HIV positive but the concern is that the consequences of discontinuing PEP could be very traumatic in the sense that there is a high risk of sero-conversion. Discontinuation of PEP also has financial implications because the course of drugs is very expensive.

Data from the transcripts has shown that the needle-stick injury had a profound effect on the physical, emotional and psychological states of the respondent. The lives of the respondents changed dramatically following the needle-stick injury.

#### **4.4.3 Intervening factors**

##### ***Knowledge of student***

Some of the respondents were aware of the policy regarding exposure to bodily fluids which is in their clinical workbooks. The respondents are required to read the policy to familiarise themselves with it in the event of a needle-stick injury. Some of them had read it but had a vague idea of the content of the policy, because they did not expect to sustain a needle-stick injury.

*Resp 01 “... I definitely do think that along with whatever is in our books ... they should tell you step one report, step two... because I mean I know it sounds like we are Sub A children but when you in that situation... like I said... I was numb so there was nothing going through my head.”*

*Resp 06 “... Ja in the back of our book we have the needlestick policy... I just read about the needlestick but I didn't know about the window period.”*

Lack of knowledge about reporting the needle-stick injuries by the respondents could have a negative impact on the respondent if a sero-conversion occurred. Two respondents failed to report the needle-stick injury to the SoN, UWC. They stated that because of the negative support and unavailability of the nursing staff at the SoN they decided not to inform the SoN.



*Resp 03 "...I am wasting my... but it was not the treatment I got at all. I ended up not submitting that form ...that I filled in and give it to the faculty cause when I came here I asked by the reception... who can I speak to regarding this and they seemed as if they almost struggling to give me an answer."*

*Resp 08 "... uhm it happened on a Sunday so I contact no one.... no I am sorry I didn't actually notify her (the clinical supervisor)."*

### ***Knowledge of Professional Staff in Service setting***

The professional nurses' lack of knowledge about the procedure to follow post needle-stick injuries resulted in a delay in the commencement of post-exposure prophylaxis treatment (PEP). Incorrect information about post exposure prophylaxis by the professional staff affected the choices of the respondents about whether to start the PEP.

*Resp 03 "... Oh, I ended up not taking the medication cause she said to me she would advise... the doctor said ... I would advise that you do not bother taking them because it would be useless, the guy tested negative, you are negative and is not in a window period so you just putting yourself at the misery of taking the medication."*

*Resp 06 "...they (the staff in the ante-natal clinic) didn't care what's going to happen afterwards until my supervisor had to fight for me and they said...'No in this clinic we don't follow this (the protocol), no blood must be drawn if you are negative.'"*

*Resp 07 "...there was a mix up somehow...I don't know how...looks like the whole day was a mix up...Mrs X at UWC was supposed to call the doctor on Campus (UWC), tell them that I'm coming there for the blood and the prophylaxis but when I got there they said they can only do me the next day...according to my knowledge, the prophylaxis must be started within 24 hours."*

The professional nurses' lack of knowledge about the need for counselling resulted in some of the respondents not being counselled.

*Resp 01 “...the doctor asked me ‘do you require counselling and he gave me brief counselling on the HIV side of it and explained to me what the prophylaxis was.”*

*Resp 06 “...I wasn’t counselled in this place cause I’ve never knew my HIV status and then in the second place there were more than 15 people in the room when I was testing.”*

*Resp 08 “...in the trauma unit...I didn’t receive counselling...I got a pat on the back...good luck...don’t worry.”*

### ***Preparedness for practice***

Students who work under the direct supervision of a registered nurse in the clinical placement setting are frequently asked to carry out a procedure and will not question the instruction for fear of repercussions or being labelled as insubordinate. Student nurses are taught to always obey orders during their training. This type of submissive behaviour from the students may cause them to perform procedures that may be outside of their scope of practice. It may also contribute towards unsafe working conditions and an increased the risk of injury especially if there is a lack of equipment and substitute equipment is used. Some of the respondents were not yet competent to perform invasive procedures.

*Resp 04 “...I was supposed to give the patient a Clexane injection so there’s always a limited amount of kidney dishes in the ward...so I thought to myself, the Clexane comes already packed so when I’m done, I’m gonna put it back in that packet and throw it away in the sharps container...I gave the injection and with the putting of the Clexane syringe back into the packet, I don’t know how it happened but it went straight into my finger.”*

*Resp 05 “... She asked me like uhm “but why would I want to use a needle” ... you yourself told me that I must use the needle and she was like “no lancets in the ward...”*

*those aren't things they teach us here that is things that we need to "steal with the eye for ourselves."*

*Resp 07 "...the first time I drew blood, the sister showed us how...my very first time ...there's only one sharps container ...the HGT and the HB thing where they do that ...it's there ...so that's why she showed us about recapping and then throwing it in there."*

Policies and procedures are compiled to ensure standards of operating practices and the above data clearly indicate that as a result of the lack of knowledge of policies and procedures by the professional staff in the service setting, there was a significant impact on the management of respondents who sustained needle-stick injuries. The data also revealed a gap in pre- and post-test counselling which represents a vital phase in the management of needle-stick injuries. There appears to be a nonchalant attitude with regards to the respondents' knowledge about the policy and procedure related to needle-stick injuries in their workbooks. The data revealed that due to their "student status", the students were instructed by the registered nurses to carry out procedures that they are unable to perform. It would appear that respondents felt that they were obliged to perform procedures in the service setting for which they are not properly trained.

#### **4.4.4 Need for Support**

##### ***Support from family and friends***

Support systems are the people in the environment of the individual who are available and who the individuals depend on to help them resolve problems Uys (2010:274). Most of the respondents received overwhelming support from their immediate family, friends and partners. The family provided a crutch for the respondents whilst they were dealing with this experience. Friends of the respondents played a very important supportive role. They were able to give immediate support because they all resided on the UWC campus. Respondents

told their friends first because they worked at the same service settings at the time of the needlestick injury.

*Resp 01 “...my husband was very sympathetic...he was angry because of how they treated me.”*

*Resp 04 “...my mom came to fetch me on Sunday...so my sister and everyone was there and I talked to them...they were all very supportive...they supporting me at the moment very well, they phoning me every day...my sister came to visit me yesterday as well.”*

*Resp 04 “...when I’m alone in my room I think about what happened, that’s why my friends at this moment...they don’t let me ...I don’t have a chance to be alone. I’m normally with them ...or they come to my room or we go and study...so they don’t give me a chance to be alone because most of them are nurses and they probably know what the thoughts are going to be.”*

*Resp 06 “...my friend...she was working in labour ward and I told her ‘hey girl, I pricked myself’ and she said ‘let’s go to the sister quick’ and I didn’t want to go...she went to tell the unit manager.”*

### ***Support from the staff in service settings***

Some of the respondents felt that the staff in the service settings was not supportive. They felt that they were indifferent and did not care what happened to them.

*Resp 06 “...when I went to the doctor, the doctor said there’s nothing, okay...the new doctor said ok ay I must take your blood and then we waited for him and we were just filling out the forms and the other doctor said ‘no this must not be done’ and they teared the paper and said I must go back to the ante-natal...I was treated like up and down, up and down.”*

*Resp 08 “...the following day after the needlestick injury, the doctor said to me that I have nothing to worry about...there wasn't a need for me to go on the ARV's, but I insisted 'no actually I would like to go on the ARV's.'”*

Compassion, empathy and commitment are only a few characteristics that a nurse must possess. Nursing almost always require an individual to work long hours. Student nurses who are placed in the service settings usually work under the direct supervision of the registered nurse. They are not an 'official' part of the work force in the setting because of their student status, however, they do form part of a health team by virtue of them performing the basic nursing procedures. Students should feel valued, appreciated and supported whilst working in the service setting and the above anecdotes clearly shows that there is a lack of support from staff in the service setting especially after a traumatic incident such as a needle-stick injury. One of the respondents questioned her worth as student.

*Resp 01 “...I felt that... you know when I get to a facility, I can only speak for myself...I work, I give them my everything, I give them the best that I can give....that day all I asked was to be dealt with a little compassion.”*

#### ***Support from the staff at the Higher Education Institution (HEI)***

The support from the clinical supervisors who accompanied the respondents in the service settings was excellent. Once the supervisors were notified, the respondents did not feel 'lost' and was guided through the process. The counselling services at the university also proved valuable to some of the respondents.

*Resp 01 “...when I got home I phoned my supervisor...we spoke quite long and he asked me if I am okay and asked me about my husband if he is okay.”*

*Resp 06 “...the normal procedure was not followed...not at all cause after that the final test was negative...I cannot draw blood for further testing and I cannot take*

*ARV's ... until my supervisor came ... otherwise for students there was no one standing up for us...we didn't know the procedure."*

*Resp 04 "...its (counselling sessions at UWC, student support services) working now because I'm having it every day, so every day it's like I'm having this bond with my counsellor."*

One of the respondents (*Resp 07*) was very disappointed with the support from the staff at the HEI. The respondent shared that despite contacting her clinical supervisor and informing him of the needle-stick injury, the supervisor failed to present himself to the service setting where the incident occurred.

The data clearly indicated that there were two dimensions of support. Most of the respondents had excellent support from the family, friends and supervisors but one respondent did not receive any support from the supervisor. There was definitely a lack of support from the staff at the service setting. This lack of support can affect the student negatively with regards to whether the student decides to complete the PEP treatment. Students spend a lot of their clinical hours in the service settings and should feel supported at these service settings.

#### **4.5 Conclusion**

In this chapter, the researcher has discussed the data analysis procedure in detail. The data was analysed manually by the researcher who was guided by Tesch (1990:142). Through a comprehensive and meticulous method of analysis, four main themes emerged from the data. These themes were discussed in detail with the insertion of relevant anecdotal notes that were taken from the transcribed interviews. The anecdotes served as the voice of the respondents and added to the authenticity of the data analysis process.

Findings from the study have validated the suspicions of the researcher that needle-stick injuries occur in the skills laboratory using unused needles and that this behaviour is learned and poses a risk to the student nurse in the 'real world setting'. The narratives of the

respondents, together with the supporting literature have revealed that the experience of a needle-stick injury can cause Post-Traumatic Stress Disorder. The data analysis has also highlighted the deficiency in adequate management post occupational exposure.

A detailed report on the findings of the data analysis will be discussed in the next chapter of this study as well as the recommendations based on the research findings. Also included in chapter five is the linkage between the findings of the study and current research literature.



## CHAPTER FIVE

### CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Introduction

The previous chapter detailed the data analysis with the emergence of themes relating to the lived experiences of undergraduate nursing students who sustained needle-stick injuries in their clinical placement. Anecdotes from the interview data were included to reflect the voices of the participants in the categories and themes.

In this chapter, the conclusion of the study will be discussed and recommendations relating to needle-stick injuries will be made to the SoN, UWC. These recommendations will effectively heighten the students' awareness of the sequence of events that surround needle-stick injuries which includes the physical and emotional consequences of such injuries.

The aim of this research was to explore the lived experiences of student nurses at the SoN who sustained needle-stick injuries during their clinical placement. The objectives were to describe these experiences and to uncover the meaning that these experiences had for the student nurses. The researcher has, through the application of the phenomenological research process, met the aim and objectives of this research study.

The researcher initially performed a limited literature review to get a sense of the existing literature relating to needle-stick injuries. The researcher then identified that from a qualitative perspective there was a deficiency of literature pertaining to the phenomenon. Quantitatively, there were a multitude of research studies about needle-stick injuries and the researcher undertook a qualitative study which was the best fit with the research topic.

After the data were collected the researcher performed a more extensive literature review. Moustakas (1994: 111) suggested that in preparation to conduct a phenomenological study, a



review of professional and research literature related to the research topic must be conducted. The review process involves assessing relevant studies, distinguishing their designs and methodologies and identifying any gaps in the literature which will inform the investigator as to what new knowledge is being sought. In this study, the researcher applied Moustakas principles related to the review of literature.

## **5.2 Conclusions**

The conclusions will be discussed under the emergent themes which will be supported by relevant literature. The themes are as follows: traumatic incident (*account of the incident and setting the scene*), reaction to the traumatic incident (*physiological reaction, emotional reaction of the student and family, the reaction to treatment and the reaction to nursing practice*), intervening factors (*knowledge of the student, knowledge of professional staff in a service setting and preparedness for practice*) and need for support (*support from family and friends, support from staff in the service settings and support from staff the HEI*).

### **5.2.1 Traumatic Incident**

#### *Setting the scene and the account of the incident*

The findings in this study has revealed that the needle-stick injury is a devastating event, that the respondent's recollection of how the events prior to the needle-stick injury became clear and vivid. The respondents was able to remember precise details of time, date, place and day (see 4.4.1). Despite the length of time between the injury and the interview, the nursing instructions that were given on the particular day was recalled in detail (see 4.4.1) and the instruction that was given by the registered nurse, was remembered by the respondents, despite the length of time that had passed since the injury.

Moody (2002: 95) presented similar findings of doctors' experiences about needle-stick injuries. The doctors presented detailed descriptions and vivid recollections about the events surrounding their needle-stick injuries. Similar traumatic experiences were shared by both student nurses and doctors.

The details of the actual injury were retold as if it had happened the previous day (see 4.4.1). This re-living the incident is a symptom of Post-Traumatic Stress Disorder (PTSD) because according to Meintjies and Killian (2010: 657) as cited in Uys and Middleton (2010: 657), re-experiencing is one of the symptoms of PTSD and if the symptom is present for more than one month, then a diagnosis of PTSD can be made. The detailed description of how the doctor's injury occurred also confirms the trauma that the doctor's experience.

During the process of the second literature review, the online thesis of Thornton (1998) had become available. Thornton (1998: 44) performed her study at the University of South Australia about the lived experiences of the registered nurses who have sustained a needle-stick injury. The researcher revealed that the participants shared their experiences by describing the details about the time, date and place where the injury occurred. This act of sharing allowed the reader to understand the context in which the injury occurred.

### **5.2.2 Reaction to the Traumatic incident**

*This includes the physiological reaction of the student, the emotional reaction of the student and family, the reaction to treatment and the reaction to nursing practice*

The physiological reaction that the respondents displayed in this study were based on symptoms of what they experienced immediately after the needle-stick injury (see 4.4.2). These reactions were similar to that in Thornton's (1998:46) study where the researcher found that there was a reactionary response to the injury. She further explains that the

vulnerability of the participants came to the fore when they experienced these reactionary responses after the needle-stick injury occurred.

Williams (2005: 58) also found in her qualitative study about the reasons why health care workers report a needle-stick injury that the participants were crying and were overcome with sadness immediately after the injury.

Aguilera and Mesick (1982) as cited in Uys and Middleton (2010: 274) state that “stressful events are part of every one’s normal life...and that these events have the potential of becoming a crisis.” The authors further state that “the critical incidents that play a role in causing a crisis should always be identified”, thus making it easier to understand the crisis and to find a solution.

The findings of the above studies have confirmed that irrespective of who the respondents are or where the needle-stick injury occurs, all persons who sustain a needle-stick injury may exhibit the same symptoms.



Nurses have an obligatory duty to care for all patients irrespective of the patient’s disease profile. In this study, findings have revealed that the needle-stick injury had aroused feelings of fear within the respondents. Some of the respondents had sustained needle-stick injuries from HIV positive patients. These feelings of fear escalated at the thought of having sero-converted. In this study, there was one example of an extreme emotional experience whereby the respondent was thinking of ways to kill herself, had her results showed that she became HIV positive after having the needle-stick injury (see 4.4.2).

Anxiety, fear and anger surfaced in the nurses who had sustained a needle-stick injury according to Ziady (2007).

Ncama and Uys (2003) in their research article of exploring the fear of contracting HIV/AIDS among trauma nurses in the province of Kwazulu-Natal, stated that their findings revealed “that trauma nurses perceived themselves to be at risk of acquiring HIV/AIDS from their working environment despite the available precautionary measures and needle-stick injuries appeared to be the main source of fear”.

A quantitative study on needle-stick injuries in a Ugandan teaching hospital conducted by Newsom and Kiwanuka (2002: 517) revealed that subsequent to sustaining a needlestick injury, the participants developed feelings of anxiety and depression. Moody’s (2002: 72), qualitative study also confirmed that one of the participants had thoughts of immediate death after the incident occurred.

The findings relating to the family’s responses to the needlestick injury in this study of nursing undergraduates showed that there were both positive and negative responses. These responses were elicited by various family members out of love, fear and concern, especially with regards to the risk of their loved ones contracting HIV infection. Most of responses were positive however there was one respondent whose spouse had demonstrated feelings of anger toward her (see 4.4.2).

Moody’s (2002: 70) findings, revealed that the families of the injured had expressed their emotions much more than that of the doctors themselves and the researcher deduced that the behaviour of the family members showed genuine concern and this behaviour was prompted by fear of their loved one’s safety. The doctors felt that as a result of their family’s response, they could not express how they were feeling. Moody likened this behaviour to what he calls ‘emotional deprivation’. A theme of isolation was used in Moody’s (2005:75) study to describe the doctor’s experience after disclosing their injuries to their families. The

respondents stated that they did not expect their family to understand what they were experiencing because they were not medically trained.

Thornton (1998: 57) in her study revealed that one of the respondents was pregnant at the time and she had to inform her husband of the injury. The respondent became very fearful about the disclosure and tried to 'down play the incident'. Williams (2005: 59) in her study also stated that the respondents feared their family's reaction to their injuries and the participants received a more supportive response from their friends.

Managing a needlestick injury includes the injured health care worker commencing on post exposure prophylaxis (PEP). Various medical institutions as well as HEI have different policies with regards to the type of drugs which should be commenced. The findings related to the reaction to treatment in this study show that many of the respondents experienced common side effects which included nausea, vomiting and headaches and one respondent experienced a hallucination whilst taking the PEP (see 4.4.2). It would appear that the findings of this study are supported by similar experiences in the studies in the literature.

The medication for PEP depends on the following factors: the status of the source patient, the size of the bore of the needle/device, the type of body fluid to which the person was exposed. Evian (2006: 327), stated that

“treatment is highly recommended if a health care worker is exposed via the following...a penetrating injury by a blood contaminated needlestick, an instrument contaminated with semen, cerebro-spinal fluid (CSF) or other serous fluids (not including faeces and urine), a skin or mucous membrane contamination that involves a very large volume for a prolonged period of time, a large wound and a significant contamination of the eyes or mouth”.

There are many side effects of the medication. Evian (2006: 324) states that the effects could range from the more common to the very rare effects. The more common side effects include nausea, vomiting, and headaches whilst the severe effects include bone marrow suppression resulting in anaemia, pancreatitis or renal stones (very rare).

Ziady (2007: 13) in the study of the nurse's experience of exposure to possible HIV infection after an exposure/injury on duty, revealed that there were complaints of nausea, vomiting, sleeplessness, palpitations, abdominal discomfort, amongst others that the participants had experienced.

In this study it was revealed that whilst the respondents were taking the PEP post needle-stick exposure, the respondents were presented with challenges which included non-attendance at their clinical placements as well as at their class lectures. The side effects became unbearable and some of them made the choice to default and discontinue the PEP (see 4.4.2).

The injury in itself is a traumatic event which becomes the focus in the life of the student and the findings from this study has revealed that the experience of sustaining a needle-stick injury is so overwhelmingly traumatic that the injured student had developed a Post-Traumatic Stress Disorder (PTSD).

Referring to chapter four in this research, the criterion for this disorder, as described by Meintjies and Killian (2010: 657) as cited in Uys and Middleton (2010: 657) is that when symptoms such as avoidance, re-experiencing and increased anxiety develops and progressively becomes worse especially enough to interfere with the person's normal life and is present for at least one month or more, then a diagnosis of Post-Traumatic Stress Disorder can be made.

Anecdotes in the data relating to avoidance, anxiety and re-experiencing the injury have confirmed that the students have experienced a Post-Traumatic Stress Disorder (see 4.4.2). The fact that the students are able to recall with such clarity, the past events in minute detail has demonstrated that symptoms have been present for much more than one month.

Avoidance of returning to the place where the injury occurred and performing procedures involving the use of needles became evident to the respondents after the injury. Some of the fears progressed into phobias for the respondents and upon returning to the service setting, most of them chose to perform tasks which did not involve injections or drawing blood. The sight of a needle and needles in a full sharp container made them feel anxious. One of the needle-stick injuries occurred in a hospital ward and since the injury, the respondent has developed a phobia for working in a ward setting. (See 4.4.2)

Thornton (2005:57) discusses the theme of avoidance and the researcher states that “by avoiding both the patient and the area where the injury had occurred the participants wanted to eliminate the fact they had sustained the injury by not having to face people who had become aware of their injury”. This is further confirmed by Ziady (2007) who have found that post exposure, the nurses developed extreme vigilance and became over cautious in the workplace and tended to avoid related tasks.

### **5.2.3 Intervening Factors**

Findings in this study have revealed that some of the students were aware of the policy that was in their clinical workbooks, however because they did not expect to sustain a needle-stick, and therefore their knowledge of the policy was vague. The researcher also found that some of the respondents failed to report the needle-stick injury because of factors relating to negative support and unavailability of their clinical supervisors (see 4.4.3).

Moody (2002) also found that the lack of knowledge about the protocols regarding managing a needle-stick injury post exposure on the part of two of the doctors was evident as well. The lack of knowledge of the nursing students in this study and the doctors' in Moody's (2002) study has revealed that irrespective of what qualification a health worker has, this lack of knowledge still exists.

Diprose, Deakin & Smedley (2000: 767) in their study done in the United Kingdom on the ignorance of post-exposure prophylaxis guidelines following HIV needle-stick injury found that "timely post-exposure prophylaxis, after needlestick exposure to high risk body fluids, is believed to reduce the risk of sero-conversion to HIV." Another study done by Cervini & Bell (2005) as cited in Blackwell, et al (2007), revealed that "students did not report needlestick injuries due to lack of knowledge of how to report the injuries." Trimm, *et al*, (2003) as cited in Trimm, (2004) stated that "only 10% of health care workers knew how to report a needle-stick injury despite a comprehensive training and education programme". This practice of underreporting of needle-stick injuries was further quantified by Van der Berg (2009: 74) in her study about the knowledge and practice of undergraduate nursing students regarding universal precautions found that at the SoN at the UWC. Van der Berg (2009: 74) reported that 45.5% of the undergraduate nursing students failed to report the occupational exposure to blood and bodily fluids."

In South Africa, The Code of Good Practice on Aspects of HIV/Aids Employment discusses the following regulations regarding compensation for occupationally acquired HIV, amongst others: Employers should take reasonable steps to assist employees with the application for benefits, i.e.

- providing information to affected employees on the procedures that will need to be followed in order to qualify for a compensation claim and



- assisting with the collection of information which will assist with proving that the employees were occupationally exposed to HIV infected blood.

These findings clearly show that failure to report a needle-stick injury has a direct impact on the legislation of compensation to the affected health care worker, especially if the respondent sero-converts.

In this study, the lack of knowledge of the professional nurse regarding the policies and protocols about the management of exposure to bodily fluids also surfaced (see 4.4.3) It was also revealed that lack of knowledge regarding the protocols had prompted the respondent to label the behaviour of the professional nurse as indifferent (see 4.4.2). The researcher identified a gap relating to the knowledge of the professional staff with regards to the management of health care workers post exposure.

Findings from this study have also shown that student nurses working under the supervision of a registered nurse has an obligation to carry out orders that are given to them. Depending on their year level, they might not be competent in a particular clinical procedure which might not be in their scope of practice. The result of this instruction is that the student will perform the procedure but is not ready for it. This will then increase the risk of sustaining a needle-stick injury. Lack of resources relating to specific equipment for specific procedures may cause the student to improvise when performing a procedure that the student is not ready to perform. These are added risks for an injury to occur (See 4.4.3).

Moody (2002) in his study revealed that a lack of infrastructure relating to the availability of the anti-retroviral starter packs, protective items such as gloves and that placed the doctors at risk for a needle-stick injury or a sero-conversion in government hospitals.

Findings from a study done by Clarke, Sloane and Aiken (2000: 1115) showed that organisational characteristics and staffing levels played a role in the nurse's exposure to blood-borne pathogens and "nurses working in units with poorer work climates and lower staffing levels were substantially more likely to report the presence of risk factors associated with needlestick injuries."

#### **5.2.4 Need for support**

The researcher found in this study that one of the respondents, who after informing her spouse that she pricked herself with a needle from an HIV positive patient, reported that her spouse became angry and blamed her for the injury (see 4.4.2).

Moody (2002: 70), found that the participants underwent emotional deprivation as a result of the lack of support from family members. Furthermore, the reason for the lack of support was that the family members lacked sufficient medical knowledge about the injury and the participants felt that they had to comfort their family and could not express their feelings. They did however surmise that the feelings of the family's fears toward the injury could be viewed as support and concern".

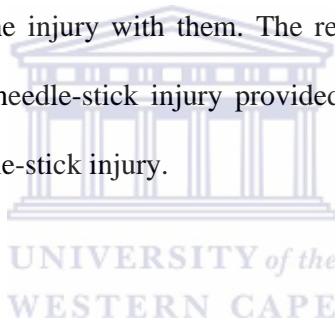
This negative behaviour displayed by loved ones can be due to fear of the injured respondents contracting HIV infection, as Moody's study (2002:70) where the family members of the participants reacted in a negative way.

Findings in this study revealed that there was a definite lack of support from the staff at the service settings/ hospitals. They expected the students to follow the post injury guidelines themselves. Despite having policies in the service settings, the procedure is not adhered to and respondents are left feeling angry, disappointed and are being sent away from the service settings to the HEI for assistance (see 4.4.4).

In Moody's study (2002: 73), the researcher found that immediately after the needle-stick injury, there were no starter packs of the ante-retroviral treatment in the hospital. This lack of essential resource caused feelings of rage and anger within the participant and Moody labelled this category as deprivation due to a dysfunctional medical support.

In this study, it was shown that the clinical supervisors who accompanied the students in the service settings were very supportive and in some cases, had to step in, guide and assist the respondent to follow the policy of the needle-stick injury. The clinical supervisors were also available to the respondents had they needed their support (see 4.4.4).

Thornton (2002: 60) found that the registered nurses received overwhelming support from their colleagues after sharing the injury with them. The researcher further stated that their colleagues who experienced a needle-stick injury provided much more support than those who had not experienced a needle-stick injury.



### **5.3 Recommendations**

It is the researcher's recommendation that the following be instituted:

- To decrease the incident rate of needle-stick injuries at the SoN.

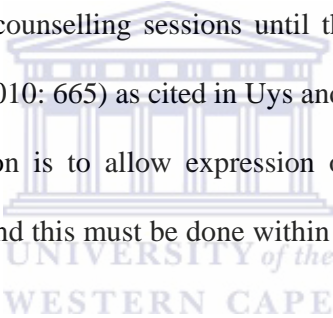
The researcher proposes that an extensive health education and prevention strategy be introduced as soon as the undergraduate nursing students start the programme. The aim of the strategy would be that all the nursing students have a thorough knowledge of the policy and procedure following a needle-stick injury.

The researcher has uncovered that students prick themselves in the skills laboratory at UWC and do not report it. Failure to report these incidents means that this incorrect behaviour becomes internalised and the risk of a needlestick injury increases when the student is dealing with real patients. The researcher proposes that the students be informed about reporting

these injuries and the student should write an incident report which will be placed in the folder of the student. Corrective measures must be dealt with immediately to avoid further injury. The researcher has suggested that safety with regards to universal precautions including recapping be made a critical factor on the assessment tools of the students. At a formal meeting of the Clinical coordination committee this suggestion has been formally adopted by the SoN at UWC.

- To implement a programme of structured counselling sessions for the undergraduate nurses at the SoN, UWC.

The recommendation is that the students who have sustained needle-stick injuries in their placements undergo structured counselling sessions until the student has emotionally been healed. Meintjies and Killian (2010: 665) as cited in Uys and Middleton (2010:665) state that “the aims of trauma intervention is to allow expression of the traumatic experience and feelings around the experience and this must be done within a safe relationship with someone who is in control of the process.”



The relevant staff at the SoN should liaise with the counselling service to monitor the students' progress. The issues between the counsellor and the student will remain confidential and this should be respected, but documentation regarding the student's attendance at the counselling sessions is important because this record will serve as evidence when it comes to problems relating to absenteeism and fulfilling of clinical hours. Other concerns regarding re-experiencing and avoidance can be addressed by gradually introducing the student into the area that they are avoiding. This process must be done following the advice from the counsellor whether the student is ready face the avoidance and the student should choose who will accompany him/her to the area.

- Improve the procedure of reporting an injury at the SoN, UWC.

The researcher recommends that all the staff, including the nursing and administrative, at the SoN, UWC be made aware of the policy and procedure when an injury occurs, so that the student can be supported when the injury occurs. Staff should also be made familiar with the relevant documentation, so that the legislative requirements are met.

#### **5.4 Conclusion to the Chapter**

This chapter focused on all the events surrounding needle-stick injuries as informed by the research findings. It has been confirmed in this study and other studies that the experience of sustaining a needle-stick injury is very traumatic and it affects the individual emotionally and physically. Needle-stick injury can destroy a nurse's career and personal life if an infected blood-borne organism has been transmitted via a needlestick injury. The educators and people within the life of the student nurse should demonstrate empathy toward a student that has undergone such an experience.

The researcher plans to disseminate these research findings to the SoN at the UWC through a presentation, so that the staff at the School of Nursing is informed about the consequences of a needle-stick injury and the effect it has on the student nurse. This study has confirmed the facts that in South Africa the rate of new cases of HIV is spiralling out of control with more and more patients being admitted to hospitals and attending clinics for ART. The likelihood of students nursing patients with HIV is real and needle-stick injuries sustained are very traumatic to student nurses, especially if the source patient is HIV positive. At the SoN at the UWC there has not been any documented case of a sero-conversion as a result of a needle-stick injury even though the data has shown that some of the respondents did prick themselves with contaminated needles.

So the question remains. Have these students just been fortunate not to sero-convert? Well, the researcher is of the belief that no health care worker especially student nurses, should contract HIV or any transmissible disease because of a needle-stick injury.

To conclude, the core function at the SoN is for the student to exit the undergraduate programme after four years of training as registered nurses. However this exit rate may be affected if the student nurses sero-convert during their training. It therefore becomes the responsibility of the SoN to ensure that the student nurses are adequately prepared both theoretically and practically prior to stepping into a service setting.



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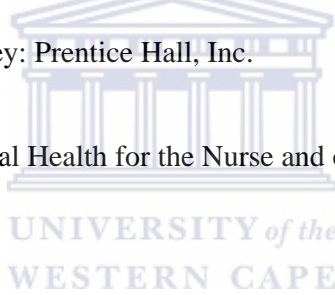
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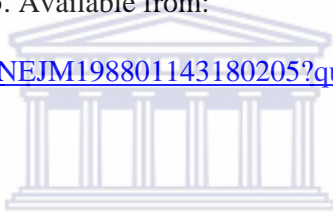
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## **APPENDICES**

### **APPENDIX A**

#### **THE INTERVIEW SCHEDULE**

The researcher proposed to ask the following main question to the participant.

Would you please tell me about your experience when you sustained the needle-stick injury?

The researcher proposes to ask the following probing question to the participant.

Can you please tell me more about / what do you mean by / can you tell me what occurred after the needle-stick injury?



**APPENDIX B**

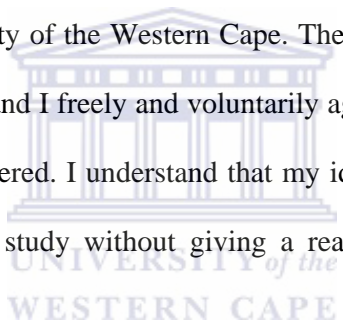
UNIVERSITY OF THE WESTERN CAPE,

Private Bag x17, Bellville 7535, South Africa

**CONSENT FORM**

Title of Research Project: Experiences of the University of the Western Cape student nurses who sustaine needle-stick injuries during their clinical placement.

I,.....hereby do consent participate in the interview which will be conducted by Mogasweri Naidoo, who is a post graduate student at the School of Nursing, University of the Western Cape. The study has been described to me in a language that I understand and I freely and voluntarily agree to participate. My questions about the study have been answered. I understand that my identity will not be disclosed and that I may withdraw from the study without giving a reason any time and this will not negatively affect me in anyway.



Participant's name.....Contact Number.....

Date.....

Participant's signature.....

Witness .....

Researcher: Mogasweri Naidoo Telephone: (021) 959-2271 Cell: 084 5129 010

Facsimile: (021) 959-2679 E-mail address: mnaidoo@uwc.ac.za

Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study coordinator:



Study Coordinator's Name: Dr. June Jeggels

University of the Western Cape

Private Bag X17, Bellville 7535

Telephone: (021)959-2278

Fax: (021)959-2679

Email: [jjeggels@uwc.ac.za](mailto:jjeggels@uwc.ac.za)



## **APPENDIX C**

UNIVERSITY OF THE WESTERN CAPE

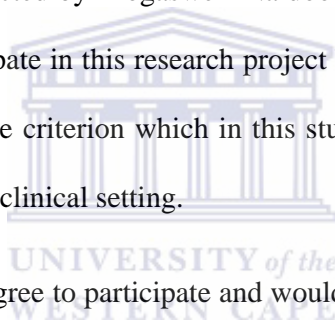
Private Bag x 17, Bellville 7535, South Africa

Participant Information Sheet

Project Title: The experiences of the University of the Western Cape student nurses who sustain needle- stick injuries during their clinical placement.

What is this study about?

This is a research project conducted by Mogasweri Naidoo at the University of the Western Cape. You are invited to participate in this research project because you are part of the study population and you have met the criterion which in this study is having sustained a needle-stick injury, whilst placed in the clinical setting.



What will I be asked to do if I agree to participate and would my participation in the study be kept confidential?

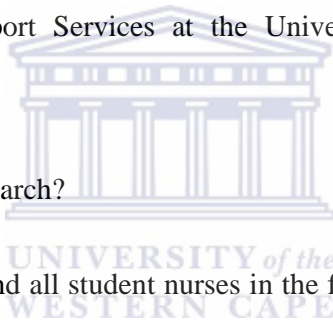
You will be asked to relate your experiences of a needle-stick injury that you have sustained, to the researcher who will record all interviews. A consent form will be obtained from you and confidentiality relating to your responses will be maintained. The answers that you give me will be listened to by me and no one else and I will transcribe them into written words. I will show these documents to you, so that you may verify the information that you have given me.

If we write a report or article about this research project, your identity will be protected to the maximum extent possible. I will put codes onto the information and proceed to continue with analysis of the data.

The interviews will be conducted in the boardroom or at suitable venue at the University of the Western Cape and it will be a one on one session between you and the researcher. The interview may last an hour.

What are the risks of this research?

Please be assured that your responses will not have any punitive effects on your studies and future studies at the University of the Western Cape. A needle-stick injury is a very traumatic event and the questions that I will ask you might make you feel very vulnerable. You might feel different emotions of anger and sadness. If this does happen to you, I will stop the interview and it may be necessary to refer you to the Psychology department of the Student Centre and Development Support Services at the University of the Western Cape for counselling.



What are the benefits of this research?

This research will benefit you and all student nurses in the future of nursing. Your responses will allow myself (the researcher) to inform the School of Nursing about the outcomes of the study and they may review the management of needle-stick injuries.

Do I need to be in this research and may I stop at any time?

Your participation in this research is completely voluntary and you may choose to stop at any time. You also have a right not to participate and there will be no repercussions if you refuse.

What if I have questions?

You may ask any questions relating to the research to the following persons:

Participant's name.....Contact Number.....

Date.....

Participant's signature.....

Witness .....

Researcher: Mogasweri Naidoo Telephone: (021) 959-2271 Cell: 084 5129 010

Facsimile: (021) 959-2679 E-mail address: mnaidoo@uwc.ac.za

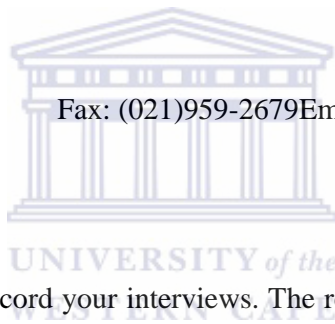
Study Coordinator's Name: Dr. June Jeggels

University of the Western Cape

Private Bag X17, Bellville 7535

Telephone: (021)959-2278

Fax: (021)959-2679 Email: [jjeggels@uwc.ac.za](mailto:jjeggels@uwc.ac.za)



Audio taping

An audio tape will be used to record your interviews. The researcher will be the only person who will have access to it. All your information and responses will be kept confidential, unless you give me consent. The research process in this study is supervised by a supervisor who will guide the researcher in the data analysis and only the content of the interview will be disclosed to the supervisor. Your name will not be given or shown to any other person.

Please choose an option from below, by the use of a tick.

-----I hereby agree to be audio taped.

-----I hereby do not agree to be audio taped.

Monetary benefits

Your participation in this research will not result in you getting any monetary benefits.

Researcher: Mogasweri Naidoo Telephone: (021) 959-2271 Cell: 084 5129 010

Facsimile: (021) 959-2679

E-mail address: [mnaidoo@uwc.ac.za](mailto:mnaidoo@uwc.ac.za)

Study Coordinator's Name: Dr. June Jeggels

University of the Western Cape

Private Bag X17, Bellville 7535

Telephone: (021)959-2278

Fax: (021)959-2679

Email: [jjeggels@uwc.ac.za](mailto:jjeggels@uwc.ac.za)



## APPENDIX D

THIS LETTER WILL BE USED TO OBTAIN ETHICAL APPROVAL FROM THE FOLLOWING PERSONS AT THE UNIVERSITY OF THE WESTERN CAPE. THEY ARE AS FOLLOWS: Deputy Vice-Chancellor (Student Development and Support), the Senate Higher Degrees Committee, the Senate Research Ethics Committee.

UNIVERSITY OF THE WESTERN CAPE

Private Bag x17, Bellville 7535, South Africa

The Registrar

University of the Western Cape

09 November 2009

SIR/MADAM

re: REQUEST PERMISSION TO CONDUCT RESEARCH



I am at present a Student in the Masters program at the School of Nursing, Faculty of Health Sciences at the University of the Western Cape.

I am currently conducting research for the mini-thesis, for the completion of the Masters Degree in Nursing Education. The title of my research is The experiences of the University of the Western Cape student nurses who sustain needle-stick injuries during their clinical placement.

I hereby request your permission to conduct interviews on the student nurse population at the School of Nursing, University of the Western Cape.

Thank you for your time and assistance

Yours sincerely

Researcher: Mogasweri Naidoo Telephone: (021) 959-2271 Cell: 084 5129 010

Facsimile: (021) 959-2679

E-mail address: [mnaidoo@uwc.ac.za](mailto:mnaidoo@uwc.ac.za)

Study Coordinator's Name: Dr. June Jeggels

University of the Western Cape

Private Bag X17, Bellville 7535

Telephone: (021)959-2278

Fax: (021)959-2679

Email: [jjeggels@uwc.ac.za](mailto:jjeggels@uwc.ac.za)



**APPENDIX E**

UNIVERSITY OF THE WESTERN CAPE

Private Bag x17, Bellville 7535, South Africa

The Director of the School of Nursing

University of the Western Cape

09 November 2009

MADAM

re: REQUEST TO GAIN ACCESS TO THE DATABASE OF THE STUDENTS WHO  
HAVE SUSTAINED A NEEDLE-STICK INJURY

I am at present a Student in the Masters programme at the School of Nursing, Faculty of  
Health Sciences at the University of the Western Cape.

I am currently conducting research for the mini-thesis, for the completion of the Masters  
Degree in Nursing Education. The title of my research is 'The experiences of the University  
of the Western Cape student nurses who sustain needle-stick injuries during their clinical  
placement.'

I hereby request your permission to access the database containing the names of student  
nurses in the undergraduate programme who have sustained needle-stick injuries.

Thank you for your time and assistance

Yours sincerely

Researcher: Mogasweri Naidoo Telephone: (021) 959-2271 Cell: 084 5129 010



Facsimile: (021) 959-2679

E-mail address: [mnaidoo@uwc.ac.za](mailto:mnaidoo@uwc.ac.za)

Study Coordinator's Name: Dr. June Jeggels

University of the Western Cape

Private Bag X17, Bellville 7535

Telephone: (021)959-2278

Fax: (021)959-2679

Email: [jjeggels@uwc.ac.za](mailto:jjeggels@uwc.ac.za)



## APPENDIX F - ETHICAL CLEARANCE LETTER

**OFFICE OF THE DEAN  
DEPARTMENT OF RESEARCH  
DEVELOPMENT**

Private Bag X17, Bellville 7535  
South Africa  
Telegraph: UNIBELL  
Telephone: +27 21 959-2948/2949  
Fax: +27 21 959-3170  
Website: www.uwc.ac.za


26 March 2010

### To Whom It May Concern

I hereby certify that the Senate Research Committee of the University of the Western Cape has approved the methodology and the ethics of the following research project by: Mrs. M Naidoo (School of Nursing)

Research Project: Experiences of UWC student nurses who sustain needle stick injuries during their clinical placement

Registration no: I0/I/19  
UNIVERSITY of the  
WESTERN CAPE

  
Peter Syster  
Manager: Research Development Office  
University of the Western Cape



**UNIVERSITY of the  
WESTERN CAPE**

A place of quality, a place to grow, from hope to action through knowledge