

**AN EXPLORATION OF HEALTH CARE WORKERS' PERCEPTIONS OF
THE NEEDLE STICK INJURY PROTOCOLS AT A LEVEL 2 HOSPITAL IN
CAPE TOWN**

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**A mini-thesis submitted in partial fulfillment 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.**

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Date: 11 May 2012

DECLARATION

I declare that *AN EXPLORATION OF HEALTH CARE WORKERS' PERCEPTIONS OF THE NEEDLE STICK INJURY PROTOCOLS AT A LEVEL 2 HOSPITAL IN CAPE TOWN* is my own work, that it has not been submitted before for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.

Mrs. Leonore Fortuin-Johnson



11 May 2012

Signed:.....

KEY WORDS:

Healthcare workers

Follow-up testing

Needle stick injuries

Non-compliance

Compliance

Human Immunodeficiency Virus

Health and safety regulations

Needle stick protocols

Blood-borne pathogen



LIST OF ABBREVIATIONS:

HWC- Health Care Worker

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



DEDICATION

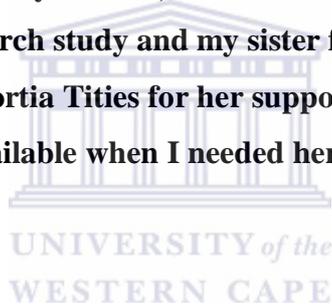
I dedicate my work to my beloved husband, daughter and son who stood by me during very difficult times...



ACKNOWLEDGEMENTS

I wish to convey my sincere gratitude to:

- **My supervisor, Dr. J.D. Jeggels for her continuous expert guidance, patience and support throughout this research journey and for continuous encouragement to complete my thesis.**
- **All the health care workers who participated in this research study by sharing their personal experiences with me.**
- **My husband, Rodger and children Jemma and Ethan for their encouragement, unfailing support and assistance, without whom I would not have been able to complete my studies.**
- **My family, especially my mother, for her encouragement and motivation to complete the research study and my sister for believing in me.**
- **My study partner, Portia Tities for her support, sharing her knowledge and always being available when I needed her.**



ABSTRACT

Background: Health care workers who sustain needle stick injuries are at risk of contracting blood-borne pathogens, e.g. Human Immunodeficiency Virus, Hepatitis B virus or Hepatitis C virus. Needle stick injuries are viewed as occupational hazards that can lead to health care workers developing acute or chronic diseases, which may lead to disability or death. Due to these health-related risks, health care workers are encouraged to adhere to universal precautions and standard operating procedures. In South Africa, the Occupational Health and Safety Act promulgated in 1993 required institutions draw up protocols in line with the regulations of the Act. However, if the health care workers do not comply with the protocols they may not be compensated for contracting a disease, e.g. Human Immunodeficiency Virus infection, following needle stick injuries. **Aim:** The aim of the study was to explore the health care workers' perceptions of the needle stick injury protocol at a level 2 hospital in Cape Town. **Research design:** A qualitative approach was used to make sense of health care workers' compliance to the protocols when sustaining a needle stick injury. An exploratory descriptive, contextual design was used to carry out an in-depth investigation of the phenomenon. **Sample:** The study was done at Mowbray Maternity Hospital, a level 2 obstetric hospital in Cape Town. The researcher made use of convenience, purposive sampling. Semi-structured interviews were used to collect the research data. **Data collection:** During the data collection phase, ethical considerations towards participants were ensured to include, among others, anonymity, autonomy and confidentiality of information. **Data analysis:** It included the following steps: reading and re-reading, coding, displaying, reducing and interpreting the data. **Findings:** Some health care workers do not view sustaining a needle stick injury as risky enough to report the injury or even go for follow-up testing. This risky behaviour can have detrimental effects on their health. There is also a lack of knowledge about the institutional needle stick injury protocol. **Recommendations:** It is recommended to have educational and training sessions for all health care workers and new employees to familiarise them with the needle stick injury protocol and policies of the institution; to provide adequate management support

following work related injuries and to make health care workers aware of the consequences of non-compliance to institutional protocol.

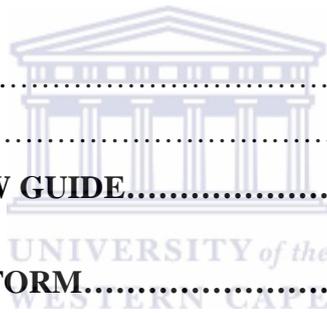


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CHAPTER 1:

INTRODUCTION

1.1 INTRODUCTION and BACKGROUND

Health care workers (HCWs) are exposed to blood-borne pathogens when in contact with patients. Percutaneous injuries, in the case of needle stick injuries (NSIs), are a serious concern for all HCWs and pose a significant risk of occupational transmission of blood-borne pathogens (Muralidhar, Singh, Jain, Malhotra & Bala, 2010). Over the last two decades the risk of having a NSI has become even greater for HCWs, as the human immunodeficiency virus (HIV) infection and the prevalence of Hepatitis B (HBV) and C virus (HBC) has increased significantly (Lachowicz & Matthews, 2009). To establish the cause of the NSI might not always be known by the HCW, but a NSI is still regarded as a possible way of contracting an infectious disease (WHO, 2000). In 1998, the Centers for Disease Control and Prevention (CDC) estimated that approximately 800 000 HCWs in the USA had sustained NSIs. The CDC found that about 2 000 of these HCWs tested positive for HCV infection, 400 for HBV and 35 for HIV (Hanafi, Mohamed, Kassem & Shawki, 2009). HCWs' perceptions about the NSIs protocols are explored in this research study.

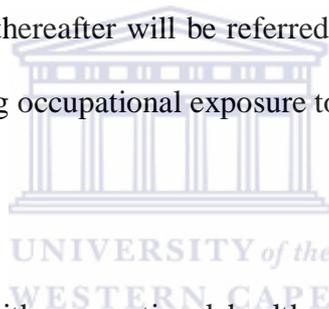
Hepatitis C virus and HIV are viewed as the two most serious pathogens that HCWs are exposed to in their daily work (Wilburn & Eijkemans, 2004). According to Lachowicz and Matthews (2009), with each percutaneous injury that a HCW is

exposed to, the risk of contamination with a patient's blood can occur. They also found that percutaneous injury could lead to acute or chronic disease, which in turn could lead to disability or death of the HCW. According to the South African Department of Health (2000), NSIs are the most common sharp injuries that occur, although there are other sharp injuries reported by health workers. NSI and other percutaneous injuries have been recognised as occupational hazards and have become the subject of the Occupational Health and Safety Act of 1993, in an effort to reduce and eliminate this preventable event.

In 1984, following the first reported HIV transmission through occupational exposure of a HCW to HIV, universal precautions, standards and legislation were enacted. These include the US Blood-borne Pathogens Standards in 1992, and the Needle Stick Safety and Prevention Act in 2000, which called for the use of safer needle devices to prevent NSI (Wilburn & Eijkemans, 2004). In South Africa, all HCWs are required to adhere to the Occupational Health and Safety Act instated in 1993. The Act states that HCWs need to take reasonable care for the health and safety of themselves and of other persons who may be affected by their acts or omissions. The Act also regulates that all HCWs are under ethical and legal obligation to protect the health and safety of their patients.

Different institutions have drawn up protocols to enact the regulation within their specific institution. An example of such an institution is Mowbray Maternity Hospital (MMH), which is the only Level 2 Obstetric hospital in the Western Cape. The

hospital provides an obstetrical service to women in the Mowbray area and also to the referral Maternity Obstetric Units (MOUs). MMH provides a variety of different services, e.g. antenatal clinic, labour ward, theatre, and postnatal and neonatal facilities. The hospital also accepts referrals from the Khayelitsha MOU, Gugulethu MOU, Retreat MOU and Mitchells Plain MOU and refers all high-risk patients to Groote Schuur Hospital, which is a Level 3 hospital. According to the hospital protocol at MMH (2009), all HCWs who are employed at the hospital will get immediate post-exposure prophylaxis (PEP) treatment after sustaining a NSI and will get all the necessary dates for follow-up care and monitoring. HCWs, including students (medical or nursing) and agency staff, will receive immediate care, which includes PEP treatment, and thereafter will be referred to their respective institutions for further treatment following occupational exposure to blood or bodily fluids.



After informal discussions with occupational health professional nurses from three different institutions, it appears as if many of the NSIs are not reported. The HCWs also do not return for their follow-up testing visits as per protocol. In a study done by Williams (2005) at an institution in Cape Town, it was found that within the specific hospital environment there was no accurate records documenting NSIs. It was found that HCWs who frequently change hospitals may be confused with individual hospital policies and that they will find their own way of dealing with the NSI incidents (Trim, Adams & Elliott, 2003).

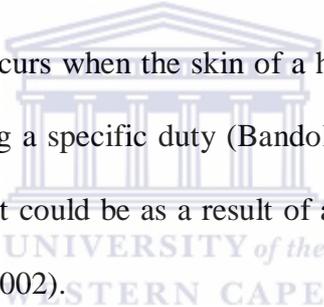
1.2 DEFINITIONS

1.2.1 Health care workers

The World Health Organization (WHO, 2009) defines health care workers (HCWs) as workers within a health care facility who have contact with patients and provide a service, and whose focus or activity is to improve health. This definition includes providers, e.g. doctors, nurses and midwives but can also include technicians and managers.

1.2.2 Needle stick injury

A needle stick injury occurs when the skin of a health worker is injured with a needle whilst performing a specific duty (Bandolier, 2003). The health worker can cause the injury or it could be as a result of a needle being left exposed by someone else (Moody, 2002).



1.2.3 Blood borne pathogens

Blood borne pathogens are seen as microorganisms found in human blood that cause infection and disease in humans (Alvare, Dugan & Fuzy, 2005).

1.2.4 Perceptions

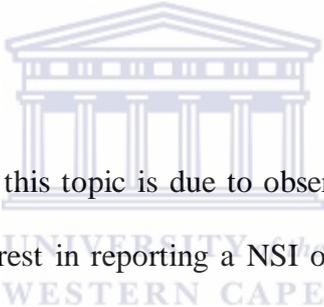
Perception is seen as the process by which individuals organise and interpret physical impressions to give meaning to their environment. This behaviour is

based on the perception of what reality is and not on reality itself (Robbins, Judge, Odendaal & Roodt, 2009).

1.2.5 Protocol

Protocol means the correct code of conduct which refers to the correct procedures to be followed and that these procedures are done consistently and with ease (Boswell, 2006).

1.3 RATIONALE

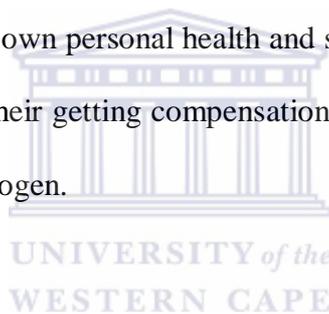


The reason for my interest in this topic is due to observations that were made when HCWs did not show any interest in reporting a NSI or going for follow-up testing. HCWs at this specific obstetric hospital are exposed to blood on a daily basis, whether they are working in the labour ward, postnatal ward or even the nursery. The HCWs work with patients who are HIV positive and there are also patients who come to the facility unbooked or unsure of their HIV status. Despite these risks I still found that many HCWs are refraining from using gloves and other protective measures when working with blood and needles.

Having sustained a NSI myself, I have insight into the need for the reporting and initiating treatment and also the importance of follow-up testing. In doing my first literature review on NSI protocol I wanted to understand how HCWs perceive the NSI

protocols and whether they are aware of the consequences of not complying to the protocol. However I found that the literature focused mainly on the number of HCWs reporting NSIs and taking the PEP treatment. I could not access any qualitative literature on whether HCWs are complying to NSI protocols.

I established through informal discussions with different categories of HCWs (i.e. doctors, professional nurses, nursing students and medical students), that it seemed as if they find the reporting of NSIs or taking of antiretroviral (AZT) drugs as unnecessary. It is unclear whether they are aware that their actions could have long lasting consequences on their own personal health and safety. Their actions could also affect their family lives and their getting compensation, should they get infected with a dangerous blood-borne pathogen.



1.4 PROBLEM STATEMENT and RESEARCH QUESTION

Due to the ever-increasing risk of HCWs' contracting blood-borne pathogens and the risk involved in contracting any of these pathogens, this issue has become an even greater concern. Despite the different health and safety protocols in place it appears as if HCWs are still at high risk of having a NSI. It is unclear whether HCWs are aware of the protocols and even if they are, whether they comply with the prescribed guidelines of the protocols. Health care workers who do not comply with the protocol could face serious consequences related to the payment of compensation for work related injury or disease. Due to the risk of HIV transmissions and the realities of needle stick injuries amongst HCWs, the following question arises: What are the

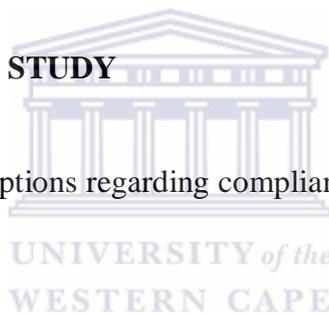
perceptions of HCWs regarding the NSI protocol at MMH? The findings of the study may clarify some of the perceptions of the HCW about protocols and compliance to protocols and add to the existing knowledge about the topic.

1.5 AIM

The aim of the research is to explore health care workers' perceptions of the NSI protocol at a Level 2 hospital in Cape Town.

1.6 OBJECTIVE FOR THE STUDY

To describe the HCWs' perceptions regarding compliance to NSI protocols at a Level 2 hospital.



1.7 METHODOLOGY

A qualitative approach and exploratory, descriptive, contextual design was used to explore the perceptions of HCWs regarding the NSI protocol (Houser & Bokovoy, 2006). I made use of convenient, purposive sampling method to select participants for the study. To obtain rich data I used semi-structured interviews at a time convenient for both the participant and the researcher.

All interviews were conducted at MMH in a private room and consent was obtained for audiotaping all the interviews. To attend to rigour of the study, I made sure that all interviews were transcribed verbatim to ensure that the data was a true reflection of what the participant said during the interview. During the data analysis process I ensured that all the data was identified, coded and categorised. This process included reading transcripts, coding them, displaying the categories by colour coding, and reducing and interpreting the data (Ulin, Robinson & Tolley, 2005). The themes and categories that emerged from the data was discussed and recommendations based on the research outcomes were formulated.

1.8 ETHICAL CONSIDERATIONS

As a researcher you need to acknowledge those who contribute to the research and to communicate results accurately, considering the consequences of the research (Brink, 2006). The proposal for this study was submitted to the Senate Committee and Higher Degrees Committee of the University of the Western Cape (UWC) for ethical clearance and approval (see appendix 1). As the researcher, I also obtained clearance from the Chief Executive Officer of Mowbray Maternity Hospital after a research board meeting, where the proposal for the research was presented. According to Polit and Hungler (1999), the researcher needs to make sure that the rights of the individual and the institution are safeguarded throughout the research process; in this case the HCW and Mowbray Maternity Hospital respectively.

All participants were informed that participation was completely voluntary and that their participation in the study was of their own will. One-on-one interviews were conducted and all participants gave consent for the interview and for the audio recording of the interviews. All participants were informed that interviews would be done at a time that is convenient for both the researcher and the HCW. Adequate times were set aside to ensure that the interviews were completed without any interruptions. The researcher also ensured that the venue provided a great deal of privacy and that it was easily accessible to the HCW.

Once the study commenced the researcher informed the participants (HCWs) about the purpose and aim of the study. The detail of the research was explained to the participants and informed consent obtained. The participants were assured of anonymity, autonomy and confidentiality throughout the study. No names were attached to the transcripts and the audiotapes were placed onto the researcher's computer for safekeeping. The participants in the study were informed that they could withdraw at any time from the research and that the information would not be used in any way to harm any participant but will be used to inform programmes that promote health in the work place.

Health care workers were informed that there are no potential benefits for them but that the study is done to further and improve future studies on this topic. All HCWs were assured that there are no known risks involved in doing the study, for example, stigmatisation or discrimination.

1.9 STRUCTURAL OVERVIEW

Chapter 1 provided an introduction to the study and outlined the background and rationale of the study. Included in the chapter were the problem statement, aim and purpose of the study. A brief overview of the research methodology was presented and ethical consideration discussed.

Chapter 2 discusses a limited literature review concerning the phenomenon of the HCWs' perceptions about the NSI protocol and highlights what their perception is in relation to current literature. The Health Belief model was used as an conceptual framework for the study. Focusing on health care workers' susceptibility to illness and the potential of their contracting a serious illness it also focused on the benefits of taking preventative action and the barriers health care workers face in the context of their working environment.

Chapter 3 deals with the methodology used for the study. A qualitative approach was applied during the study. An explorative, descriptive contextual design was used to best understand and bring meaning to the perceptions of HCWs' sustaining a NSI.

In Chapter 4 the focus is on the data analysis. A qualitative data analysis method was used to analyse the data collected during the one-on-one interviews with the HCWs.

Chapter 5 deals with the interpretation of the findings and a reflection on the conceptual framework that was used. A discussion of the findings and the Health Belief Model will be compared with current literature. Recommendations based on the findings will also be dealt with in this chapter.

1.10 CONCLUSION

HCWs are daily at risk of contracting blood-borne pathogens that could be dangerous to their health and wellbeing. Despite knowing these dangers, it appears as if HCWs who sustain a NSI occasionally do not follow protocols. In the following chapters, the research will explore some of the underlying reasons for this behaviour and non-compliance with regard to the NSI protocol. Different literature will be reviewed and a conceptual framework will be applied to best explore the phenomenon.



CHAPTER 2:

LITERATURE REVIEW

2.1 INTRODUCTION

The literature review will focus on studies related to the perceptions that health care workers have towards needle stick injuries. Many studies focus on how HCWs report and experience a NSI, but none of these studies reflect on how HCWs perceive the NSI protocol at the institution where they work. The purpose of this study is to uncover HCWs' awareness of the protocol and the steps to follow when sustaining a NSI. The Health Belief Model (HBM) was used as the conceptual framework for the study. The literature will be discussed under the headings of the HBM; i.e. the HCW's susceptibility to illness, the potential of contracting a serious illness, the benefits of taking preventative action and barriers to taking action.

2.2 HCWs' SUSCEPTIBILITY TO ILLNESS

South Africa is one of the countries where the prevalence of HIV and AIDS is very high. Knowing that you are working with patients who could have HIV or AIDS can become a very daunting task for health care workers when doing their jobs. It is also a fact that the prevalence of HIV and AIDS among public hospital employees at a hospital in Gauteng was found to be 15.9%, and that this is nearly as high as the prevalence in the adult population in South Africa as a whole (Connelly, Veriava, Roberts, Tsotetsi, Jordan, DeSilva, Rosen & DeSilva, 2007). In a quantitative study

done by Connelly et al. (2007), the working HIV and AIDS adult population was estimated to be 16.2% of the total workforce. In recognition of the silent, pervasive and traumatic stress that accompanies occupational exposure to blood-borne diseases, a qualitative study will be undertaken to explore the perceptions of HCWs to protocols related to NSI.

Health care workers are always at risk of contracting infection from their patients and this risk has become even greater as HIV, HBV and HCV infection rates have increased significantly over the two decades (Lachowicz & Matthews, 2009). Consequently HCWs have become more susceptible because they are dealing with these infected patients. According to Metules (2002), the risk of contracting HBV infection after a single NSI exposure ranges from 23% to 62%, while the risk of contracting HCV averages around 1,8% but has been reported to be as high as 7%. The risk of infection from exposure to HIV-positive blood is 0.3% or 3 in 1 000 exposures (Metules, 2002). Health care workers' reporting behaviour may be dependent on the perceived degree of the risk following an NSI (Trim et al., 2003).

2.3 THE POTENTIAL OF CONTRACTING A SERIOUS ILLNESS

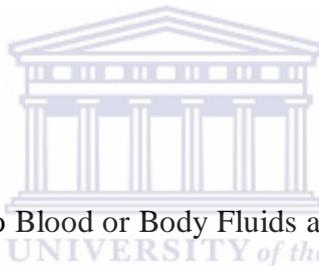
Seventy per cent of the world's HIV population lives in Sub-Saharan Africa, but a study done by the World Health Organization (WHO) on injection safety found that only 4% of worldwide occupational cases of HIV infection were reported in Sub-Saharan Africa (Wilburn & Eijkemans, 2004). The WHO estimated that in developing countries, 40%-60% of HBV and HCV infections in HWCs can be attributed to

percutaneous occupational exposure (Hanafi et al., 2009). They found that in South Africa, 91% of junior doctors reported sustaining an NSI over a 12-month period and from the reported cases, 55% of the NSIs were sustained from patients who were HIV-positive. If the patients being treated by HCWs are HIV-positive, sustaining NSIs would put them at a greater risk of contracting HIV. In a study done in KwaZulu, Natal, Zelnick and O'Donnell (2005) found that nurses were reluctant to report occupational exposure to HIV or take a short course of PEP.

Not reporting the NSI and the misconception that applying universal precautions such as wearing gloves when working with blood would interfere with the HCW's ability to provide efficient patient care often leads to non-compliance. For example, "at the time I have only one glove when starting a difficult IV in order to gain optimal success" (Ferguson, Waitzkin, Beekmann & Doebbeling, 2004:727). Another important factor to consider is the issue of the window period. This is the period early in the infection where the antibodies to the virus are not identifiable. During the window period the HCW's initial HIV test result may be negative. According to Meyohas, Moran-Joubert, Van De Weil, Mariotti and Lefrere (1995), the window period is the two to three month period following the occurrence of the NSI. However, a sub-population has been identified where the window period has gone beyond six months. The window period is viewed as the time frame when the person is highly infectious and the reason for this is that a rapid multiplication of both the virus and CD4 cells occurs.

2.4 THE BENEFITS OF TAKING PREVENTATIVE ACTION

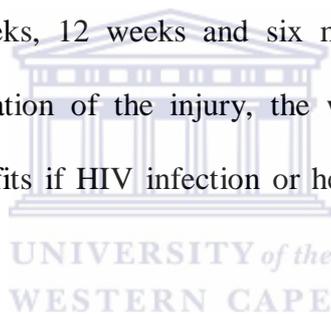
The Occupational Health and Safety Act (1993) states that if HCWs are involved in any incident which may affect their health, they need to report the incident to their employer. Reporting of the incident needs to be done as soon as possible, but not later than the end of the particular shift. If it is not possible to report the incident immediately, the HCW needs to report it as soon as possible and provide reasons for the delay. Blood tests need to be done within 72 hours of the incident and the HCWs need to have commenced the Post Exposure Prophylaxis (PEP) by then. These actions can be very beneficial to the HCW as they are based on protocols embedded in government regulations.



The Occupational Exposure to Blood or Body Fluids and PEP protocol at the Level 2 hospital is based on the Occupational Health and Safety Act (1993). The protocol focuses on the action to be taken following a NSI, i.e.:

1. Encouraging bleeding of the area and washing the area thoroughly with soap and water and informing the manager on duty immediately.
2. Pre-testing is done and bloods, e.g. full blood count and HIV test, are done.
3. Post-testing is done and PEP is given (PEP is not indicated if HCW is HIV infected at baseline test).
4. Follow up testing dates are given to HCW (Mowbray Maternity Hospital, 2009).

One area of great importance for the HCW, which is not mentioned in the Level 2-hospital's protocol, is the time frame for reporting the incident and the consequences if this is not done. The Compensation for Occupational Injuries and Disease Act (Act 130 of 1993) (COIDA) states that HCWs will be compensated for any disability caused by occupational injury or disease sustained or contracted by the HCW in the course of employment. Compensation will also be given in the event of death resulting from occupational injury or disease. However, according to the COIDA, HWCs need to adhere to the reporting and claims procedure stipulated in the act to be able to apply for compensation. Some of the terms in the COIDA are that HCWs need to have blood tests done within 72 hours of the incident and that further blood tests need to be done at six weeks, 12 weeks and six months after the work-related incident. Without documentation of the injury, the worker is unlikely to receive worker's compensation benefits if HIV infection or hepatitis is diagnosed at a later stage (Wilburn, 2004).

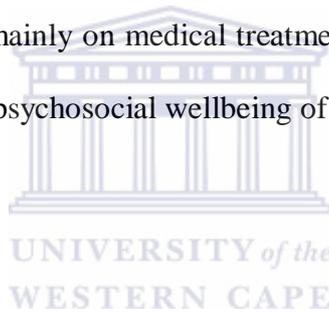


2.5 THE BARRIERS TO TAKING ACTION

In a quantitative study done in Malawi, it was found that very few HCWs attended follow-up visits. Only 25.2% of the HCWs who started the PEP attended the first follow-up visit. The efficacy of the PEP regimen is not solely dependent on the medication but also on compliance to reporting and follow-up visits (Van Der Maaten, Nyirenda, Beadworth, Chitani, Allain & Van Oosterhout, 2010). It is known that compliance with PEP is poor among HCWs, namely as low as 53%. This is evidenced in the decrease in follow-up testing. Follow-up testing significantly decreased to 12.6% on the second testing visit, to 6.3% on the third visit and by the

fourth visit, only 1.9% attended (Van Der Maaten et al., 2010). The contextual reasons for HCWs' non-compliance to protocol will be explored in this study.

Nwokolo and Hawkins (2001) found that when PEP treatment was given to HCWs the side effects frequently prevented them from completing the regimen. They found that because of this reason, adequate psychological support should be available to the HCW at the time of exposure and afterwards. The HCWs should be warned of any side effects they may encounter and pre-emptive anti-emetic and antidiarrhoeal drugs should be prescribed to those who present with a problem. The management of HIV infection and AIDS focuses mainly on medical treatment and little attention has been given to the mental health or psychosocial wellbeing of the HCWs (Ziady, 2008).



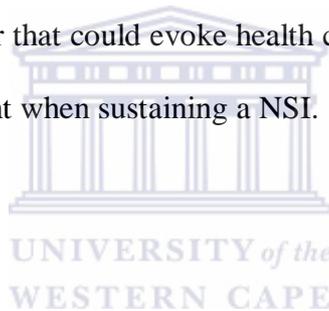
The privacy of the HCW should always be respected and laboratory test results should remain confidential. According to the COIDA, there is an assumption that HCWs fear the stigma and discrimination from their colleagues. They also fear that their employer will not respect their right to confidentiality and that these could be some of the reasons for not reporting incidents and for not returning for follow-up testing.

2.6 THE HEALTH BELIEF MODEL

The Health Belief Model (HBM) was developed by Irwin M. Rosenstock in 1966 for studying and promoting the uptake of health services, and this model was considered as a conceptual framework for the study. According to Glanz, Lewis and Rimer

(2002), the HBM aims to accommodate the evolving evidence that was generated within the health community about the role that knowledge and perceptions play in personal responsibility.

It is a useful model to explore health care promotion and prevention. According to Efstathiou, Papastavrou, Raftopoulos and Merkouris (2011): ‘the HBM offers the ability to understand the different behaviour and attitudes that people may develop under the same condition by following or not following certain guidelines or requirements’. According to Croyle (2005) the HBM is also a good model for addressing problem behaviour that could evoke health concerns, e.g. the possibility of contracting HIV from a patient when sustaining a NSI.



The HBM suggest that the person’s behaviour towards his or her health depends on the perception of four critical areas, namely:

2.6.1 The HCW’s susceptibility to the illness. This study focused on the HCW’s susceptibility to having a NSI and whether health care workers change their health behaviours when they believe that they are at risk of contracting blood borne pathogens.

2.6.2 The potential for contracting a serious illness. How the HCW may contract serious disease when sustaining a NSI and the chances of contracting blood-borne pathogens.

2.6.3 The benefits of taking a preventative action; i.e. focusing on the different regulations and protocols that regulate HCW's behaviour when they sustain an injury. The benefits of HCWs' adhering to the protocols can have beneficial outcomes if they should sustain a needle stick injury.

2.6.4 The barriers of taking that action; i.e. the factors that could be preventing HCWs from using PEP and reporting for follow-up testing. Some of the major reasons HCWs do not change their health behaviour is that they think that doing so may be difficult. According to Bronsky (2010), changing your health behaviour can impact greatly on HCWs' effort in changing behaviour concerning money and time.



2.7 CONCLUSION

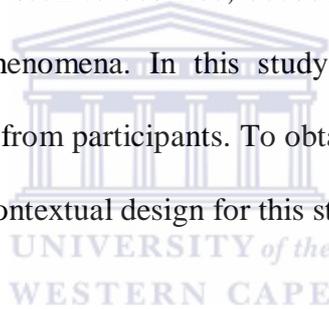
From the literature review it becomes clear that the response to NSI is still problematic amongst HCWs. Adhering to the NSI protocol is really important, but as shown in this literature review, it remains a challenge to HCWs. However, the literature does not make clear what perceptions HCWs have concerning the NSI protocol. The next chapter will deal with the methodology of this study, namely a qualitative study.

CHAPTER 3:

RESEARCH METHODOLOGY

INTRODUCTION

The methodology of the study, including the sampling, data collection and data analysis will be presented in this chapter. A qualitative approach was used to explore the perceptions of HCWs about the NSI protocol. According to Van Maanen (1979) as cited by Welman, Kruger and Mitchell (2005), qualitative research is an array of interpretive techniques which seek to describe, decode, translate and come to terms with the meaning of the phenomena. In this study the researcher made use of interviews to obtain rich data from participants. To obtain this rich data I made use of an explorative, descriptive, contextual design for this study.



THE PURPOSE OF THE RESEARCH

The purpose of the study was to explore the health care workers' perceptions about the NSI protocol at a Level 2 hospital in Cape Town.

RESEARCH DESIGN

The research design describes the framework between the researcher question and the implementation and completion of the research (Blanche, Durrheim & Painter, 2006).

The research paradigm that was used for this study was a qualitative approach. A

qualitative approach is used to study things in their natural setting and attempts to make sense of phenomena and the meanings that people bring to them (Denzin & Lincoln, 2000). Brink (2006) suggests that researchers use qualitative approaches to explore and understand the meaning of human experiences. As the researcher, I used a qualitative approach to make sense of the HCWs' perceptions about the NSI protocols and their opinions about compliance to the protocols.

An explorative design has two major goals, which are to describe the phenomenon and then to give the meaning that participants attach to the phenomenon (Brink & Wood, 1998). In this study the researcher wanted to understand the participants' views concerning NSI protocols. In using an exploratory design I wanted to determine the general nature of the problem or phenomenon. This helps to answer the questions; who, what, where and why (Reid & Bojanic, 2010). The weakness with this design is that a small group participates in the research study and do not represent the total population. However, qualitative research is not aimed at generalizing but rather to get an in-depth understanding of the phenomena.

According to Munhall (2011), an exploratory, descriptive, contextual design is flexible as it gives the researcher the opportunity to investigate the phenomenon in totality. It also strives to build new knowledge and new submissions for future research studies. This is the reason why the researcher made use of this method; to gain rich data concerning health care workers' perceptions about the needle stick injury protocols at a Level 2 hospital in Cape Town.

Contextual research design aims to explore a phenomenon, in this study the HCW's perception of the NSI protocol in the natural work environment. According to Holloway and Wheeler (2000), the phenomenon of interest is explored in the immediate environment and physical location of the people studied. In this study all the interviews were conducted at the institution where the participants work. Babbie and Mouton (2003), contend that if an event is understood against the background of its context it can be better understood.

STUDY POPULATION AND SETTING

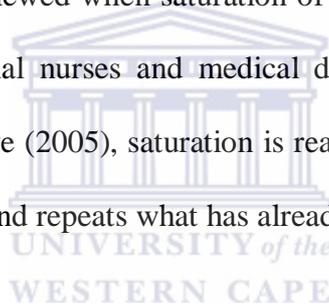
According to Brink (2006), a study population is the total group of people that is of interest to the researcher. The people should meet the selection criteria and specifications that the researcher is looking for. The population in this study comprised HCWs at Mowbray Maternity Hospital (MMH), which is the only obstetric hospital in the Western Cape. The total staff complement is 367 staff members, 251 of whom comprised the study population. The other 116 personnel include clerical and cleaning staff.

Of the 251 HCWs in the study population, 31 are obstetric doctors and 220 are nursing staff. The nursing staff comprises 114 professional nurses, 98 nursing assistants and 8 enrolled nurses (staff nurses). A number of medical and nursing students are placed at the institution on a rotation basis.

SAMPLING

Sampling is done when extracting a small group of people from a greater population. In this study I made use of a small group of participants of nine HCWs. Even though the sample group appears small, I could obtain rich data from these participants. All of these participants met the inclusive criteria of the study. As the researcher, I did not only focus on HCWs who sustained a NSI but all the HCWs that worked in the clinical setting and are exposed to the hazards of a possible NSI.

Nine participants were interviewed when saturation of data was reached. The sample comprised nurses, professional nurses and medical doctors and a nursing student. According to Burns and Grove (2005), saturation is reached when additional data can provide no new information and repeats what has already been collected.



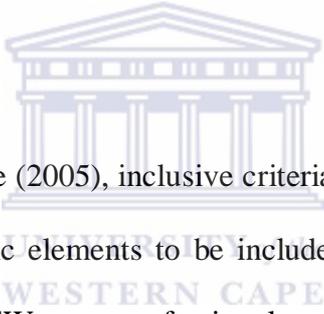
3.5.1 Sampling Design

The researcher made use of convenience and purposive sampling as the subjects were accessible to the researcher at the time of data collection (Houser & Bokovoy, 2006). According to Burns and Grove (2005), convenience sampling is not only inexpensive but the participant is easily accessible to the researcher and it is useful in exploratory studies. All the participants in the study worked at MMH and were available during the data collection period. I could approach participants (HCWs) working in different clinical areas of the hospital and ask them if they would be willing to take part in this specific study. According to Houser and Bokovoy (2006), it is important to have

inclusion and exclusion criteria as this will decrease the selection bias of the study when using convenience sampling.

Purposive sampling is selecting a specific population and only those members are then used in the study (Terry, 2011). According to Burns and Grove (2005), purposive sampling involve a conscious selection of participants by the researcher for the study. The researcher selected participants from all social and professional groupings for the study. The researcher also made sure that both genders were represented even though the majority of the staff is female.

3.5.2 Inclusive Criteria



According to Burns and Grove (2005), inclusive criteria are having the characteristics that best represent the specific elements to be included in the study. The inclusive criteria for this study were HCWs, e.g. professional nurses, doctors, medical students, nursing students and enrolled nurses. All these HCWs are daily in contact with different clients and exposed to the possibility of sustaining a NSI.

3.5.3 Exclusive Criteria

The exclusive criteria were all characteristics that form an exception to the inclusive criteria. According to Burns and Grove (2005) the researcher needed to provide a logical reason for exclusive criteria. The cleaning staff, porters and clerical staff or any other personnel who may have sustained a NSI but who were not directly involved with patient care were excluded from the study.

DATA COLLECTION

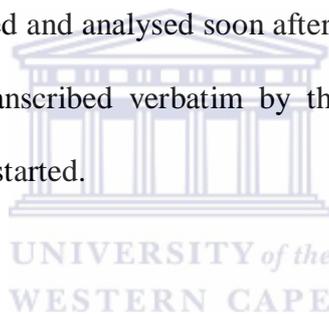
The researcher made use of semi-structured interviews. This data collection method allowed the researcher to gather in-depth information about the HCWs' perceptions related to compliance with NSI protocol (Holloway & Jefferson, 2000). The data-gathering instrument that was used was an interview guide (see Appendix 2).

Making use of interviews in explorative descriptive designs is seen as the most direct method of obtaining facts from the participant (Brink, 2006). As the researcher I wanted to obtain rich data during my interviewing process. Brink (2006) suggests that the researcher must ask certain questions but that additional probing questions can also be asked. Using semi-structured interviews allowed me as the interviewer to clear up vague responses and to ask participants to elaborate on incomplete answers (Welman et al., 2005). The one-on-one interview allowed me to observe the participant's facial expressions and body language in relation to their verbal responses to the interview questions. Observational data were captured as field notes and added to the data collected about specific participants.

All interviews were done at a time that was convenient for both the researcher and the participant. Informed consent was obtained from the participants for the use of an audiotaping device during the interviews (see Appendix 3). Adequate times were set aside to ensure that the interviews were completed without any interruptions. I also ensured that the venue provided a great deal of privacy and that it was easily accessible to the participants (Brink, 2006). Knowing that all participants were working at MMH made it easy to book dates and times for interviewing purposes. The

first interview was used as an exploratory interview and helped develop the researcher's interviewing skills. In doing a pilot interview, I could assess what questions I needed to change so that the participants could have a clear understanding of questions.

The participants also gave permission for digital audiotaping of the interviews. Once data were obtained, the transcripts were copied and stored onto my personal computer. Audio files were also created of the recordings and were stored on compact disc as an extra copy of the interviews, which were all kept and locked away by me. Each interview was transcribed and analysed soon after the interview had taken place. All nine interviews were transcribed verbatim by the researcher, after which the coding of the transcripts was started.



DATA ANALYSIS

According to Bryne (2001), qualitative data analysis consists of identifying, coding, and categorising patterns found in the data, and then looking at how relevant the findings are. Qualitative data analysis focuses on how different data fit together and binds context and meanings (Ulin, Robinson & Tolley, 2005).

Ulin et al. (2005) suggest an in-depth approach to the analysis of qualitative data consisting of a sequence of steps, i.e. reading, coding, displaying, reducing and

interpreting the data. As the researcher, I made use of the following data analysis steps to best explore what the participants shared during their interviews:

Step 1: “Reading: Reading and re-reading of transcripts till, as the researcher you are intimately familiar with the context” (Ulin et al., 2005:144).

Ulin et al. (2005) state that the researcher does not have to wait until data collection is completed but needs to immerse in the data while it is being collected. After doing the interviews, I read and re-read the transcripts. I found that by reading and re-reading the transcripts I became more familiar with the content of the transcripts and context as shared by the participants.



Step 2: “Coding: Reading and checking for emerging themes and you code the texts.”

I started to look for similar data, checked for emerging themes and then started coding the data line –by line. During the process of coding, similar codes appeared across the cases and by the fifth interview, I found and identified similarity in the responses regarding certain questions asked. All similar codes were colour coded in the same colour on a pin board to keep track of any similarities that arose. Following probing questions new information did emerge.

Step 3: “Displaying and reducing: Once coded, display in detail all relevant data for each category and then reduce the data to only the most fundamental points.”

Once all transcripts were coded I re-read them and checked the codes attached to them, and colour coded each point. The codes that emerged were then re-colour coded as different categories. This way I could identify which colour code belonged to which category that was formed. By doing it this way I could reduce the data and only focus on the fundamental points under each specific colour code. The categories were then formed and five themes emerged out of the data analysis process.

Step 4: “Interpreting: Searching for core meanings of thoughts, feelings and behaviour that best describe the text.”

Once the categories were formed I searched for what best would describe each of the categories. As the researcher, I looked at what emotion, knowledge and understanding each participant had. Once a case transcript was coded I proceeded to do cross-case coding. The reason for this is to explain how all this data and core meaning of the data can be linked to the original study questions and to find the core meaning. According to Ulin et al. (2005) the researcher needs to continuously search for labels to best describe the emotions, behaviour and experiences expressed by the participants. I placed the colour coding of the data on a board to constantly check the themes and categories that I formed during my data analysis process.

RIGOUR OF THE STUDY

3.8.1 Trustworthiness

Law (2002) suggest that to have trustworthiness of research increases the reader’s confidence in the findings and worthy of their attention. Trustworthiness refers to the

extent to which the findings are a true reflection of the personal or lived experience of the phenomenon under investigation (Barbour, 1998). During the study, anecdotes of the participants were used verbatim as a true reflection of their perceptions concerning the NSI protocol, e.g. *Part. 2: "...at least twice a year... there you feeling like crap and then you have to carry on doing your work and doing a 24 hour call... so you kind of think, ok you know I will just see how it goes... we kind of try and talk it down and say the risk is low..."*.

Using anecdotes gives a voice to the participants of this study.

3.8.2 Credibility

According to Brink (2006), credibility can be assured by presenting a true reflection of the participants in the study. The credibility of the 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). Accurate transcribing of the data was performed and line-by-line analysis was done in order to find similarities between words and sentences. Categories were formulated after similarities were found and five themes emerged from these categories.

3.8.3 Transferability

Transferability refers to whether the findings of the research study are transferable to other contexts (Brink, 2006). Transferability was ensured by providing a thick

description of the context of the study, characteristics of the participants and sample setting.

3.8.4 Confirmability

Brink (2006) states that the researcher needs to give the assurance that the findings, conclusion and the recommendations are supported by the data collected. Verbatim quotes from the participants are included in the report and the data analysis process is presented in a fair amount of detail.

3.8.5 Bracketing

Burns and Grove (2005) suggest that for the researcher to avoid any kind of misinterpretation of the phenomenon as the individual experiences it, use can be made of bracketing. As a researcher you need to set aside what is known about the study beforehand. This involves examining and putting aside one's own beliefs so that the phenomenon is not contaminated with the researcher's bias. As the researcher I disclosed that I have sustained a NSI before undertaking this study and also described the steps that I took after I sustained the needle stick injury. During the interviewing process I became aware of my own personal feelings but chose not demonstrate my shock or disbelief to the participants during this research process. Thus I made sure I obtained a true reflection and perception from the participants concerning the phenomenon.

CONCLUSION

This chapter dealt with the research method and the data collection method that was used. In the next chapter the findings will be presented in detail. To capture the participants' perceptions and experiences of the phenomenon in this study, I made use of an explorative, descriptive, contextual design to best describe the phenomenon and to give meaning to it as it unfolds (Brink & Wood, 1998).

The research study and interviews commenced once permission was obtained from all the relevant authorities at the institution where the study was done. All participants that took part in the study gave permission and signed a consent form before the interview took place. The data analysis procedure was discussed in detail in this chapter and all the data was analysed manually. Making use of explorative semi-structured interviews as a means of data collection allowed the researcher to get more 'detailed knowledge' about the health care workers' perceptions of the NSI protocol.

CHAPTER 4:

FINDINGS OF THE STUDY

INTRODUCTION

In this chapter the perceptions of health care workers (HCWs) will be presented. The sample for the study consisted of nine participants employed at the Mowbray Maternity Hospital (MMH) at the time of data collection. The participants all worked in different sections of the obstetric hospital and dealt with different patients from the antenatal, postnatal, neonatal and labour wards and also theatre. The ages of the participants ranged from 21 to 42 years old. A few men work in the clinical setting at MMH, thus more women than men were interviewed in this study. A total of eight women and one man were interviewed. The HCWs that were included were nursing students, enrolled nursing assistants, enrolled nurses, professional nurses and medical doctors.

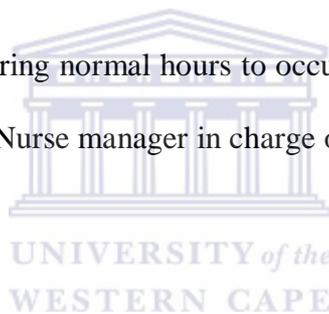
Of the nine participants, four had been working in the nursing or medical field for a period of five years. Three nursing staff members who had been at MMH for longer than five years were asked to participate but declined, as they felt that they were “too old” to participate in the research. The interview with the student was done when she was placed at MMH during her routine practical placement. The researcher made use of the NSI protocol at MMH for the study. The protocol is divided into different actions; for example, Action 1 refers to the responsibility of the HCW if accidentally

exposed, while Action 2 refers to the occupational health practitioner/hospital nurse manager responsibility.

Action 1: When a HCW is accidentally exposed to an NSI the following actions should be taken, i.e. immediate action and subsequent action and which is the responsibility of the HCW.

Immediate action: Encourage bleeding of injury site by squeezing whilst rinsing under running water; Wash area thoroughly with soap and water; In theatre, remove glove and do above steps then rub with alcohol.

Subsequent action: Report during normal hours to occupational health clinic; Outside of normal hours report to the Nurse manager in charge of the hospital.



Action 2: Occupational health practitioner/Hospital nurse manager responsibility, Management of HCW and open a folder of sustaining a NSI; Provide pre-test counselling for exposed HCW and ensuring the drawing bloods from HCW; Provide post-test counselling and handle results in the strictest confidence; Assess the risk of prophylaxis and explain the side effects; Provide the starter pack; Complete the incident report; Provide follow-up dates (MMH Policy, 2009).

The protocol does not indicate the time limit for reporting a NSI. However it is noted that PEP treatment is discouraged if more than 72hours has passed. One may conclude that reporting should happen before 72hours have elapsed.

4.2 DEMOGRAPHIC DATA

The table below reflects the demographic data of the participants relating to age, gender, rank and years of practice.

	<i>Age</i>	<i>Gender</i>	<i>Rank</i>	<i>Years of Practice</i>
<i>Participant 1</i>	27	Female	Enrolled Nursing Ass.	2 years
<i>Participant 2</i>	29	Female	Senior medical officer	4 years
<i>Participant 3</i>	21	Female	Nursing student	3 rd year student
<i>Participant 4</i>	25	Female	Professional nurse	2 years
<i>Participant 5</i>	42	Female	Professional nurse	5 years
<i>Participant 6</i>	29	Female	Professional nurse	3 years
<i>Participant 7</i>	42	female	Advanced midwife	5 years
<i>Participant 8</i>	40	Female	Enrolled nurse	8 years
<i>Participant 9</i>	27	Male	Community medical officer	1 year

Table 1. Demographic Data

4.3 DATA ANALYSIS: THEMES AND CATEGORIES

In this study the researcher's aim and objective was to explore and describe the HCWs' perceptions regarding compliance to NSI protocols at a Level 2 hospital. All the transcripts were read and then coded line by line. Codes were identified and

grouped into different categories. The categories were reduced to five themes, which emerged from the process of data analysis.

The themes and categories are presented in the following table;

<i>THEMES</i>	<i>CATEGORIES</i>
1. Describing the incident	Perception of NSI Response to injury
2. Taking action	Initial care Reporting Collecting samples Starting treatment Follow-up care
3. Knowledge of NSI protocol	Access to information Lack of knowledge
4. Compliance to the NSI protocol	Compliance Non-compliance
5. Supporting structure	Counselling Management structures

Table 2. Themes and Categories

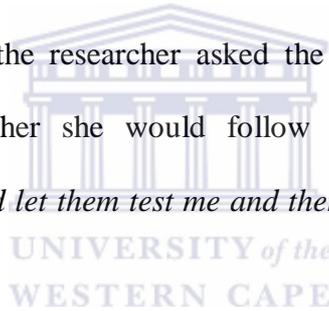
4.3.1 DESCRIBING THE INCIDENT

When asked to describe the NSI protocol all the participants proceeded to describe the NSI incident in detail. This even happened in the interviews with participants who had never sustained a NSI.

4.3.1.1 Perception of NSI

Not all the participants that took part in the study sustained a NSI. During the interviews the researcher found that four of the participants has never sustained a NSI.

Part. 8: "...I never, I never pricked myself... I only hear say of the people, that have had...." When the researcher asked the participant that if she would sustain a NSI, whether she would follow the protocol, the participant responded; *"...I would let them test me and then I would have to do whatever they tell me..."*.



One of the participants who has never sustained a NSI would leave the responsibility to fellow colleagues, as it appears that she was uncertain about the protocol. The four who have not had an injury offered their viewpoints on what they have seen or heard from colleagues and friends.

The other five participants had sustained more than one NS injury. They spoke freely of the number of NSIs they had sustained and having had a NSI was seen as something that they did not perceive as risky.

Part. 2: "...I know for myself that it's not the only NSI... that I have had a few, like at least twice a year... like I had a few where I just go ag well... the mother is negative you know... move on...".

Part. 7: "...Yes I have sustained, ja [yes]... I mean I haven't just I have had more than one NSI... twice I think... ummm nothing have ever happen... More than twenty in all my many, many years of nursing... I've been pricked and I'm, I'm going back a long time and it was never a big deal we just go on..."

The researcher found that the five participants who had sustained a NSI did not perceive the risk of contracting HIV or some other blood-borne pathogen as life-threatening enough to go for testing. The participants based their decision not to follow the protocol on the information in the patient's clinical notes. They checked the initial (booking) HIV result of the patient before they decided whether to go for testing or not. Part. 2 and 7 chose to disregard the NSI as a method of coping with the injury.



4.3.1.2 Response to injury

Many of the participants gave a detailed account of their responses to the injury. Most of the participants that sustained the NSI primarily focused on the emotions that accompany a NSI. However, a few of the participants have had more than one NSI and they have found ways of making the incident appear less risky. It appeared as if the participants' views were dependent on the emotional state they were in at the time of the incident.

Part. 2: "...at least twice a year... there you feeling like crap and then you have to carry on doing your work and doing a 24 hour call... so you kind of think, ok you know I will just see how it goes... we kind of try and talk it down and say the risk is low..."

Part. 5: "...It's such a hassle to go and have bloods taken and the procedure..."

Part. 6: "...Like it depends how seriously we take the injury... don't worry, because the patient is negative... they focus on the patient being positive or negative..."

Participants displayed feelings of hopelessness and viewed reporting as an inconvenience. Despite feeling terrible they continued working their shifts.

4.3.2 TAKING ACTION

The participants had mostly the same response to the question: "Can you explain to me the needle stick injury protocol step-by-step". They all explained the initial steps of putting your hand under running water and squeezing the blood out and reporting the incident. The researcher found that they were focusing on the procedure and not the protocol.

4.3.2.1 Initial care

The participants all had similar ideas of what action to take when they had a NSI. The areas that they focused on were mostly the steps as mentioned before but most of them were able to explain the steps in full. However, some of them forgot the important steps in the NSI protocol when sustaining a NSI. Some participants said they do not trust or even know which HCW they must report to in the event of a NSI. The researcher found that even though some of the participants have never experienced a NSI they were able to describe the initial step of the protocol.

Part. 3: "...You first run to the tap and you then put your finger under the tap, under the water, then you squeeze as much blood out... then you go to the sister responsible, then you report and then you record..."

Part. 4: "...you prick yourself you go to the running water, you press there and let the blood flow... you let your colleagues know what happen and then they call the matron..."

Part. 6: "...you had a injury, NSI, you quickly go to the tap and squeeze your blood and squeeze the wound under a running tap then you inform your supervisor... then you go to the health clinic..."

Even though all participants were unsure of the details of the protocol, they had the basic understanding of what to do, should they sustain a NSI. HCWs' perceptions concerning the NSI protocol were not all the same. Most of the participants said they knew the NSI protocol but when asked to "*explain the protocol of the institution they working at*"; they only knew the initial step you need to follow.

4.3.2.2 Reporting

Reporting is still seen as a problem because it appears that HCWs view a NSI incident as unimportant. This raises the question of how many incidents are actually reported to the occupational health sister. The participants all mentioned the need to report and that this was part of the steps but some of them did not know who and where to report. The researcher found that what most of the participants did was to first check the status of the mother (patient) before deciding whether they should report.

Part. 2: "...then you look in the folder and you go ok is the mother negative or not... ok are you going to report it or not..."

Part. 6: "...you then inform your supervisors and after that you identify which patient did it happen on and then you go to the health clinic..."

The participants explained how important it is to report and some of them knew who to report to during the day and night and over the weekend.

4.3.2.3 Collecting Samples

All the participants knew that blood samples needed to be taken once you sustained a NSI. The participants who have never sustained a NSI were unsure what specific bloods are collected. These participants knew that the person who sustains a NSI would require an HIV test and that blood gets taken. Some of participants who had sustained a NSI were aware what specific bloods needed to be drawn, but most of them focused on the HIV test. Only a few were aware of the other blood-borne pathogens that could be transmitted.

Part. 4: "...they first counsel you and they take your blood, they test you for HIV... they take blood for hepatitis and maybe other infections but mostly hepatitis..."

Part. 7: "...bloods would be taken from you and bloods would be taken from the patient..."

The participants were aware of the importance of the bloods that need to be taken and that it was perceived as important.

4.3.2.4 Starting Treatment

The participants who have been on treatment found that even though they knew that the PEP treatment was needed, they really did not like taking the medication. For some, taking the treatment was the worst part of the whole experience of sustaining a NSI. A few participants said that should they sustain a NSI again, they would take their chances by not going on the treatment again due to the side effects of the medication.

Part. 2: "...I know that me and Kaletra (ARV Medication) don't agree with each other... but if I had to take Kaletra for a month I would really consider taking my chances... risk getting the infection...with versus taking the drug and as you know logically that it does not make sense... but at that point and time you kind of think in your mind... the chances of becoming HIV positive from a NSI especially from a baby... sometimes it's a lot of hassle to do the whole thing..."

Part. 4: "...Those thick tablets... they told me you must... because sometimes you know when you must take those tablets you think... it was just a small prick let me just... because you get nausea and stuff... so you think of stopping and not doing it anymore..."

Participant 4 gave an example of a friend who sustained a NSI; due to her being so sick from the medication the first time she chose not to go on medication when she had another NSI.

Part. 4: "Somebody that had the same problem... went for follow-ups and finished but she was sick for a month...hospitalised... after testing for the sixth

month she had, she pricked herself again... I'm never gonna to do that again because I got sick... and she got infected of HIV... ”.

By not reporting and going for medication her friend contracted HIV. The participant chose to use this incident to keep herself focused should she sustain a NSI.

4.3.2.5 Follow-up care

Most of the participants were aware of the importance of follow-up HIV testing. However, the researcher found that it was not seen as a priority and many of the participants did not know when to go for follow-up testing or the correct time frame for follow-up testing. Only one participant mentioned the window period as being an important reason for going for her follow-up testing.

Part. 2: “I think she gave it... I remember she gave me a card with my little number on and everything but I don't think, can't remember cause I never went... there was a thing, that I must go back and get tested again in six weeks or something but ummm... don't remember... ”.

When the participant was asked if she went for the follow-ups she confirmed that she did not go for follow-up testing during that time as she found that the incident was low risk.

Two participants who were still in the window period did not even know the correct times to go for their follow-up dates.

Part. 4: “I think I got like four to five appointments where you come just for Hb... thirty days then you go after thirty days to test for HIV... you go for

three months time... in six months time because you still on window period... you must condomise.”

Part. 6: “You must go for the bloods every third month up until three times... even if the person is negative you still have to do it...”.

Even though the participants sustained a NSI they were still not certain of the correct dates for their follow-up testing. The participants who had never sustained a NSI were really not sure what the follow-up times were, even though some of them thought they knew the NSI protocol.

Part. 3: “After a certain time, I’m not sure what amount of time... then you must do, have another test on your own...”. Due to this participant never sustaining a NSI the researcher asked if she would go for follow-up tests. To this the participant agreed: *“I must make sure that I am safe every time, to ensure my safety.”*

Part. 5: “O, yes... not actual dates but they mentioned three months and another six months after that, but I did not read that in the protocol I must have read that somewhere else...”.

It appears as if the participants who sustained a NSI knew more concerning follow-up testing than those who have never sustained a NSI.

4.3.3 KNOWLEDGE OF NSI PROTOCOL

Most of the participants had a limited knowledge about the NSI protocol. The reason for this limited knowledge or even lack of knowledge may be due to e.g. not reading the protocol or knowing where to find the protocol.

4.3.3.1 Access to Information

There were participants who had never perused the NSI protocol before sustaining a NSI and even after sustaining the NSI. These participants admitted that their colleagues were directing them when they sustained a NSI. When asked where they got the information from the following comments were made:

Part. 1: "...Honestly I don't know...but at the hospital I have been before like for example...". When asked if she ever received any information about the NSI protocol at MMH the participant said "*No, nothing*". When asked if she got any information at the prior institution she worked at she informed the researcher that it was very brief and not too much detail.

Part. 3: "...basically my superiors, my consultants... we get hand-outs of all the protocols that we use clinically and also the occupational health protocol for NSI... that's in a little pack that we give all new MO's... there are posters...".

Part. 4: "...I thought I knew it... from back to varsity... the lectures and clinical supervisors... she's the one that told us about the needle prick injury....".

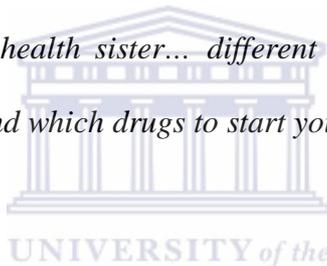
Some of the participants knew where to find the NSI protocol. A few of the participants knew that the wards have a protocol file but admitted that they have never looked at it. The researcher found that some HCWs have never heard of the NSI protocol from Mowbray Maternity Hospital but that they had received information concerning the NSI protocol from the higher education institution. Consequently they could explain the steps because they could remember what they had been told at the institution. One participant who is new in the nursing profession could remember

what she was told at university about the NSI protocol and she remembered and applied that information when she sustained a NSI.

4.3.3.2 Lack of knowledge

During the interviews I asked participants to explain the NSI protocol of the institution. However, I found that most of the participants were explaining some of the steps of the protocol and that there was a lack of knowledge about the NSI protocol.

Part. 2: "...I think I do... I know you report... to the shift leader... you go and see the occupational health sister... different person draws bloods... sister decides level of risk and which drugs to start you on... they will let you know if it's negative..."



Part. 7: "... I actually can't remember... what do I know about it briefly is... I'm not quite sure... I know that there is a protocol... after hours, you know there is a protocol for who you need to contact, which is obviously the person that's in charge of the hospital... get started on your treatment and the bloods that needs to be taken... you cannot take the bloods of the patient involve and ja you can't take your own bloods... that just about it... that's it that I can recall..."

None of the participants mentioned that they need to report within 72 hours when sustaining a NSI. Participant 1 did however say that you "...report the same day..." even though she had never sustained a NSI herself. Of the nine participants she was

the only one to mention the time lines. None of the participants knew the correct follow-up time regime.

Part. 1: "...Honestly I don't know... if you prick yourself you need to report it... the same day... not suppose to recap needles... they will ask you how it happen... they will cover you..."

However, the participants that have never sustained an injury had limited knowledge about the reporting and testing process.

Part. 2: "...I know that you report... you go and see the occupational health sister... someone else draw the draw... while you waiting for the results they usually start you on a starter pack for a month... I think you have to get a six weeks check up... I think you go back again later for another test... that's the part I defaulted..."

The participants who have sustained a NSI seem to know more than those who have not.

Part. 4: "...the only thing I can remember is what we were told back at varsity... I lied because I didn't read the protocol here... I haven't read it... I was told by my unit manager that there is protocols but I never went through any protocol...."

Part. 5: "...The summary I gave you is what I've sort of read through the needle stick protocol in the protocol folder in our nursery and the stuff I say is the stuff I just put in my head to remember... gosh that's a very long time ago... can't give you a time or date... I haven't done it recently let me put it that way...."

Part. 7: "...This institution... I did read it somewhere but that was some time back... that's a long time ago but I think it has, it was but shoo but that's a long time ago..."

Most of the participants could not remember when last they looked at the protocol and some participants admitted that they never have perused the NSI protocol of MMH. The researcher found that the participants did not really show an interest in the protocol and that is why many of them never made an effort to read it.

4.3.4 COMPLIANCE TO THE NSI PROTOCOL

The participants were all candid when talking about their NSI and what they did with regard to reporting, starting with medication and follow-up testing. When asked if HCWs complied with the NSI protocol, six of the nine participants agreed that HCWs do not comply with the NSI protocol. One participant was unable to answer the question, as she had never experienced a NSI or knew of a friend or colleagues who had sustained a NSI. Two participants who have sustained a NSI felt that HCWs are compliant with the NSI protocol because they themselves were still in their window period and were going for follow-up testing.

4.3.4.1 Compliance

I found that most of the participants understand the importance of compliance with the NSI protocol. However, even though the participants understood the importance of complying with the NSI protocol, the thought of experiencing the side effects of

medication and not knowing whom to report to were some of the reasons for non-compliance to the NSI protocol.

Part. 2: “I think they comply in the beginning when it happens... if they perceived it was a risk... I know for myself it’s not the only NSI that I have had a few... when I would look at the patient and say... mother is negative and that is low risk NSI. ...that I would ignore and it’s bad but you get to a point where you don’t [feel] to go through that whole thing... sometimes you don’t know them or trust them like to do it properly or you really don’t want to take the drugs... you know what they make you feel like.”.

Part. 4: “Ja [yes], I think we do because ok, I did and I’m still going and I know people that had the same problem like me before here in Mowbray... sometimes you know when you must take those tablets you think ok, its just a small prick let me just...”.

Part. 6: “They are compliant, more especially the nurses...”.

The participants who viewed contracting HIV or other blood-borne pathogens as a risk would comply with the NSI protocol. One of the participants found that by complying with the NSI protocol, she not only saved her life but it also saved her marriage. She tested negative to the HIV and the patient also had a negative result. However, the patient tested positive for syphilis. An interesting finding was that according to the participant the patient was negative for syphilis when her booking bloods were taken. When the new results came back patient had a positive rapid plasma reagin (RPR) test, meaning that the chances of the participant contracting syphilis was highly likely.

Part. 6: “she just called me like that... when I came here the rapid plasma reagin was positive... I had to continue the Bicillin... it was my first time... and the thing that we always looking at the booking bloods... syphilis are bad and when I got it, divorce my husband because I would not trust my husband...”.

When I asked the participant if she saw how good it was to follow the NSI protocol she fully agreed. I found that many participants check the booking blood when they sustain a NSI before they make a decision if they should report the incident or not. The latter anecdote is a clear illustration of the importance of compliance with the NSI protocol.



4.3.4.2 Non-Compliance

Most of the participants suggested that the HCWs are non-compliant with the reporting of a NSI, even though they know that it is wrong. One participant stated that taking the medication (Kaletra) again would be a reason why she would not comply with treatment or even reporting the incident. Another participant said that having to go for follow-up testing is not that important because nothing has ever happened to her.

Part. 2: “... ja [yes], sometimes it’s a lot of hassle to try and do the whole thing... even though you want to prevent yourself from getting HIV... we kind of talk it down and say the risk is so low... I had a few NSI where I just go ag... well the mother is negative you know move on...”.

When I asked the participant why she is not complying, whether it was because she did not want to take the medication, she acknowledged by saying yes. As the researcher, I found that most of the participants were not even interested in the other blood-borne pathogens that they could contract when sustaining a NSI.

Part. 3: "...in the other ward, in here, in this institution... this other sister pricked herself... it was minor... she like... no it's nothing major, I just pricked myself and the patient's result was not yet out... unknown..."

Part. 6: "...the doctor's side, what I saw in theatre they are not... one of the doctors pricked himself, were stitching the patient... he was told to go to the staff clinic and then he said the patient is negative so he did not worry... he just went out to change clothes... he did not go to the tap or whatever..."

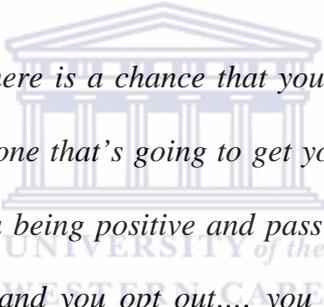
A student who witnessed the incident (Part. 3), found that the professional nurse did not take the NSI incident seriously and even though other HCWs were shocked by the incident she found it a minor thing. This really upset the student, as she could not believe that a professional nurse could behave in such an unprofessional manner.

Part. 7: "If you know that she is a known negative and the results come back and she is negative you not going to follow it up again... and it's, it's, maybe it's neglected on my side but it's just because it's haven't place it as a priority, ja [yes]... and I have been fine... I've been pricked and I'm, I'm going back a long time and it was never a big deal we just go on. But I think I've been lucky, nothing's happen to me ever in terms of that..."

Some participants would comply with the NSI protocol and should they sustain a NSI, they would go through the entire process because of experiences of colleagues and

friends. However, compliance with follow-up testing appears to be neglected by some of the participants.

In the Compensation for Occupational Injuries and Disease Act (Act 130 of 1993), it states that HCWs will be remunerated for any disability caused by occupational injury or disease in the cause of employment if the HCW reports the incident within 72 hours. The HCW however needs to adhere to the protocol of reporting, testing and going for follow-up testing. As the researcher, I found that the HCWs were not all aware of the importance of adhering to the protocol for compensation. Some of them were aware that not complying with the NSI protocol could have detrimental effects on their lives and health.



Part. 2: “Obviously there is a chance that you going to get HIV... decide to ignore it and it is the one that’s going to get you to have HIV... then there is also the chance of you being positive and pass it on to others... you use just the starter pack only and you opt out.... you will probably get resistant to treatment...”.

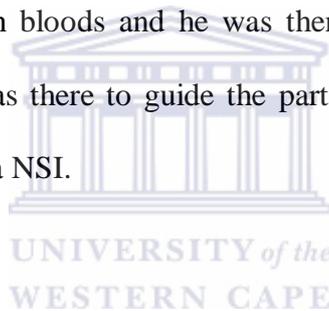
Part. 5: “If it happens and you don’t report... I am not actually sure... if you are expose or have been expose to a patient to HIV or hepatitis... could have detrimental effects on you later... suddenly get sick then you got no history of how you got it...”.

Part. 9: “If you contract the virus then obviously you need proof that you contracted it from work or from an occupational exposure and that would be pivotal in getting compensation...”.

Nevertheless, even with this response some HCWs still did not view the consequences for their health as important enough to comply with the protocol of reporting, treatment and going for follow-up testing.

4.3.5 SUPPORT

In doing this study I found that many of the participants would mention getting help from their colleagues when they sustained the NSI. However, not all the participants got support when they sustained a NSI. Having a good support structure in place for staff could have a positive effect on the reporting and testing process. One participant (part. 9) had to take his own bloods and he was then expected to write numerous incidence reports. No one was there to guide the participant through the process of what to do when you sustain a NSI.



4.3.5.1 Counselling

An important point, as stated in the NSI protocol, is counselling, and during the interviews most of the participants spoke of going for testing. They however did not mention that they received counselling and only stated that they had HIV bloods taken.

Part. 2: "...and then obviously before like counselling me about it... she told me she would phone me with the results..."

Part. 9: "In Natal there was not much of a counselling service... there was not much of a guidance... I kind of did everything myself..."

I found that the participants appeared lost because of a lack of counselling. Those participants who had received counselling could not remember the details about the follow-up testing. One participant felt that not knowing who to go to or who you can trust can also affect your decision.

Part. 2: "...sometimes you don't necessary know them or trust them... to like do it properly..."

Participants expressed the fact that not knowing or trusting the person who is providing the HIV counselling and testing influences their decision whether to adhere to the protocol.



4.3.5.2 Management structures

At each hospital there must be a management structure in place to help and assist HCWs should they sustain any kind of occupational health injury. However, HCWs are not always aware of these structures. A participant went through the whole reporting and counselling process but when it came to receiving her result, she just got a phone call telling her that her result was positive. The participant went to the hospital to check for herself, only to be informed that the patient is HIV negative but RPR positive. This meant the participant needed to get a regimen of Bicillin injections. The participant felt very alone during this process, and felt that if she had just ignored the phone call she could have contracted syphilis which could have affected her marriage.

Part. 6: "...she just called me... hi how are you... your result is positive... she then drop the phone..."

Part. 9: “They gave me my antiretroviral... the sister in charge just put a big pile of papers in front of me... no one sat down with me and spoke to me... everything was left up to me...”.

The participant felt so alone and unsure of what to do that he did not trust the managers that were there to help him. Some participants felt they had to do everything themselves and even though they knew it was important to go for follow-up testing, they would not all go through the process again.

4.4 CONCLUSION

There were a lot of incidental findings that showed a different side as to why HCWs do not know the NSI protocol. One of these was due to the fact that participants, even though most of them were very new to the profession, did not really know the NSI protocol that well. It is however clear that sustaining a NSI does affect some HCWs emotionally, which influences their decisionmaking. Some participants would take their chances of not reporting a NSI. The findings also showed that by reporting a NSI, they avoided the potentially disastrous effect it could have had on the participant’s life had they not done so. The finding also show that many health care workers have found ways of coping with sustaining a NSI and thus making the incident or injury not appear dangerous at all. The coping mechanism will be discussed in Chapter 5.

CHAPTER FIVE:

CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

In the previous chapter emerging themes were presented based on the analysis of the data. As the researcher, I made use of anecdotes from the transcribed data to reflect the perceptions of the participants, thus exploring HCWs' perceptions about the NSI protocol at a Level two hospital in Cape Town. The HCWs' perceptions regarding compliance to NSI protocols were also described. In this final chapter the findings of the study will be discussed to illustrate that the objective of the study was met. Salient points will be compared to literature and the Health Belief Model. The conclusion of the study will be discussed and recommendations will be made relating to the perceptions that HCWs have of the NSI protocol.

The initial literature review was compiled to familiarise myself with existing literature relating to HCWs' perceptions of the NSI protocol. Many quantitative studies were listed on compliance of HCWs and reasons why they do not comply. As many quantitative studies focused on the NSIs, it raised the question about the contextual reasons for many HCWs' not reporting or presenting for follow-up treatment. I wanted to know if HCWs were aware of the NSI protocol at the institution at which they work and if they understood the importance of complying with the NSI protocol. Once the interviews were transcribed and coded, I did a second round of reviewing the literature to assess if any new findings relating to the topic could be found.

5.2 DISCUSSION

At the commencement of the study on HCWs' perceptions of the NSI protocol and compliance with the protocol, I discovered that of the nine interviewees, five had sustained a NSI. While the other four had never sustained a NSI, they knew of someone who had. I established that all participants, both those who had sustained a NSI and those who had not, had the same level of knowledge concerning the NSI protocol. I also found that most of the participants who had sustained a NSI knew the initial steps they needed to take. There were, however, participants who admitted that they had never looked at the NSI protocol before the actual incident.

Allen (2002) has suggested that the length of employment of HCWs can play a role in the incidence of NSIs and that there could be an increase in incidence during the first years of employment. I found that even though most of the participants appear to be relatively new in the nursing profession, they generally did not know the NSI protocol that well. Most of the participants could only explain parts of the initial steps that needed to be taken when they sustained an NSI injury.

5.2.1 DESCRIBING THE INCIDENT

As the researcher, I discovered that whether HCWs sustained NSIs or not, it does not change the behaviour concerning reporting and going for follow-up testing. Due to the susceptibility to different illnesses, the personal behaviour of the HCW plays a vital role in their health and affects the decisions they make on different levels.

During the interview process, I found that most of the participants who had sustained a NSI before based their decision about taking action on how risky they perceived the NSI to have been. The one factor that was different for each of the participants was the way they perceived their susceptibility for contracting HIV or some other blood-borne pathogen.

According to the Health Belief Model (HBM) (2.6.1), HCWs change their health behaviours when they believe that they are at risk and susceptible to contracting blood-borne pathogens. One of the participants realised her susceptibility she when she tested positive for syphilis (VDRL positive). The other participants who had sustained a NSI did not view their injuries as risky enough to even report the NSI incident. Whether HCWs change their behaviour is very questionable, as most of the participants based their decision on how risky they thought the incident is to them personally and not on how susceptible they are to contracting blood-borne pathogens. This could be due to some of them sustaining more than one injury and they found ways of dealing with the incident. As the researcher I found that some participants used various coping mechanisms to deal with sustaining a NSI. According to the Kobasa theory of Hardiness, individuals will believe that they can control or influence events or experiences (Ziegler, 2005). Some participants believed that by ignoring the test they will not contract HIV.

As a health care worker there is the daily risk of sustaining a NSI and being exposed to a numerous amount of infectious conditions. A study done by Muralidhar et al. (2010) found that HCWs are prone to occupational conditions such as HIV/AIDS,

hepatitis B and C, malaria, tuberculosis, spotted fever and syphilis. Most of them know that there could be other infections that they could contract but it is still not seen as a priority. Needle stick injury incidences are considerably higher than currently estimated, and this is due to gross under-reporting; by almost fewer than 50% of the injuries that do occur (Muralidhar et al., 2010). As uncovered in the above study, this can be a reflection of HCWs' not reporting incidences, and from the transcripts I found that most of the participants viewed reporting as not important. In knowing the extent of under-reporting, can we really say that there is only a 0.3% chance of contracting HIV/AIDS when sustaining a NSI?

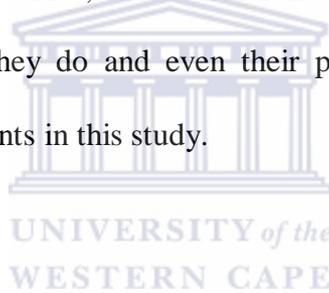
5.2.2 TAKING ACTION

As the researcher, I found that the participants had a reasonable understanding of the initial procedure described in the NSI protocol. Knowing and adhering to the NSI protocol could have health and compensation benefits, should they take the preventative actions. I found that the participants knew some of the specific steps of the NSI protocol but chose to ignore the other steps. According to the HBM (2.6.3), different regulations and protocols affect the HCW's behaviour when they sustain an injury.

Should HCWs adhere to the NSI protocol it would have a beneficial outcome for them. However, even though they are aware of the benefits they still appear not to adhere to the NSI protocol. According to a study done by Zungu, Sengane and Setswe (2008), of the 96 participants who participated only 8 participants followed the prescribed guidelines and procedures when they sustained their NSI. In this study the

researchers found that most of the participants who sustained a NSI followed the NSI protocol initially but after sustaining more NSIs, they started to weigh their options of compliance versus non-compliance.

Taking action encompasses the initial care, reporting, collecting of samples, starting treatment and follow-up care that the participant needs to adhere to. Zungu et al., (2008) found in their study that a total of 7.3% of the participants did not report the NSI. The reasons for this included fear of HIV testing, not knowing who or where to report to and concern about confidentiality. A few participants felt that they might be stigmatised if they are HIV positive, and if their fellow colleagues should find out it can really affect the work they do and even their personal life. These were also reasons given by the participants in this study.



In a study done by Trim (2004), it was found that a HCW's decision to report the incident was made after assessing the source patient's lifestyle. Nash and Goon (2000) found that only 5% of NSIs got reported because the HCW's decision was influenced by the patient's lifestyle. In this study participants provided similar reasons for not taking action namely that if the patient's HIV test was negative, some of the the HCW did not regard it important enough to report or go for testing.

5.2.3 KNOWLEDGE OF THE NSI PROTOCOL

Many of the HCWs that took part in the study had some idea of what the NSI protocol entailed, but they were all honest in admitting that they have a lack of knowledge

about the details of the protocol. Most of the participants admitted that they have never looked at the NSI protocol even though the protocols are to be found in the units that they working in. Due to this, HCWs have a potential of contracting a serious illness when they sustain a NSI because they are not aware of the proper procedure to follow (HBM, 2.6.2).

In the study participant 9 found the experience very overwhelming, as he did not know what to do when he sustained a NSI. He expected the permanent staff, who have been working at the institution longer, to guide him on what procedure to follow. Being an intern and not knowing the protocol, the participant found the experience very confusing and overwhelming and he did a lot of things that were not expected of him.



Many of the participants are new in the medical or nursing field and they are not experienced enough in their field of practice. I found that not having been introduced or given the NSI protocol during the induction period at the institution was the reason that the participants did not understand the importance of the NSI protocol. A few of the participants knew where to find the NSI protocol, but they never took the time to look at the protocol as they did not view it as important. I found that due to HCWs not knowing the NSI protocol, it put them at a higher risk of contracting blood-borne pathogens. This is in line with the HBM, and should HCWs have a better knowledge surrounding the NSI protocol, it could decrease their potential of contracting these blood-borne pathogens.

According to Kotwal and Taneja (2010), it is estimated that three million HCWs worldwide experience percutaneous exposure to blood-borne viruses each year. These statistics indicate that HCWs have a very high potential of contracting blood-borne pathogens that could be detrimental for their health. The study by Zungu et al. (2008) found that not following the standard precaution measures indicates a lack of adequate knowledge about the consequences of a NSI. They also found that a lack of experience and knowledge, poor orientation and lack of in-service education and accompaniment are all reasons for HCWs' sustaining a NSI. According to Zungu et al. (2008), lack of experience and knowledge and poor orientation could be a reason why so many students in their study sustained NSIs.

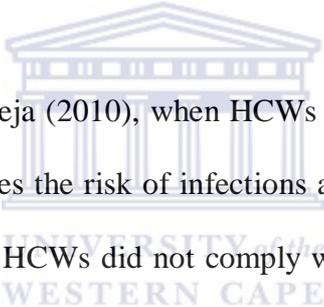
5.2.4 COMPLIANCE TO THE NSI PROTOCOL

During the interviews I discovered that HCWs mostly understood that having a NSI could be dangerous to their health. Even knowing the dangers some participants still had reasons for non-compliance. Some of them still perceived sustaining a NSI as not risky enough to go for reporting or follow-up testing. This behaviour can lead to barriers in taking action (HBM, 2.1.4), i.e. going for reporting, testing and treatment, which can have detrimental effects on their lives. The one question that most of the participants agreed on was that HCWs are non-compliant with the NSI protocol.

Some of the participants stated that they were too busy and did not have time to go and report the incident or initiate the PEP treatment. The treatment also made them so sick that they were unable to use it during their normal working times. Having side

effects to the PEP medication however was not the dominant reason for non-compliance. Most of the participants found that HCWs viewed sustaining a NSI as not important and it appears to have become a norm in the work place.

According to HBM these barriers could be preventing the HCW from going for treatment. In this study, not viewing the NSI as risky enough, being too busy to report the injury or the debilitating side effects of the medication could be regarded as barriers preventing the HCW from getting the support they need.



According to Kotwai and Taneja (2010), when HCWs comply with the NSI protocol or Universal Protocol it reduces the risk of infections and protects them. They found that some of the reasons why HCWs did not comply with the NSI protocol included that HCWs were not able to use PEP treatment during emergencies and being overworked. According to Adams, Stojkovic and Levenson (2010), HCWs perceive a patient having a low infection risk as a reason for them not to comply with the NSI protocol. This was also evident amongst the participants in this study, who first check the patient's clinical notes to assess the patient's HIV status and base their decision of complying with the NSI protocol or not on that result.

5.2.5 SUPPORT

In the case of a NSI, having a good support system in place for HCWs is perceived to be important. According to the HBM (2.6.2), not having good support structures in

place for reporting and follow-up testing can be a barrier for HCWs not adhering to the NSI protocol. Many of the participants of this study found it difficult when they had to report the NSI. Not knowing who to report to and not trusting the person who is doing the test are factors that arose from the data; factors that affected HCWs' not complying with the NSI protocol. From the findings of the study it was confirmed that the institution does have occupational health and safety protocols in place. However most of the participants did not know the details of the NSI protocol which placed them at a disadvantage and they simply followed the advice of colleagues rather than actually looking at the NSI protocol for guidance.

Having a good management structure in place to deal with the follow up of HCWs is another area that the participants found lacking. Getting your result should be done confidentially but participants mentioned how they were just called up and told their result. There was even a participant that misinterpreted the information she got over the phone when she received her HIV results. The lack of support from line managers are of concern and could be regarded as perceived barriers for the HCW as they feel alone and unsure of the outcome of their results.

According to Zungu et al. (2008), reasons for an increased risk of NSI included a lack of knowledge surrounding the procedure, poor in-service education and accompaniment. Having a good support structure would make the working environment safer to work in. The WHO (2005) ascribes under-reporting of NSI to lack of follow-up and the effectiveness of the policy and practices implemented. The management structures could play a key role in the effective monitoring of

compliance to protocols and facilitate the counselling and support offered to the HCWs who sustained NSIs.

5.3 RECOMMENDATIONS

The following recommendations are suggested, based on the findings of the study:

● **Educational and training and support:** It is recommended that HCWs be familiarised with policies and protocols surrounding NSIs and having updates on protocols during routine training sessions. Introducing the NSI protocol to all new employees during the induction period. Providing in-service training sessions for HCWs explaining how to complete the incident forms and the necessary steps to follow should they sustain a NSI. The importance of complying to protocol time-lines to ensure compensation following work related injuries. Having more wellness days at the workplace to promote a sense of wellbeing and having an HIV drive to promote reporting and testing of all staff. Providing information on NSI protocols as pamphlets and posters on walls in designated areas. Occupational Health Nurses could have one-on-one sessions with staff to present the various counselling options after sustaining a NSI. ICAS, an employee assistance programme, could provide individual counselling services for those staff members that find it difficult to deal with the injury.

● **Management structures:** It is recommended that the management staff be sensitized about the needs expressed by HCW to feel supported following a NSI. Management should be encouraged to share information about the lines of communication following a work related injury. It is recommended that the

management implements an effective monitoring system to ensure compliance to institutional protocols.

- **Future research:** It is recommended that the occupational health and safety nurse capture accurate data related to occupational injuries on a data base and that the data be updated to monitor the compliance of HCWs to reporting, treatment and follow-up testing. Having a good tracking system in place could provide base-line information for future research endeavours.

5.4 CONCLUSION

An exploratory descriptive study was done of the perception and experiences among health care workers about the NSI protocol and compliance with it. This approach provided me with a new understanding as to why HCWs do not comply with the protocol. It also supports the phenomenon that HCWs understand the danger surrounding contracting HIV or Aids from a NSI but complying with the protocol is still not adhered to or seen as that important. The HCWs find that knowing the protocol is not important just as they find not reporting of a NSI as not risky. In promoting their social, physical and emotional wellbeing, health care workers should be the ones taking the lead in disclosing the impact the incident has had, without the fear of punitive measures, discrimination or exposure to lengthy incident forms. The responsibility of promoting their physical, social and emotional wellbeing should be a responsibility shared by all stakeholders in the working environment. HCWs must be made to understand that it is important to report an injury when it happens so as to make sure that they always remain in good health, both for their personal wellbeing and for that of their patients and family.

I found that the management of the hospital can play a vital role in health care workers complying with follow-up testing, as they need to support the HCW who sustained the NSI during the process. Getting HCWs to understand that adhering to the NSI protocol is important is a difficult problem to solve, as I have illustrated in the outcomes of the study. However it is a problem that in time can be solved if HCWs start taking the risk of the NSI more seriously.



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Appendix 1

**OFFICE OF THE DEAN
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DEVELOPMENT**

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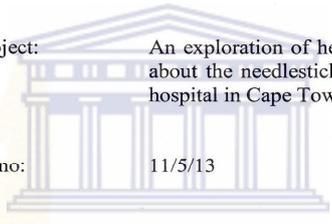
15 June 2011

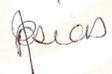
To Whom It May Concern

I hereby certify that the Senate Research Committee of the University of the Western Cape has approved the methodology and ethics of the following research project by:
Mrs L Fortuin-Johnson (School of Nursing)

Research Project: An exploration of health care workers' perceptions about the needlestick injury protocols at a Level 2 hospital in Cape Town

Registration no: 11/5/13


UNIVERSITY of the
WESTERN CAPE


*Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape*



**UNIVERSITY of the
WESTERN CAPE**

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

APPENDIX: 2

Interview Questions

1. What do you know about the NSI protocol of this institution?
2. Where did you get the information about NSI protocol?
3. Explain the NSI protocol to me?
4. Do you think that HCWs are compliant to NSI protocol? Why do you say so?
5. What, in your opinion are the consequences of non-compliance to the NSI protocol?

Probing questions will be asked throughout the interview: e.g. explain the sequence of reporting and explain the follow-up process.



APPENDIX: 3

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

TITLE OF THE RESEARCH PROJECT: *An exploration of Health care workers' perceptions about the needle sticks injury protocols at a Level 2 hospital in Cape Town.*

PRINCIPAL INVESTIGATOR: Leonore Fortuin-Johnson

CONTACT NUMBER: 071 471 7857

Project Title:

This is a research project being conducted by Mrs. Leonore Fortuin-Johnson at the University of the Western Cape. We are inviting you to participate in this research project because you will get rich sourced information once research is complete and the information will have an impact on how you practice. The purpose of this research project is sort new information concerning what is health care worker knowledge and compliance to the needle stick injury protocol.

What will I be asked to do if I agree to participate?

You will be asked to take part in individual interview where the interviewee will ask open-ended questions pertaining to the topic above. The interview will be an hour long in a private room at a convenient time for the participant. The interview will be held at the participant's place of work. Consent for audio recording will be obtained from the participant before the interview begins. The following questions will be asked during the interview:

1. What do you know about the NSI protocol of this institution?
2. Where did you get the information about NSI protocol?
3. Explain the NSI protocol to me?
4. Do you think that HCWs are compliant to NSI protocol? Why do you say so?
5. What, in your opinion are the consequences of non compliance to the NSI protocol?

Would my participation in this study be kept confidential?

We will do our best to keep your personal information confidential. To help protect your confidentiality, due to interviews the participant will be assured of total anonymous as only the researcher will know the names of the participants and all private information will only be identified by codes use in the data forms. Fake names will be given to participant if the want as to make sure they have protection. All the interview will be audio recorded and protective password will be use to make sure that the researcher will be the only one with the password to the data.

If we write a report or article about this research project, your identity will be protected to the maximum extent possible.

What are the risks of this research?

There are no known risks associated with participating in this research project.

What are the benefits of this research?

The benefits of the research is to understand the knowledge health care workers have concerning the needle stick injury protocol and getting them to understand how important it is to report and go for follow-up and treatment. This research is not designed to help you personally, but the results may help the investigator learn more about compliance to the needle stick injury protocol. We hope that, in the future, other people might benefit from this study through improved knowledge of what health care worker know concerning the needle stick injury protocol and the importance of complying to the needle stick protocol.

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

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify

Is any assistance available if I am negatively affected by participating in this study?

The participants can request for counselling and the researcher will assure that the participant will get appropriate counselling.

What if I have questions?

This research is being conducted by *Mrs Leonore Fortuin-Johnson from the school of nursing* at the University of the Western Cape. If you have any questions about the research study itself, please contact Mrs. Leonore Fortuin-Johnson at: cell: 071 471 7857; email: leocape @yahoo.com; address: 10 Cavesson Road, Jagtershof, Kuilsriver, 7580

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Head of Department:

Dean of the Faculty of Community and Health Sciences:

University of the Western Cape

Private Bag X17

Bellville 7535



This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee.

1.8.3 Declaration by participant

By signing below, I agree to take part in a research study entitled: *An exploration of Health care workers' perceptions about the needle sticks injury protocols at a Level 2 hospital in Cape Town.*

I declare that:

- I have read or had the information read to me and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is voluntary and I have not been pressurised to take part.

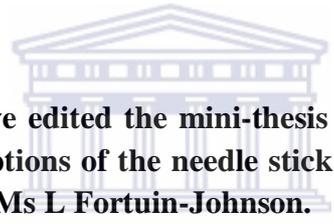
APPENDIX: 4

MM Bot
31 Skaife Street
7806 Hout bay

10 May 2012

TO WHOM IT MAY CONCERN

This is to certify that I have edited the mini-thesis entitled: `An exploration of health care workers' perceptions of the needle stick injury protocols at a level 2 hospital in Cape Town', by Ms L Fortuin-Johnson.

The logo of the University of the Western Cape, featuring a classical building facade with columns and a pediment.
**UNIVERSITY of the
WESTERN CAPE**

Monica M Bot

Education Consultant & Member of the Professional Editors' Group

APPENDIX 5

EXAMPLES OF TRANSCRIPTS: Transcribing done by researcher

Document: PARTICIPANT 02
Created: 2011/07/15 - 17:03:00 PM
Modified: 2011/08/11 - 10:53:58 AM

PARTICIPANT 09 11/07/15

Interview 2

Int: Have you had a needle stick injury before...?

Part: Yes, I have experience it before...many times...

Int: Do you know the needle stick protocol at this institution that you working at.

Part: Uhhh...I think, I do because I experience it uhhh... .I know that you report it to the sister on...you know the shift leader and then you and if during the day you go and see the occupational health sister. Uhhh... during the night I think you end up having to chat to the night matron on call, uhhh... and then someone else draw the blood from...if it's a , uhhh... . I only deal with babies so if its a baby then uhhh... and if the mother has been tested then we test the baby for pcr and if the mother has not been tested then we go and asked for the mom to be tested basically uhhh... but if she is negative I think we also repeat the test of the mom. Uhhh... and if she is positive then we do a pcr on the baby, uhhh... but the person drawing all the bloods should not be the person who had the needle stick. Uhhh... and then while you waiting for the results they usually start you on a started pack , which is either the two or three drugs depending on the severity of the injury and it also depends if it was a splash or a needle stick through gloves or if it was a like a thru and thru , cause it is more risk if it is a hollow bore needle or if it was a scalpel slice or what ever. Uhhh... so usually Sr. Caleni or which ever sister that decided the level of the risk and which drugs to start you on and they usually are involve in getting the result and then they will let you know and then if its negative you stop your started pack and if its positive you carry on your started pack for a month, and then you get retested at 6 weeks as far as I know. I have not done, luckily gone down that part so and then I think you also do base line hepatitis screens to make sure uhhh... your immune that your booster factor is fine and then they also do a base line liver functions and FBC because you going to start the drugs that you have to and uhhh... I think you have to get a six week check up and then I think you go back again later for another test I'm not sure, that's the part I defaulted (laughing)... .

Int: Where did you get all this information concerning a NSI from.

Part: Uhhh... basically my superiors, uhhh... my consultants, uhhh ... when we start working here uhhh... we get a hand out of all the protocols that we use clinically and also of a occupational health protocol for NSI that's in a little pack that

we give all the new MO's and I experience it so I went through it so uhmm... I'm just saying from what I remember like what happen.

Int: From the hospital staff... .

Part: Ja and there are posters some posters.....mumble

Int: Well since experiencing a NSI, can you explain to me step by step what did you do ... you have explained what the protocol is about but can you explain to me from the initial injury what was your steps that you took.

Part: Ok, first immediately as it happen I obviously took the needle out and I squeeze the blood out of my hand, it was in my thumb, I think I squeeze the blood and then I went to the tap and I think I stood there for ten minutes under water, even though you don't have to, I know you probably don't have to but you start stressing and I think I emptied a bottle of degerm on my finger as well...and then uhmm... then you look in the folder and you go ok is the mother negative or not, and then if she is positive then you start freaking out even more. Then you decide, ok are you going to report it or not and then, that one was positive so I though ok I cant just ignore it. So I reported it to the sister on duty, I think it was in the middle of the night and uhmm... I then, no it was during the day cause then I went to sister Caleni so they phone sr.caleni to see if she was there. She is the occupational health lady and then uhmm... went down there then she took a HIV test from me to see, if I'm negative or positive, at that point and obviously if I'm positive they not going to start prevention. Uhmm...and then obviously before like counselling me about it and then they also did bloods on me and then she asked someone to take a pcr on the baby because the mom was positive so now we needed to see if the baby was positive and then uhmm... it took two days before uhmm... I got the results but in the mean time she decided it was a high risk. I cant remember why, uhmm... so she put me on three drugs and then I started the starter pack and then she gave me every thing she gave maxalon for nausea etc. And then uhmm... she told me she would phone me with the results which she did but it took like a while and then uhmm... when it was negative then we stopped the starter pack, ok

Int: Ok , did she give you any follow-up dates.

Part: Uhmm... she did uhmm... she, I think... don't think she gave it on, I remember she gave me a card with my little number on and everything but I don't think, can't remember cause I never went. So she did, there was a thing of that, that I must go back and get tested again in six weeks or something but uhmm I don't remember.

Int: For those follow-ups you never went.

Part: No...

Int: For the six weeks or the three months or the six months

Part: No...

Int: Do you think that as HCWs comply to the NSI protocol.

Part: Uhhh... I think they comply in the beginning when it happens, especially if they, if they themselves perceived that it was a risk. I know for myself that its not the only NSI that I have had a few like at lease twice a year where I would look at the patients and say, ok this mother is negative and I that this is a low risk NS injury. A low risk patient that I would just ignore it and its bad but you get to the point where you just lust(Feel) to go through that whole thing. So you don't want to start the drugs because they make you feel like crap and so you kind of go ag its fine and you ignore it. You don't say anything, but if you, that it was a high risk patient uhhh... or it was a positive mother well obviously any positive mother but especially if it was a positive mother who did not take PMTCT or you really think there is a risk for the baby, to be positive, then you would go through the whole thing. So, and then but from my experience that a lot of health care people would do the starter pack and then when the thing comes back positive finish the 30 days but not really follow-up, don't follow it up especially negative, especially the baby because we have a little of a safety thing in that the baby has to be positive so uhhh it first has to get it from the mother and most infection happen not congenitally but peri Uhhh.... nasally from breastfeeding or from the delivery. So uhhh... most health care workers would do the whole starter pack thing and if it comes back negative stop the starter pack and then kind of forget about it cause the acute danger is over and the long term thing you don't think about that really cause, especially if it happens when you on call or if you busy that day. You don't have time to and you also not lust to go and find, because sometimes it a schlep, you got to go and find the person you have to talk to and sometimes you don't know exactly who is on for the hospital , especially if its after hours or on the week end. And sometimes you don't necessary know them or trust them to like do it properly or you really don't want to take the drugs, like if you had them before you know what they make you feel like. Like I know that me and Kaletra don't agree with each other and so like, I was very thankful for when that baby was negative, like I could stop but if I had to take Kaletra for a month I would really consider taking my chances with verses taking the drug and as you know logically like that it does not make sense, you like suck it up for a month because you really don't want to be HIV positive but at that point and time you kind of think in your mind that the chances are of becoming HIV Positive from a NSI, especially from a baby, you know via the mom and all of that and with the viral load isn't all that low uhhh... so little and then and there you feeling like crap and then you still have to carry on doing your work and doing your 24hour call. So you kind of think ok you know I will just see how it goes but uhhh... Ja sometimes it's a lot of hassle to try and do the whole thing even though you do want to prevent yourself from getting HIV but I think because we kind of try and talk it down and say that the risk is so low we not going to go though the whole schlep of doing it. Like I had a few where I just gone ag well the mother is negative you know move on.

Int: So is that where the ignoring comes in.

Part: Yes.

Int: What in your opinion are the consequences for non compliance of HCWs not complying to the NSI protocol, in your opinion.

Part: Ok, I think obviously there is the chances that you going to get HIV. Uhhh... if you don't, uhhh... assess the risk effectively in which, maybe in the situation you the one who is going through the needle stick, you can't really think that clearly and so you decide, ignore it and it is the one that's going to get you to have HIV that's the consequences of that and that also you might not know it for a long time in which case your health will deteriorate. Uhhh... pick it up in the beginning stages is obviously a lot worse for you and then there is also the chance of you being positive and pass it on to others unknowingly. Uhhh... and then with regards to not taking the drugs. If you are given PEP and you sort of defaulted on it obviously you going to cause resistance Uhhh... depending on what you do and so on. Uhhh... and I think people just don't take the risk particularly seriously, I mean some do uhhh... and there is also the complete opposite where people freak out about a splash of blood on their hand when they don't even open. You know there is also that but I think the consequences of not following that uhhh... you would not have proper prevention of getting it and if you do, do you use just the starter pack and you opt not to do the whole thing you will probably get resistant.

Int: Do you know of the compensation act under the occupational Health and Safety act.

Part: No.

Int: You have never heard of the compensation act, it's suppose to be part of the protocol.

Part: Ok.

Int: Do you know that, within how many days, hours, you suppose to report an incident.

Part: Uhhh, no not specifically. I thought that you should just do it as soon as possible. I don't know what the actual cut off is.

Int: And also when you need to take the PEP (Prophylactic). Do you know that in how many hours you suppose to take that, days...?

Part: Uhhh, I thought it was in 3 days

Int: 3 day's, Ja that is correct

Inter: Thank you for your time and for taking part in the research.

Part: No problem it was interesting

End of interview.

