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Faculty of Community and Health Sciences

Title of thesis: **An explorative study of the experiences
and the reasons why health workers
report a needle stick injury**

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Declaration

I declare that *AN EXPLORATIVE STUDY OF THE EXPERIENCES AND THE REASONS WHY HEALTH WORKERS REPORT A NEEDLE STICK INJURY* is my own work, that it has not been submitted before for any degree or examination in any other university, and all the sources that I have used and quoted have been indicated and acknowledged as complete references.

Bonita Williams

Nov 2005

Signed:



Abstract

The aim of the study was to explore the reasons why health workers reported their occupationally acquired needle stick injury. The secondary reasons for this study was to be able to identify the factors that contributed to the choice to report as well as the feelings health workers experienced during and after the injury.

Methodology

A qualitative research design with a phenomenological approach was used to gain understanding around why health workers reported the needle stick injury. Data was collected through a semi- structured interview.

Population

The 89 health workers at a Secondary Hospital in the Cape Town Metropole Health district who reported an occupational injury from 2001 to 2004.

Sample

Nine health workers were interviewed.

Findings

From the nine participants only six had needle stick injuries, while the other three had other blood and body fluid occupational exposures.

The most common reason for reporting was that the health workers wanted to ensure their own physical well-being. Health workers and their families experienced emotional turmoil after the needle stick injury.

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Chapter 1 Introduction

1.1 Introduction

The occurrence of a needle stick injury is an event that can have a multitude of implications for the health care worker, their friends and family (Turley and De Chesser, 1995:23). The needle stick injury poses a threat to the physical health and psychological well-being of the health worker which also impacts their closest family members or friends (Moody, 2002:5; Debnath, 2000:252). If the needle causing the injury was used in a patient with an infectious disease, there is a chance that the health worker can contract this disease. The origin of the needle causing the injury might not always be known but the needle is still regarded as possibly carrying an infectious disease (WHO,2000).

The reporting of a needle stick injury is made compulsory by workplace policies (Department of Health, 2000:5; Hamory, 1983:174), yet it is documented to be an underreported phenomenon (Hamory, 1983:174; Eholie, Ehui, Yebouet-Kouame, Simo, Tanon, Coulibaly-Dacoury, Kakou, Bissagnene & Kadio, 2002:366; McCormick and Maki, 1981:930). Even though the reporting of a needle stick injury is mandatory, it appears that some health workers decide not to report it at the time when a needle stick injury occurs. Unfortunately there are no proven day-to-day mechanisms in place within a hospital environment to accurately document both the reporting or the non-reporting of a needle stick injury. The only documented version of the needle stick injury occurrence is a workplace injury report, that sets in motion a process whereby the health worker is medically managed, to decrease the risk of contracting an infectious disease from a possibly contagious needle (Western Cape

Provincial Department of Health, 2001). During this study the researcher wishes to explore why health workers report needle stick injuries.

1.2 Definitions

1.2.1 Needle stick injury

A needle stick injury occurs when the skin of a health worker is injured by a needle whilst performing their duties (Bandolier, 2003:1). The injury can be caused by the health worker him or herself or could be as a result of a needle being left exposed by someone else (Moody, 2002:1).

The hollow bore needle carries a greater risk than a close ended needle to convey infections. The hollow bore needle is used in the treatment of patients for introducing medicines or intravenous therapy. The hollow bore needle is also used in drawing blood or aspirating other body fluids. If a needle has been used in a patient, potentially infectious body material can thus be transferred to the health care worker who is injured whilst performing his or her duties (Bandolier, 2003:6; National Institute for Occupational Safety and Health (NIOSH), 2000).

1.2.2 Health workers

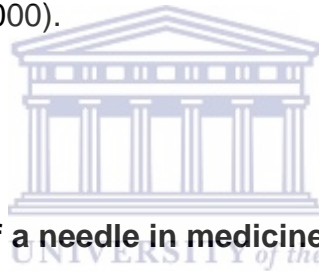
These are all categories of workers within health care facilities, who have contact with patients in providing a service to their health needs.

1.2.3 Workplace sharps injury policy

This is an institutional workplace policy document adapted to the individual organisational needs. The policy is usually in line with national policies and legislative guidelines (The Department of Health, 2000; Western Cape Provincial Department of Health 20001).

1.2.4 Legislation

Within the context of the study, the legislation pertaining to the rights of workers to a safe working environment, or legislation around the compensation of health workers with occupationally acquired illnesses (Hoskin, 2002; Panas & Begley, 1998:38; The United States of America, 2000).



1.3 The history of a needle in medicine

Intravenous injections and infusions were administered since 1642 as experiments. The first books on the application of intravenous therapy in humans were published in 1664. Charles Gabriel Pravaz and Alexander Wood developed the first glass syringe with a hollow pointed needle, as we know it today, in 1853. Pravaz's invention led to the development of needles and syringes for subcutaneous injections and local anaesthesia. Around 1900 the method of injecting substances for healing purposes came in to being (Feldmann, 2000:239). In 1956 a New Zealand pharmacist, Colin Murdoch, patented the plastic disposable syringe (Ellison [Sa]).

1.4 The rationale of the study

The choice of the topic stems from the researcher being involved with the training of health workers in mental health awareness in the primary health care environment. The subject of needle stick injuries as a major stressful working experience was a theme that was often raised. Health workers would use self-awareness exercises to describe how needle stick injuries impacted on their professional and personal lives. What was also significant was that their emotional experiences were still ongoing although the event had occurred a few years previously.

The self-awareness sessions were platforms for health workers to feel safe while expressing their feelings, and to be supported by the other health workers in the small training group. Health workers were encouraged to express their feeling regarding any work related problem during these sessions. Challenging them on their most intense feelings around work experiences led to the discovery that needle stick injury incidents are an emotionally-charged experience, and that the policies, procedures as well as the work environment, failed to capture and release the emotional energy experienced by the health workers. This lack in addressing and managing the emotional impact that health workers experience when they sustained a needle stick injury stimulated the researcher to investigate needle stick injuries.

1.5 Problem statement

The institutional workplace injury report is a document that serves as record or proof of a needle stick injury that occurred. The workplace report (Appendix I) does not however provide information as to the reason why the health care workers report the needle stick injury. On further personal enquiry to management as to why this

question is not part of the document, responses from managers were that it was not seen as important enough to record the reason why a health caregiver wants to report the needle stick injury. The argument that the researcher put forward was that she experienced from previous discussion groups that health care workers might suffer severe emotional trauma when they have been injured by a needle and that they many times wish to share there feelings with someone. The researcher also felt that if it is known why people report needle stick injuries the information could be used to motivate those who do not report the injuries.

Moody (2002:5) in his report on the experiences of three South African doctors, who were exposed to needle stick injuries referred to the “silence” or “what then” “health workers face” after a needle stick injury. This may be interpreted as referring indirectly to the emotional stress that they have experienced.

The reporting of a needle stick injury is made compulsory by workplace policies and one would expect therefore that all injuries that occur in the workplace will be reported. However, literature suggests that the phenomenon is widely underreported (Eholie et al., 2002:366; McCormick & Dennis, 1981:930. Unfortunately there is no way of accurately estimating the underreporting of a needle stick injury. Adding to this, there is a lack of literature around the behavioural aspect, especially the emotional behaviour of the health worker who reports the needle stick injury.

The problem identified when the researcher looked for literature that specified the reasons why health workers reported a needle stick injury was that there is no documentation within the working environment giving an indication of the underreporting to adhere to the work policy and very little research available on to

topic why health workers report needle stick injuries. There are few studies focussing on the emotional turmoil that they experienced when deciding to report the injury. Given all the influences, environmental conditions and work issues following a needle stick injury, the research question that arises was “why would health workers report a needle stick injury?”

1.6 Aim of the study

The overall aim of the study was to explore why health workers report the phenomenon of an occupational needle stick injury.

1.7 Objectives of the study

The primary objective was to determine the reasons why health workers report needle stick injuries.

Secondary objectives were to explore their experiences regarding issues related to the needle stick injury such as “how they felt when reporting the accident?”

The last objective would be a report that can be used to motivate other health care givers to report a needle stick injury.

1.8 Method of enquiry

A qualitative approach was used to gain information regarding the experiences and reasons why health workers report needle stick injuries. The instrument used in acquiring the knowledge from the health workers was through the use of a semi-structured interview. The semi-structured interview allows the researcher to pursue in depth information into the phenomenon (Holloway & Jefferson, 2002:24).

1.9 Limitations of the study

The process of the study being the requirement of a mini-thesis, made the scope in terms of time, resources and study population small. The population was limited to health care workers at one regional Metropole Hospital. The time and length of the mini thesis limits the issues surrounding needle stick injuries to the reason why the individual health worker decided to report the incident and the experiences they felt when doing so.

1.10 Ethical considerations

The reporting of a needle stick injury is a process that is confidential and managed according to national guidelines. An ethical dilemma may occur in the sense that the participant may feel that the organisation has breached this confidentiality. The researcher was sensitive to this issue and the following method was used to address the dilemma as best as possible. The researcher, due to her position at the organisation had access to the official documents of people who reported injuries. When she contacted the possible participants she explained to them that she is working in the health and safety division of the hospital and would like to do some investigation into why health workers report needle stick injuries. She explained the procedure to them, especially how she obtained their contact details (due to the nature of her duties) and asked them if they would agree to participate.

She assured them concerning the aspects of confidentiality. Thus that no names will be given in the report and that the findings will be published anonymously in a

research report. Participants, who consented to the interview being recorded, were assured that the recording would be erased after the data was captured (Bailey, 1997: 182; King, 1994:21).

1.11 Consent to participate

The institution required written consent from every participant. The consent form also had a section to indicate whether permission was granted for the interview to be recorded. Written consent was obtained from every willing participant, and in the event of them choosing not to be recorded, that section was deleted on the consent form. Verbal permission was obtained to write notes during the interview.

The protocol to conduct the study was submitted and approved by the School of Nursing, Community and Health Science Committee for higher degrees and the Senate Higher degree committee of the University of the Western Cape. In addition permission was also obtained from the institutions ethical review board.

1.12 Structural overview

In this study, the literature on needle stick injuries focuses on various aspects that have an impact on safety and infectious control in the hospital environment.

Chapter two deals with issues such as incidence, legislation and implications of needle stick injuries for the health worker. Earlier as well as current studies are compared and sometimes contradict each other.

In chapter three, the method of approaching the study as a qualitative explorative phenomenological exercise is covered.

Chapter four identifies themes from the participants, and compares them to other findings in studies, around the experiences of health workers that have experienced an occupational needle stick injury.

Chapter five is a discussion about the findings and recommendations, based on the findings from the data collected from the participants.

1.13 Summary

The phenomenon of a needle stick injury is an event that requires further exploration as to why individual health workers report its occurrence. From the literature, it is evident that many personal, social, occupational and environmental factors impact on the individual's action in reporting a needle stick injury. The organisational culture is also an external factor that influences a health workers ability to perform his or her occupational activities.

This study will explore the reasons put forward by health workers in reporting the phenomenon of a needle stick injury and their experiences related to the incident.

Chapter 2 Literature review

2.1 Introduction

A review of relevant literature has been conducted to explore the evidence regarding needle stick injuries and the experiences of health workers exposed to needle stick injuries. The literature review was done before, during and after the data collection process to fit in with the qualitative approach of research. Little scientific literature has been found on “why health workers report needle stick injuries”. There is also very little evidence on the psychosocial experiences of people who were exposed to a needle stick injury. Most of the literature emphasized the incidence of needle stick injuries, the reasons why health workers do not report the occupational injury and on the economic impact of the incident. The following search strategies were followed to identify the related literature. Cochrane data base, The National Library of Medicine, PubMed, Ebsco and the topic was also search in the Google search engine and Science direct search engine. The search consisted of international and national literature. It was done to enable the researcher to gain background information concerning the issue about needle stick injuries especially about the reporting thereof and the emotional experiences thereof. Related issues around the topic such as legalisation, policies and risks of contracting blood born infections as well as the theoretical framework from which the study orientated was looked into. Literature pertaining to technical information around safe sharps managing practices and infectious control measures, to address occupational exposure to blood-borne organisms, has been excluded.

2.2 Models for risk assessment

2.2.1 Julius Sim model for nurses' assessment of occupational risk

Sim (1992:570) proposed a model for risk assessment by the health worker in relation to nursing patients that are HIV positive. This model addresses the physical as well as social issues that need to be considered when the health worker is exposed to an occupational hazard such as a needle stick injury from a HIV infected client. He further emphasized the complexity of the risk assessment as an injury obtained from a HIV infected client is also surrounded by fear, misunderstanding and sheer panic.

According to the model, there are three factors associated with each hazard:

magnitude,

probability

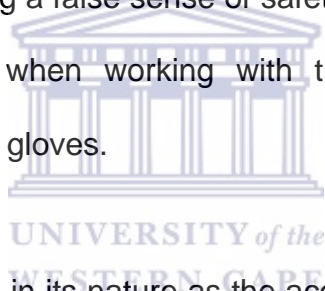
and acceptability.



The magnitude of the hazard of the HIV and the consequences of developing Acquired Immunodeficiency Syndrome is immense. Sim (1992:570) cautions that social and psychological factors can cause an overestimation in the magnitude of the risk. Reports from studies done in Italy (Ippolito, Puro, Petrosillo, De Carli, & The Studio Italiano Rishio Occupazionale da HIV, 1999:33) show that the seroconversion rate after exposure to a hollow bore blood filled needle stick injury from a HIV positive patient is 0.21 (CI 0.03 - 0.75). This rate is much higher in inexperienced personnel such as medical students. O'Niell, Abbott & Radecki (1992:1451) reported that one medical student seroconvert every second year. The magnitude of the risk could increase by the perceived social, psychological and cultural factors associated with risk of contracting HIV. Such psychosocial factors could be the perception of health

workers on pregnant women's sexual practices. Health workers often perceive clients that are HIV positive as people who engaged into immoral sexual relations (multiple partners), while the client herself may well be in a steady relationship and the partner who is not the patient could be the actual "immoral" subject.

The probability of the infection may be reduced by issues such as precautions, post-exposure prophylaxis and possible immunization against the virus (National Institute For Occupational Health, 2000). Although this probability of acquiring HIV might be low, the life threatening consequences of contracting the disease after the exposure to a needle stick injury increases the probability factor. The probability could further be increased as often many patients with the HIV have no symptoms and this can lead to health workers having a false sense of safety which may lead to carelessness or taking less precaution when working with the clients (Sim, 1992:573) e.g. conducting a birth without of gloves.



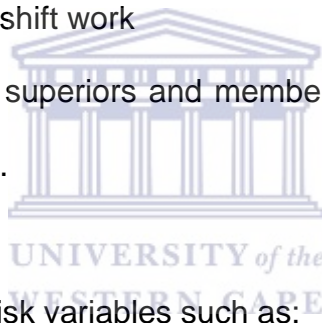
The third factor is subjective in its nature as the acceptability of the risk relates to the value versus benefits posed by the hazard. In others words it refers to professional obligation. Sim (1992:571) describes the acceptability threshold as the point where nurses may forfeit their obligation towards their profession and seek alternative options so not to be exposed to clients that are infected with the HIV. In other words: should the health worker change profession or limit their care giving by limiting the physical contact, rather than to take the risk to be exposed to a needle stick injury while administering an injection to a HIV positive client. Limiting contact or ignoring these clients cannot be morally justified (Sim, 1992:573). The acceptability factor differs from individual to individual as some my well change their professions e.g. go into a non clinical position rather than to be exposed to the risk, while others will stay

e.g. in a labour ward and continue to be exposed to the risk on a daily basis. Lee, Botteman, Xanthakos & Nicklasson (2005:117) emphasises this and state that it is the emotional distress that follow a needle stick injury that cause this decision to change profession or occupation.

2.2.2 Catastrophe model for the exposure to blood-borne pathogens and other accidents in health care

The Catastrophe model refers to two major predisposing variables that increase the risk of being exposed to an occupational injury. These risks are:

Symptoms of depression within the health worker
health workers doing shift work
and verbal abuse by superiors and members of society (Guastello, Gershon, Robyn & Murphy 1999:739).



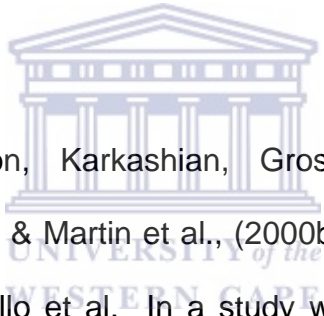
They further refer to lesser risk variables such as:

Job satisfaction
safety climate
environmental stressors
work pace
and universal precaution measures that could increase the exposure risk (Guastello et al., 1999:739).

This model theorises that small changes in any of the above variables can produce “sudden and dramatic outcomes” in risk increment (Guastello et al., 1999:740). This model further implies that it is not only the use of universal precautions that lowers

the incidence of accidents, but emotional, psychosocial, environmental and task circumstances also play a role. In summary the risk is collectively increased by the total working situation and not just the contribution of the individual health worker.

An important contribution of the use of this model is the ability to identify psychosocial risk factors that may contribute to the increase risk in occupational injuries. For an example, in one study the most significant finding was that verbal abuse from social sources (administrators, supervisors, patients and their families as well as co-workers) had a strong linear correlation with occupational risk exposure experienced by health workers and not the use of universal precautions that one would normally attribute to an increase in occupational risk (Guastello et al., 1999:747).



Studies done by Gershon, Karkashian, Grosch, Murphy, Escamilla-Cejudo, Flanagan, Bernacki, Kasting & Martin et al., (2000b:212) supports the increased risk factors identified by Guastello et al. In a study where they examined the hospital safety climate with specific reference to the institutional commitment to blood-borne pathogen risk management they found that there were fewer injuries in organisations that had strong safety climates. Safety climates were defined as the “summary of perceptions that employees share about the safety of their work environment” and the organisational climate as good leadership skills and organisational goals Gershon et al., (2000b:211). The risks that contributed to increase in occupational injury in their study were:

- biomechanical or ergonomic hazards

- higher patient infection rates

- less time available for training

job stress

rotating shift work

heavy workload / increased patient activities

the lack of autonomy and poor supervision (Gershon et al., 2000a:212).

2.3 Incidence of needle stick injuries

It is reported that about two million health workers experience percutaneous [needle stick injuries] exposure to blood born pathogens each year. On average four needle stick injuries occur per health worker per year [in high risk areas such as surgery] (WHO, 2002). In a study done by Allen (2003) he reported that nearly half of all nurses will be exposed to at least one needle stick injury during their career, 23.2% reported a near miss (that implies almost being injured by a sharp instrument) in the past month. Seventy one percent of medical students reported one or more needle stick injuries in one year (O'Neill, Abbott & Radecki 1992:1451). The National Institute for Occupational Safety and Health (NIOHS 2002) in the USA, estimates that between 600 000 to 800 000 of its eight million health workers sustain a needle-injury annually. The majority of sharp injuries that could be directly related to needle stick injuries are estimated to be about 89% of all occupational sharp injuries (Reddy & Emery, 2001:425). The needle stick injuries refer to: hollow bore needles, needles used during intravenous therapy and blunt end needles used during surgery.

The underreporting of needle stick injuries is a major obstacle when trying to determine the exact incidence of needle stick injuries and it is estimated that about half of the injuries go unreported (Eholie et al., 2002:366; McCormick & Dennis, 1981:930; <http://www.cdc.gov/niosh/2000-108.html>). In some institutions only nine

percent of needle stick injuries are reported to the health facility management (O'Niell, Abbott & Radecki, 1992:1451). Although the majority (80%) of people are aware that needle stick injuries should be reported only 51% do so (Elmiyeh, Whitaker, James, Chahal, Galea and Alshafi,,2004:326). Despite this underreporting, has several authors commented on the incidence of needle stick injuries among health workers. These were surveys and it may not reflect how many actually reported the injury when it occurred.

The following authors (Table 2.1) reported on the incidences of needle stick injuries in different category workers. The incident of needle stick injuries is the highest under surgeons (54.9%), followed by professional nurses (36.2%) and assistant nurses (33.3%). It is disturbing to discover that housekeeping people are also at risk for needle stick injuries and the incidence is about 18.5%. These injuries are commonly caused by negligence of professional health workers who do not dispose of sharps appropriately. "We remain baffled why professional medical personnel discard needles into waste baskets, linen hampers and other obviously inappropriate areas" (McCormick & Maki,1981:932).

Table 2.1: Summary of needle stick incidence according to health worker category

	n	N	%	Reference
Nurses	4997	14 157	35,3	Albertoni, Ippolito, Petrosillo, Sommella, Di Nardo, Ricci, Franco, Perucci, Rapiti & Zullo, 1992:540
	106	139	76.2	Aranci & Kosgeroglu, 2004:216
	320	427	74.9	Canadian Centre for Occupational Health and Safety (CCOH), 2003
	155	343	45,2	Lymer, Schutz & Isaksson, 1997:226
	143	316	45.3	McCormick & Maki, 1981:929
	299	526	57	Nsubuga & Jaakkola, 2005:773
	4	38	5.26	Reli, Mathur & Turbachu, 2002:206
	957	3 303	29	Shah, Bonauto, Silverstein & Foley, 2005:775
Total & average %	6981	19249	36.2	
Dentists/ Assistants	561	3 303	17	Shah et al., 2005:775
	561	3 303	17	
Physicians	1900	7 172	26.5	Albertoni et al., 1992:540
	26	427	6.08	CCOHS, 2003
	37	343	10.8	Lymer et al., 1997:226
	2	38	5.3	Reli et al., 2002:206
Total & average %	1965	7980	24.6	
Technical / Laboratory staff	369	2 513	14.7	Albertoni et al., 1992:540
	19	343	5.5	Lymer et al., 1997:226
	27	427	6.32	CCOHS, 2003
	47	316	14.9	McCormick & Maki, 1981:929
	1	38	2.63	Reli et al., 2002:206
	396	3 303	12	Shah et al., 2005:775
Total & average %	859	6940	12.4	
Auxiliary workers Housekeeping	1193	6 384	18.7	Albertoni et al., 1992:540
	55	316	17.4	McCormick & Maki, 1981:929
	2	38	5.2	Reli et al., 2002:206
Total & average %	1250	6738	18.5	
Medical students	21	427	4.9	CCHS, 2003
	69	98	70.2	Karstaedt & Pantanowitz, 2001:57
	59	417	14.1	Norsayani & Noor, 2003:172
	122	385	52	Resnic & Noerdlinger, 1995:155
	271	1327	20.4	
Total & average %	271	1327	20.4	
Nursing students / other health students	24	343	7	Lymer et al., 1997:226
	38	274	13.9	Smith & Leggat, 2005:449
	89	121	40	Weber, 1998:32
Total & average %	151	738	20.5	
Surgeons	3937	7 172	54.9	Albertoni et al., 1992:540
	22	38	57.9	Reli et al., 2002:206
	3959	7210	54.9	
Nursing Assistants	4785	14 157	33.8	Albertoni et al., 1992:540
	105	343	30.6	Lymer et al., 1997:226
	45	316	14.3	Mccormick & Maki, 1981:929
	4935	14 816	33.3	
Total & average %	4935	14 816	33.3	
Other staff	17	427	3.98	CCOHS, 2003
	3	343	0.9	Lymer et al., 1997:226
	26	316	26.2	Mccormick & Maki, 1981:929
	46	1086	4.2	

2.4 Activities related to needle stick injuries

The majority of incidents occurred while drawing blood, inserting an intravenous line or cleaning up after these procedures. Unexpected patient movement during the procedure and accidental injury by colleagues is also mentioned as activities related to needle stick injuries. Issues related to the handling of the needle such as, withdrawal, recapping and disposal of the needle as well as opening of the needle cap also contributed to the injuries (Karstaedt & Pantanowitz, 2001:57; Marais and Cotton, 2002:14, Shah, Bonauto, Silverstein & Foley, 2005:775; Smith & Leggat, 2005:449; www.ccohs.ca/oshanswers/diseases/needlestick_injuries.html).

Recapping (21.3% - 45%) was noted as the most frequent reason given (Azap, Ergonul, Memikoglu, Yesilkaya, Altunsoy, Bozkurt & Tekeli, 2005:48; Shah, Bonauto & Silverstein & Foley, 2005:775). Unexpected patient movement accounted for 23 - 29%, disposal injuries - 23.7%, cleaning of instruments - 18.2%, surgical and suturing procedures - 16.7 - 24%, administering of injections - 12.7 - 23% and drawing of blood for 10% of the injuries (Adegboye, Moss, Soyinka & Kreiss, 1994:27; Karstaedt & Pantanowitz, 2001:57; Shah et al., 2005:775).

2.5 Organisational climate contributing to needle stick injuries

Karstaedt & Pantanowitz (2001:60) states that inexperienced interns i.e. within the first four months of their training are at a higher risk to injury. This was supported by Allen (2003) who stated that good experience [good skills] lowered the chance of sustaining an injury. Hamory (1983:175) states that length of employment also increases the risk of needle stick injuries and claim that there is a significant increase in risk in individuals who were likely to work in a hospital for less than two years.

Unknown (1992:640) states that needle stick injuries among medical students and junior housemen were highest during the first year of employment.

The factors that contributed to the high incidence included long hours, post call or after hours, inadequate resources and equipment, inexperience staff, inadequate training, low staffing levels, [unpleasant] working climate, specific working habits (Allen, 2003; Marais & Cotton, 2002:14, Nsubuga & Jaakkola, 2005:773). Strict compliance with universal precautions does not solely contribute to the reduction in needle stick injuries (Karstaedt & Pantanowitz, 2001:57).

2.6 Implications of needle stick injuries

2.6.1 Risk of contracting blood born pathogens

The risk of acquiring a blood born pathogen via a needle stick injury is a serious problem and it is estimated that approximately three million health workers are exposed to blood born viruses due to percutaneous exposures. More than 50 pathogens have been identified as blood borne pathogens. Hepatis B (HBV) still carry the highest risk and it is estimated that 66 000 workers are infected each year. Hepatits C (HCV) infects about 16 000 workers and HIV between 200 – 5000 (Kermode, Jolley, Langkham, Thomas & Crofts, 2005:34). The scientific estimate for the possibility of transmission of these blood borne illnesses are six to 30% for HBV, 0 – 7 % for HCV and 0.3% for HIV (Tarantola, Golliout, Astagneau, Fleury, Brucker, Bouvet & CCLIN, 2003:357;NIOSH, 2000)

2.6.2 Psychological implications of a needle stick injury

The emotional experiences that occur after a needle stick injury is mostly fear, anxiety and emotional ambivalence (Lee et al., 2005:117, Ncama & Uys, 2003:11). In addition can one apply the stages of grief to this emotional process that the health worker experience. These stages have been defined as:

Denial and isolation – Most people will use this process as a temporary shock response to bad news such as “I have just pricked myself with a needle and it could be from a patient who is HIV positive”. People often move past this initial response but may return to this stage when they try to tell themselves that the “origin” of the needle stick injury did not look like a candidate who could be HIV positive.

Anger – their anger can be expressed in several ways, against God, against the patient, against a colleague, against the procedure or even the reporting procedure.

Bargaining – this is a brief stage and is not commonly expressed to a third person as the bargaining is usually between the person and God.

Depression – refers to the mourning of loss. The patient can mourn possible loss of relationship between her and her partner, or possible job loss if she should sero convert, or the possible loss that her children may grow up without a mother. It could even refer to the possible loss of status in the community and the possible discrimination that she may experience from her colleagues. Debnath (2000:853) refers to the fear for professional discrimination, punishment and possible job loss in a review on how to improve the reporting of sharp injuries.

Acceptance – do not literally refer to a “happy stage” of acceptance and is often a stage void of feelings. Thus a numbness and emptiness of emotion is present. It is important to note that “hope” is an important phase of all the processes (<http://www.uky.edu/Classes/PHI/350/kr.htm>).

Fear is also a psychological factor that occurs after a needle stick injury. The fear can be about the results or about the outcomes of the results. The time period following a needle stick injury is extremely stressful and associated with fear. This period is referred to as the window period (Moody, 2002:12). Reuter & Northcott (1995:497) stated that the time it took to confirm whether the exposure resulted in contracting the Human Immunodeficiency Virus can take between five to 26 weeks. In other words the period it takes for the HIV antibodies to be present in the health worker's blood after exposure to HIV positive blood. This waiting period to know whether or not sero-conversion took place is a very uncertain time period and adds to the emotional turmoil of the client's psychological well being. Other fears could be related to the responses of colleagues when the information becomes known. Often the person can be ridiculed by her colleagues or could be seen as being silly or over reacted (Debnath, 2000:854).

Anxiety is high among health workers who did not receive adequate information or received wrong information at the workplace around the post exposure prophylaxis or actual risk of acquiring the infection following the injury (Birdshall, Hajjiannis, Parker, & Nkosi, 2004:1). The rapid test also cause anxiety among health workers because they have to weigh up the benefits of knowing their own HIV status as the test is recommend directly after the injury to determined the persons status (Reutter & Northcott,1995:493). Other factors contributing to anxiety are the costs involved of

the illness, untraceability of where the used needle was utilised, and confidentiality (Meisenhelder, 1997:323).

Gershon, Flanagan, Karkashian, Grimes, Wilburn, Frerotte, Guidera & Pugliese (2000b: 425) reported on specific psychological disorders that might develop after a needle stick injury. These may include disorders such as post traumatic stress syndrome, depression and insomnia.

2.6.3 The implications of needle stick injuries on friends and family

Some health workers felt confident that their family and friends would support them if they were occupationally [needle stick] exposed to HIV (Meisenhelder,1997:321). Gershon et al., (2000a:425) found that married health workers were confident to share the incident with their partners but unmarried health workers found it difficult to confide in their family. On the other hand there is some evidence that married people also found it difficult to confide in their families. "Telling my family about my illness has been the most difficult..." (Black, [Sa]) or "I debated whether I should tell him..."(McCusker 2002). Family and friends react differently to the person that has been injured, but the majority are upset, worried, anxious and concerned or even "feeling stunned". Exposed health workers also have to deal with issues impacting on their sexual relationships "I was afraid to have sex with my spouse...I refused to have sex for four months..." (Gershon et al., 2000a; 423). Doctors felt a sense of responsibility towards their family and some will start using condoms (Moody, 2002:81).

2.7 Reasons for reporting a needle stick injury

An extensive search was done on reasons why health workers report needle stick injuries. Hardly any information could be found despite this extensive search. This once again emphasized the reason why the researcher was stimulated to find out why health workers report needle stick injuries. There appear to be a culture of silence pertaining to the reporting of needle stick injuries (Elmiyeh, Whitaker, James, Chahal, Galea and Alshafi, 2004:326).

The most common reason of why health workers report a needle stick injury is because it is part of institutional policy (Resnic & Noerdlinger, 1995:75). Eholie et al., (2002:366) stated that health workers thought that reporting is mandatory, thus they did it because of their knowledge of the institutional policy and not because of a personal reason. Debnath (2000:853) refer to a possible reason such as the “risk state of the client”. He reported that a reason why surgeons report a needle stick injury is when they perceive the exposure to be a high risk. In other words, when the source was at high risk for a blood born infection such as HIV or hepatitis.

2.8 Reasons for not reporting a needle stick injury

The literature is over reported with articles on reasons why needle stick injuries are not reported. Eholie et al., (2002:366) found that although most health workers thought it was mandatory to report the exposure to blood they choose not to report it due to lack of confidentiality during the process of reporting. Mangione, Gerberding & Cummings (1991:85) support the issue that health workers are concerned about confidentiality when reporting injuries.

Some of the reasons given for not reporting needle stick injuries were:

Time constraints / opportunity (Mangione et al., 1991:85; Haiduven, Simpkins, Phillips & Stevens, 1999:151; Ayranci & Kosgeroglu, 2004:219)

Lack of time / time consuming (Mangione et al., 1991:85; Hamory, 1983:175; Shiao et al., 1999:254)

Low exposure risk / not worth reporting (Mangione et al., 1991:85; Hamory, 1983:175; Haiduven et al., 1999:151)

Stigmatisation (Mangione et al., 1991:85)

Professional discrimination (Mangione et al., 1991:85)

Not aware of policies (Hamory, 1983:175; Haiduven et al., 1999:151; Ayranci & Kosgeroglu, 2004:219; Shiao et al., 1999:254)

Program instituted to address needle sticks is burdensome (Haiduven et al., 1999:151)

Lack of perception of risk (Haiduven et al., 1999:151)

Indifference or disinhibition towards own health (Rabaud, Zanea, Mur, Bleach, Dazy, May & Guillemin, 100:562; Ayranci & Kosgeroglu, 2004:219)

Reluctant to report for fear of not appearing professional or diligent (Ayranci & Kosgeroglu, 2004:219)

Those who have been injured before were less likely to report

2.9 Factors that can improve needle stick injury reporting

2.9.1 Training

There is evidence that the number of needle stick injuries are less and the reporting thereof seems more frequent, where workplace programmes that emphasise universal safety precautions and raising awareness around the value of reporting a

needle stick injury are in place (Bandolier, 2003:11; Wang et al., 2003:193; Richard, Kenneth, Ramaprabha, Kirupakaran & Chandy, 2001:165).

2.9.2 Post exposure prophylaxis

Tarantola et al., (2003:361) reported an increase in the reporting of needle stick injuries in France after the Ministry of Health announced the availability of “free, around the clock” post-exposure prophylaxis in 1996 while Shiao, McLaws, Huang, Ko & Guo (2000:254) stated that post exposure follow up protocols increased reporting.

2.10 Initiatives to reduce needle stick injuries

The WHO (2002b) in collaboration with other international organisations, piloted a toolkit providing technical and political guidance, in the form of a behaviour change strategy, to all role-players to promote safe injections. There are specific countries like South Africa, Tanzania, Vietnam and Egypt where existing nursing organisations, non-profit organisations and occupational health structures are utilised to promote safe needle practices. Workplace education programmes both decrease the incidence of needle stick injuries as well as increase the likelihood of it being reported. Recent studies looking at the impact of workplace education programmes, to decrease the incidence of needle stick injuries, mentioned the following as crucial elements in a programme to achieve this:

The introduction of workplace education programmes and safe equipment
(Richard et al., 2001:163).

An organisational culture and climate to promote safety as perceived by health workers and enforced by leadership styles, institutional goals and

organisational safety policies, norms and practices (Gershon et al., 2000b:215).

2.11 Legislation regarding needle stick injuries

2.11.1 International Legislation

An historic moment was recorded in The United States of America in November 2000 when President Bill Clinton signed the Needle stick Safety and Prevention Act. The law protects employees in the health care environment that are exposed to blood-borne pathogens. This is done by compelling employers to comply with the blood-borne standard regulating occupational exposure as issued by the Occupational Safety and Health Administration in 1991. The act made provision for the following additional information to be added to the sharp injury log:

The type or brand of the device used in the incident.

The department or work area where the exposure took place.

“An explanation of how the incident took place.” (USA 2000).

The law makes provision for non-managerial health staff involved with direct patient care to provide input in the Exposure Control Plan in selecting effective equipment and safe practices. The Bill also addresses the following:

Making provision for the protection of employees in the health sector who are at risk of being exposed to infections resulting from needle stick injury.

Formulating the requirements for the recording and reporting of individuals who were exposed to needle stick injuries at work.

Establishing standards for the equipment used in activities where there is risk of injury and possible infections due to the injury.

Rey, Bendiane, Moatti, Wellings, Danzinger, MacDowall & Europe study group (2000:695) reported on the guidelines in 27 European countries around post-exposure prophylaxis (PEP) after occupational and non-occupational exposure to the HIV. These guidelines make provision for the individual risk assessment and the severity of the type of exposure to provide the health worker with the appropriate post-exposure regime. Ongoing educational programmes, awareness programmes around risks in the environment, using universal precautions, as well as the availability of prophylaxis following the exposure, complement existing workplace policies and are the comprehensive strategy have been suggested by the International Council of Nurses (ICN) to decrease the impact of needle stick injuries amongst health workers (ICN 2003, UCT [Sa]).

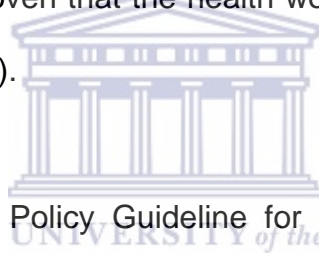


2.11.2 National Legislation and policies

Panas and Begley (1998:38) stated that the South African health worker is at a high risk of exposure to seroconversion as they work with a great population of patients that are infected with HIV. Despite this increased risk South Africa still have no needle stick injury law (Hoskin, 2000). The Occupational Health and Safety Act compel employers to establish a safe working environment for employees. Regulation 390 of the Department of Labour specifies the employer's responsibility in providing a safe environment to limit exposure to blood-borne organisms through appropriate awareness raising, training, ensuring the use of appropriate equipment and monitoring the process of application for compensation, in the event of an occupationally acquired disease. Within the workplace policy and in line with the requirements for claiming compensation under the Compensation for Occupational Injuries and Diseases Act (COIDA), it is compulsory to do a HIV baseline test to

prove the HIV has been acquired in the workplace. At the time of the incident, the blood test to establish the presence of antibodies in the body, manufactured in reaction to the HIV, will not react positively. It takes a time period of three to six months for the body to form these antibodies; this is known as the window period. In the event of a health worker refusing to have a test, no compensation would be paid out should the individual develop a blood-borne condition (Panas & Begley, 1998:40).

The National Occupational Health and Safety Directorate provide the structure for safety in the workplace on a provincial level. Following the occupational exposure, compensation only becomes payable when the individual become too ill to work. The Compensation Commission will only consider compensation for occupationally acquired HIV if it can be proven that the health worker was HIV negative at the time of the injury (Evian, 1998:17).



The Department of Health Policy Guideline for the management of occupational exposure to HIV (2000) provides guidelines in managing the exposure, and issues regarding compensation should the health care worker acquire HIV. Within each province a co-ordinator is appointed to manage the occupational exposure to HIV.

The policy addresses the risk involved in contracting the HI virus, and identifies those conditions that increase the likelihood of contracting the infection. The following circumstances increase the risk of acquiring a blood- borne illness:


The needle stick injury is deep

There is visible blood on the needle causing the injury

The causative needle was previously placed in the source patient's vein or artery

The source patient has Acquired Immunodeficiency Syndrome (AIDS).

The policy further explains that injuries from solid needles such as suture needles, carries a smaller risk than hollow bore needles used for injection and intravenous therapy. The protection of health care workers from the HBV is a separate national policy that advocates the use of universal precautions where all patients are considered as having the blood-borne pathogen. Health institutions must also provide passive immunisation by providing immunoglobulin. Supportive counselling must be made available to all health workers, and barrier methods for safer sex are recommended. The policy stresses that a confidential reporting system documenting all details of the health worker and source patient should be kept for medico-legal and insurance claims.



2.11.3 Western Cape Provincial Department of Health Protocol for the management of staff at health care facilities following an accidental needle stick injury or the exposure to blood and blood stained fluids

This document provides guidelines at a workplace level, of the steps to be taken in the event of a health worker being exposed to a needle stick injury whilst performing their duties.

The policy advises the injured health worker to encourage bleeding of the injury by manually squeezing the injured area. The health worker should thereafter wash the area with soap, salt water or spirits. The health worker is to report the incident to the person in charge who will ensure that the manual bleeding and washing of the injured area took place. The person in charge should inform the immediate care area, which

could be the medical emergency department or the staff clinic immediately. The health worker completes a Percutaneous Inoculation Form (P.I.F.) -Appendix 1.

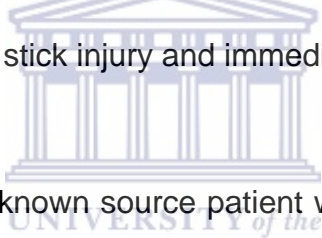
The P.I.F. contains the following information:

Details of the health worker.

Place where the injury took place.

Source patient details (if known who the needle was used on) that needs to be completed by the doctor or the Registered Nurse in charge of the patient. The status with regards to the source patient is also recorded for the HBV, HIV and the HCV.

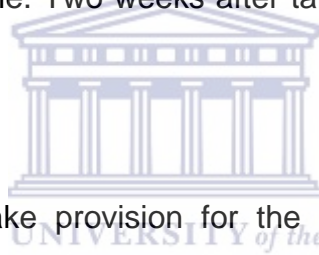
The actual activities the health worker was involved with during the process of sustaining the needle stick injury and immediately there- after.



The doctor in charge of the known source patient will explain to the patient the need to know their status around HIV, HBV and HCV and request consent to do so. Pre-test counselling will be provided to the source patient. The doctor in the immediate care area will check if all the forms have been completed. The health worker will be counselled and bloods will be taken for HIV, HBV and HBC. The doctor then has to call the Virology Registrar at the laboratories to arrange coded bloods to ensure confidentiality. If it is a female health worker it should be confirmed that she is not pregnant. The health worker is to be offered Post-Exposure Prophylaxis that ideally should commence 1 to 2 hours after the injury. The health worker is then referred to the staff support clinic for further counselling and management.

The Virology Registrar should telephonically report the results to the doctors in charge of the source patient, or the Staff Clinic as it becomes available. A printed copy of the results is to be sent to the staff clinic as soon as possible.

The reporting of a needle stick injury is a confidential process and staff may take legal action should this not be adhered to. The health worker should be appropriately counselled should it be found that the source patient has a blood-borne infectious illness. Should the source patient be negative for HIV, the health worker can be advised to either stop or continue with the prophylaxis. The health worker should be tested for the HI virus at six weeks, three months and 6 months. Before the health worker commences anti-retroviral prophylaxis, the full blood count, liver and kidney function tests should be done. Two weeks after taking prophylaxis another full blood count should be done.



The workplace policies make provision for the administration of Post- Exposure Prophylaxis (PEP) within one to two hours after the incident and up to 14 days if it carries a high risk. The tablets should be taken for a whole month (Department of Health, 2000:3; Rey et al., 2000:696).

2.12 Summary

Needle stick injuries can cause emotional turmoil in the life of a health worker. The risk of exposure to a needle stick injury is the highest under nurses. There are personal and workplace factors that can increase the risk of a needle stick injury. Although very little information is available on why health workers report needle stick injuries it appear that the major reason is because it is compulsory by work place

policy. Most literature has explored the reason why needle stick injuries are not reported as it is estimated that more than half of the injuries are not reported. Some of the reasons refer to the burden of the process to report the incident. Most countries have instituted policies on the managing of occupational injuries. Training of health workers on the risk and the importance of reporting the incidence may improve the current reporting rates.



Chapter 3 Methodology

3.1 Introduction

In this chapter the choice of research methodology and the data collection method is discussed. The researcher aims to understand the reasons why health care workers choose to report the needle stick injury after exposure in the workplace. An explorative qualitative research design, with a phenomenological approach, was used to address the overall aim and objectives of this project. The data collected would thus serve as evidence in understanding the reasons why health workers reported a needle stick injury and how they felt about the incident.



3.2 Qualitative research

Qualitative research "Is concerned with understanding the processes, which underlie various behavioural patterns. "Qualitative" is primarily concerned with 'Why' ("metro. newsmedianet.com.au/home/Glossary.jsp). Baumgartner and Strong (1998:174) refer to qualitative research as the "umbrella term" for research that describes and explores phenomena as it occurs in its natural environment. It usually request answers to the question of "why" and refers to detailed verbal descriptions of experiences or settings and is usually based on opinions rather than numbers. Using a qualitative approach allows the researcher to seek understanding through loosely structured conversations. These "data" interpretations are usually subjective in nature, and may seek to understand the motivation of why health workers report

needle stick injuries. The emphasis is on the quality and depth and not into the amount or frequency. Data is usually collected through interviews.

3.3 The phenomenological approach

Janesick (1998:6) acknowledges that theory influences all aspects of the research process. The phenomenological approach explores the “lived experience” of individuals and the reasons why they reported a needle stick injury (Holloway, 1997: 116). The phenomenological approach best supports exploring the perceptions and thoughts, as well as interpreting the act of reporting a needle stick injury in the workplace, from those individuals who were willing to share their experiences (Bailey, 1997:39; Wilding, May & Muir-Cochrane, 2005:3).



3.4 Aim and objectives

As stated in chapter one the primary aim of the study was to explore why health workers opted to report the phenomenon of an occupational needle stick injury. The primary objective was to determine the reasons why health workers reported needle stick injuries and the secondary objective was to explore their experiences regarding issues related to the needle stick injury such as “how they felt when reporting the accident?” In conclusion the last objective would be to write a report that can be used to motivate other health care givers to report a needle stick injury.

3.5 Research problem

From the researcher observations and literature is it clear that needle stick injuries is a under reported phenomena. There are many reasons stated in the literature of why health workers do not report injuries. The question that arises is “why does health workers report needle stick injuries and what are the factors that contribute to their decision to report the exposure.

3.6 Research setting

The study took place at a secondary hospital in the Cape Metropole Health District. The setting was chosen because needle stick injury is a phenomenon that occurs in this hospital.

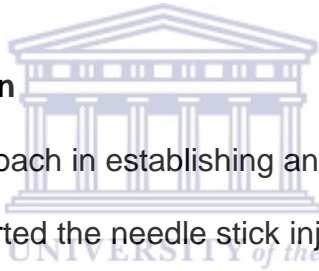


3.7 Research procedure

The researcher was confronted with the question of “why does health workers report needle stick injuries?” The researcher was further concerned about the feelings that people experience when they do accidentally injured themselves with a needle. A literature search was done to establish if information is available in the literature to answer these questions. Ongoing reading took place after every interview to verify the verbal expressions of the participants. A final review of the literature was done to make final conclusions and summaries regarding the interpretation of the data. After submitting and approval of a proposal to the ethical committees of the academic institution as well as the health facility did the researcher commence with the data collection process. Permission was requested from the health facility to contact all categories of health workers who reported a needle stick injury during the past three

years. The management informed the health workers at their departmental meetings and no objections were noted. The nursing manager of the health facility provided a name list to the researcher. This list had the name of the person who reported an injury as well as the division where the needle stick injury took place. The departments were telephoned by the researcher to make contact with the possible participants. The health worker was informed that the management granted permission to contact them for participation in a study about needle stick injuries. Thereafter they were told that the verbal exchanges during the interview would be recorded, if they agreed to it. The interview was scheduled during the tea or lunch break in the work area.

3.8 Data collection



The phenomenological approach in establishing an understanding of the behaviour of the health worker, who reported the needle stick injury, can best be achieved through conducting a recorded interview (Bailey, 1997:41). The phenomenon of the health workers who reported a needle stick injury will be explained by the data that has been collected through a semi-structured interview, which will serve as evidence in understanding why the injury was reported (Mason, 1997:139). A semi-structured interview allow the researcher to structure the interview methodological, but leave opportunity for probing if the researcher needed more in depth information. In other words not all the questions are created up front, thus leaving flexibility for more questions.

The questions were exploratory in nature and required explanatory and descriptive responses from the participants. The responses were collected in the form of words -

description of events, situations as well as non-verbal responses and people. This method of data collection takes into consideration the personal characteristics of the interviewer as well as the language with which the participants are expressing themselves (Denzin and Lincoln, 2003:48). The researcher has a background as a health worker, and converses in the languages that the participants were using to tell their experiences. The researcher was familiar with the technical and social language the participants used.

The researcher, through observation and enquiry of the health workers who agreed to participate, acted as the primary research instrument in recording what happened, from the health workers frame of reference. Answers were confirmed to ensure two-way communication. Alreck and Settle (1995:218) points out the importance of the process of communication, when a researcher collects information through conducting an interview, and therefore the researcher should be skilled in the art of conducting objective interviews. The data collection happened between September and December 2004.

3.9 The data collection tool

The semi-structured interview schedule was used as the tool to gather the verbal and non-verbal responses of the selected health workers who had reported a needle stick injury. To justify the use of the semi-structured interview (Lacey & Luff, 2001:22), it can be argued that it allows enough scope to inquire and explore from each participant the reason why they reported a needle stick injury. Robson (1993) suggests that the qualitative semi-structured interview allows the researcher more

freedom in the sequencing of the questions and in the amount of time spent on a particular topic during the interview.

The researcher sought permission from all participants, to record the verbal exchange during the interview, and for those participants who did not give consent, permission was sought to write notes during the interview.

All participants receive the same set of introductory questions as suggested by Creswell, (1998) and Robson (1993) and listed below.

How long have you been a nurse/ household staff/ operator?

How long have you worked in the department?

Do you still remember what happened when you sustained a needle stick injury? (To elicit experiences).

Why did you report the needle stick injury? (To elicit reasons)

Each question then had spontaneous probing to get more in depth information.

Exploratory questions focussed on why health workers reported the needle stick injury. Some additional causal exploratory questions that were used were as follows:

Did you think of not reporting the injury?

Why did you decide to report the injury?

Do you know why other health workers do not report the injury?

If you did not report an injury in the past,- why did you report this injury?

3.10 Advantages and disadvantages of the semi-structured interview

As a data collection tool, the semi-structured interview enabled the researcher to adapt the line of questioning according to the responses of the interviewee. The non-

verbal as well as the verbal responses were observed and recorded. King (1994:15) describes how the researcher is also a tool in the qualitative interview, in that the relationship that forms between researcher and interviewee is part of the research process. The researcher is skilled in the conducting of interviews with individuals who are experiencing emotional problems. The nature of the topic requires sensitivity to not only what the health workers related, but also how they related their experiences.

The researcher thus constantly partakes in the process by adjusting the questions according to the interviewee's responses. During the interview the researcher could prompt the issues that were raised by the health workers. The face-to-face interaction during the semi-structured interview allowed the researcher to modify the line of enquiry to follow interesting responses by the health worker (Robson, 1993). The process needs an individual who is skilled in interviewing and able to adapt to the responses of the respondent (Baumgartner & Strong, 1998:182; Creswell, 1998; Janesick, 1998:29; Robson, 1993). The process could also be time-consuming and can vary in length, depending on the individual responses.

3.11 The population and sample

A list of 89 health workers with exposure to blood and other body fluids between the 4th of August 2001 and the 31st of August 2004 was supplied by the staff occupational health clinic. The target set for the study was ten interviews. The sampling method was purposive in the sense that individuals from the given list who gave consent participated (Holloway, 1997: 142).

The eligibility criteria for participation were as follow:

All categories of health workers working at the facility who reported a needle stick injury to the Personnel Health Services.

The time period for the reporting of the injury was from August 2001 to August 2004.

The cause of the injury should specifically be any type of needle stick injury.

3.12 Debriefing

The exploratory approach opened up the possibility that health workers might have experienced emotional distress after their injury. The researcher explored the emotional feelings with care and was not confrontational in the instances where health workers expressed having done something that they usually would not have done (Holloway, 1997: 55). The interview might be the only structured reflective exposure the health care workers had after reporting, and care had to be taken in making the experience as non-threatening as possible.

3.13 Validity and trustworthiness (reliability)

Validity refers to whether the data collection tool will actually reflect the reasons why health workers reported the needle stick injury (King, 1994:31; Robson, 1994). Winter further clarifies that validity is not just applied to the tool used to measure the phenomena, but it is entrenched into every aspect of the research. The questions asked of the health workers, pertained to their experiences around the needle stick injury in the workplace, and the exploration of concepts that they used to relay their experiences.

With regards to validity in the aspect of the skill of the researcher in conducting an explorative interview (Krefting, 1991); the following is of note regarding the researcher: The researcher was experienced in conducting explorative interviews and could clarify responses that seemed ambiguous. Validity was further ensured by intensive listening to the health workers relating their experiences the researcher. The researcher did all the interviews and data collection and transcription herself. She also spoke the same language as the participants. She was able to understand and have empathy for their experiences as by virtue of having a background as a health worker in a similar environment. Notes were made during the interviews and data recorded where permission to record the interview was given. The researcher kept reflective notes and data was transcribed soon after the interview. The period of data collection stretched over four months, and time was spent in reviewing the interviews. The proceedings of the study were discussed with peers and academics in the area of health research, to invite objective input into the research design and practicalities as well as the questions that was used in the semi structured interview

Guba's model for qualitative research design, to evaluate the process of the research design, took the criteria from conventional research and adapted it to accommodate research done in the naturalistic paradigm. (Krefting, 1991; Lincoln and Guba, 1985).

The four criteria, with reference to traditional research, are as follows:

Internal validity / truth-value or credibility – refer to the study ensuring that subjects are accurately understood and data accurately recorded and interpret. The researcher clarified the information given to her by the participants to ensure that it was correctly understood.

External validity / generalizability / transferability - refer to the extent to which a reader may apply inferences to other situations where health workers obtained needle stick injuries. The small purposive sample in this study places a limitation on the external validity, in that it is not an accurate representation of all health workers who reported a needle stick injury. Despite this limited generalizability can it be deduced that the information can assist in giving some reasons on why needle stick injuries are reported

Reliability / consistency / dependability (Krefting, 1991) – this refers to the meticulous recording and taking of notes during and after the interviews with participants and using the same technique in conducting the interview, so that it is possible to replicate the process with similar health workers who reported a needle stick injury in another setting. The researcher used the same major questions in the semi structured interview but use additional question as the conversation required. Data was transcribed and analysed as soon as possible after the interview. All interviews were read every time a new interview was added and literature was reviewed to substantiate the information.

Objectivity / neutrality / conformability - The researcher kept a diary with her reflexive thoughts which enabled her to stay neutral when probing into the reasons and experiences of the respondents.

The systematic, consistent collection of data with a credible data collection tool such as the semi-structured interview schedule was a way to ensure trustworthiness of the research process (Shannon, 2003). The use of a tape recorder and immediate recording of events and perceptions after an interview that was not recorded,

contributed to the trustworthiness of the data collection process. Furthermore listening to the recorded interview and reflecting on how the researcher approached and responded to interviewees further enhanced the trustworthiness of the data (Shannon, 2003).

3.14. Analysis

The verbal responses of the notes and the transcribed interviews were captured onto a master file Microsoft Word document soon after each interview. Observations of non-verbal cues were also documented during the interview. A colour code index via “highlighting” of the phrases was used to identify the different categories / themes that were formed. A secondary document was then made where the verbal expressions were arranged into categories that were identified. Themes were added until saturation was met (De Poy & Gitlin, 1994: 275). The themes were then compared to the available literature around the experiences of health workers who sustained a needle stick injury and reported it (Lacey & Luff, 2001:4). The relationships between the feelings health workers had, the reasons offered why they reported it, as well as how it impacted on their work habits, was explored. (Lacey & Luff, 2001:4). These aspects will be discussed in chapter four.

3.15 Limitations

Due to various reasons described in chapter four, the target of ten respondents were not reached. Thus it is accepted that the results cannot be generalised to other health environments, but can give the reader some idea of what the reasons are why health workers report needle stick injuries and can some idea about the feelings they

experience. The resources in terms of time, health worker availability, and researcher ability, were also limited as both parties have full time occupations. The biggest obstacle was the mobility of the health workers and the people whose names were on the list could not be traced successfully. Furthermore, those few who consented to participate were pressured for time and did not want to sit for a lengthy interview. As the researcher had to use the specific group of people, she could not find more participants as the resources were limited (name list provided).

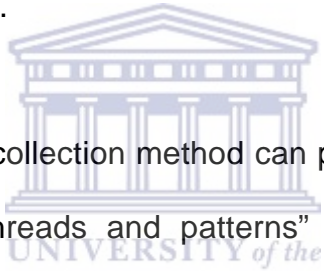
3.16 Summary

Chapter three reviewed the available literature to support the methodology of the study to ensure that the problem under investigation was properly evaluated and described. The qualitative phenomenological approach accommodates exploring of the reasons why and the individual experiences health workers experienced when they reported their needle stick injury. The semi structured tool as method of data collection allows for the exploration to develop an understanding why the individual health workers report the injury as well as factors influencing the decision to report it. Data were analysed according to themes that emerged from the interviews. The validity and trustworthiness of the process added to the quality of the project.

Chapter 4 Results

4.1 Introduction

In this chapter the verbalised experiences of the health workers who were interviewed are discussed. The phenomenological explorative qualitative study design allowed the researcher to discover the reasons why health workers reported a needle stick injury and described the feelings they experienced (Bailey, 1997:39; Wilding, May & Muir-Cochrane 2005:3). In exploring their individual experiences the researcher was further able to identify the significant factors that contributed to the action of reporting the injury.



Using interviewing as data collection method can present profiles of individuals and can identify “connecting threads and patterns” that could be seen as themes Seidman (1998:107). Each interview has been transcribed and analysed soon after the interview. The same themes identified from the first three candidates were similar in all the following interviews and no new themes emerged after the third interview. The sample regarding new themes reached saturation early during the analyses phase.

4.2 Method of analysis

Firstly we described the demographic data of the participants and the circumstances under which the injury occurred. Thereafter we described the reasons why they reported the incidents and the participants’ experiences related to

the incidence. Some of the health workers also reported why they did not report previous injuries. The themes that emerged that were categorised. Literature was consulted after every interview to relate the information to relevant literature.

Only one theme was identifiable which relate to where and how the incident occurred. All nine incidents were categorised under the “safety climate” of the work circumstances.

Themes on why health workers report injuries were:

Policy and claim compensation

Risk of contracting a blood born disease

For own health reasons

For safe mind of family



Themes regarding their experiences that emerged were:

Fear

Anxiety / stress

Emotional disturbances

Denial and isolation

Anger

Depression

Acceptance / numbness

The implications for friends and family were also identified as a theme.

Themes why they did not report previous injuries were:

Policy burden

Professional discrimination

Low or unknown risk of patient

4.3 Description of participants

The hospital management supplied a list with the names of 89 health care workers to the researcher. The request was for a list with names of people exposed specifically to needle stick injuries. This was not possible and the list contained names of health workers that were exposed to an occupational injury. The injuries occurred during the period from August 2001 to August 2004. The list had the names of the health care worker, category of staff as well department where the injury occurred. The list did not mention the type of injury or exposure that occurred. The occupational staff health clinic did not distinguish the needle stick injury from the rest of the exposures as requested in the permission sought from the head of the institution to conduct the study.

The concept was to investigate issues around needle stick injuries. During the initial telephonic contact the researcher informed the health worker that the purpose of the study would be to explore the experience of health workers who reported a needle stick injury. In spite of this, three health workers who consented to participate only disclosed as the interview progressed that they in fact had other types of exposures. During the interviews of participants four, five and eight it emerged that these participants did not experienced a needle stick injury but other

related occupational injuries such as: cut by a piece of glass, bitten and saliva spit in the participant's face. The researcher felt that it would be wrong not to continue with the interviews as the participant already started to participate in the interview and only disclose later on that it was not a needle stick injury that was reported. During the analyses of the interviews it became clear that these participants gave similar reasons of why they reported their incidence and they also experienced similar feelings than those who were injured by a needle stick. For that reason were their interviews included in the analyses.

The list contained the names of 89 people. Twenty-seven of the 89 (30.3%) were doctors. Of these only two were contactable, one refused to participate. He indicated that he was too busy in theatre to participate and dropped the telephone midway through the conversation, when the researcher attempted to request time to make an appointment. The other 25 doctors were no longer working at the hospital.

The majority of the people who reported injuries were nurses 56 (62.9%). Thirty-five of the nurses (all categories) could not be contacted. Three of the nurses were from a nursing agency and the policy of the agency with regards to information of the staff did not make it possible to get hold of them. Although several messages were left at the agencies requesting them to ask the listed health workers to contact the researcher, the nursing agency never came back and not one of the health workers contacted the researcher. Only six of the 21 that were contacted agreed to participate in the study.

A total of six people were classified as general workers. Four of the six were contacted and only two of the four agreed to participate in the study.

The majority of the people could not be contacted due to the issue that doctors / interns and student nurses had rotating schedules between institutions and had an average of six months stay at the secondary hospital level. Some of the permanent staff that had left the organisation and did not have a contact telephone number. Those who were contacted, but refused to participate was usually too busy to offer up some time for an interview.

Table 4.1 The availability of health workers on the supplied list:

Category health worker	Doctors	Nurses	General	Total
Total number (#) on list	27 (30.3%)	56 (62.9%)	6 (10.7%)	89
Total # not working at the hospital anymore or no contactable information	25	35	2	62
Total # contacted	2	21	4	27
Total # that refused to participate	1	15	2	18
Total # that participated	1	6	2	9

Literature reviewed showed that the incident of needle stick injuries is the highest under surgeons (54.9%), followed by professional nurses (36.2%) and assistant nurses (33.3%). General or housekeeping people were also at risk for needle stick injuries and the incidence recorded is 18.5%. (Table 2.1). In this study the incidence according to the list that recorded occupational injuries related to body fluid was highest under the nurses (62.9%). The incidence under the doctors was 30.3% and it was 6.7% for general workers.

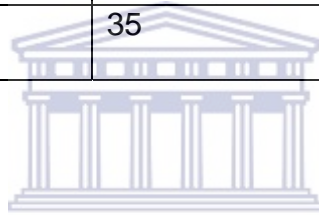
The sample consisted of nine participants within the following categories.

General workers	2
Enrolled nurse	1
Doctor	1
Enrolled nursing assistant	1
Registered nurses.	4

The gender distribution was eight females and one male and their ages ranged from 24 to 53 years. Seven of the participants were employed for longer than two years when the injury occurred and the range of employment was between 1 – 20 years, with one injury occurring while the student was in her sixth year of medical undergraduate studies. Karstaedt & Pantanowitz (2001:60) stated that injuries are more common in the beginning months of medical student's internship. Most of our participants had been in their working environment for more than one year. Allen (2003) and Hamory (1983:175) state that the length of employment plays a role in the incidence of needle sticks injury and that health workers who are employed for less than two years have a higher incidence of injuries.

Table 4.2 Gender, age and years of employment distribution:

Participant	Gender	Age	Years employed at time of injury
1	F	24	3
2	F	51	3
3	F	37	14
4	F	27	Student
5	F	43	15
6	M	36	1
7	F	53	20
8	F	Mid 40	20
9	F	35	14



4.4 Description of where and how injury occurred

The Catastrophe model that was used for a theoretical framework during this project refers to symptoms of depression within the health worker and shift work that could be seen as major predisposing variables that increase the risk of being exposed to an occupational injury. The majority of the injuries reported in this report occurred on a straight day shift and none of the participants spoke about any depression at the time that the injury occurred. The secondary variables referred to in the Catastrophe model include the issue of the safety climate in which the health worker work and universal precaution measures that could increase the exposure risk (Guastello et al., 1999:739).

Two of the injuries could be related to lack of education and training to universal precaution measures. One of the participants was not aware that a centrifuge should only be switched on when the lid is closed “(4)... *spinning the centrifuged ... the splinters penetrated the gloves*”. The other participant did not know how to remove a needle from a barrel effectively “(7) *I...rid of the needle as I should have. It got stuck and I applied more pressure...then it scratched me...*”

Recapping (21.3% - 45%) was noted as one of the most frequent reasons given of when health workers injure themselves (Azap, Ergonul, Memikoglu, Yesilkaya, Altunsoy, Bozkurt & Tekeli, 2005:48; Shah, Bonauto, Silverstein & Foley, 2005:775). None of the participants in this study injured themselves during recapping. Hopefully they have learned not to recap needles.

Two of the injuries were patient induced. Health workers do not have control over patients' behaviour. These two participants were injured directly due to patients' “unacceptable” behaviour. The one participant was (5) [Bitten by a patient and scratched by a patient]. And the other incident occurred when a child coughed and “(8) *It was a HIV positive child who spit saliva in my eye.*” Occupational injuries can occur due to unexpected movement or behaviour of patients and health workers can be injured due to these unexpected movements or behaviour (Karstaedt & Pantanowitz, 2001:57; Marais and Cotton, 2002:14).

The other eight participants obtained injuries that could be directly related to the negligence of a third person. These injuries could have been 100% prevented if health workers followed the correct procedures in discarding needles in the working environment. The climate in which these health workers functioned was not safe.

“(1)I was removing the Ivac intravenous line that was not supposed to be there. There was a needle attached to the line under the head of the patient.” “It was through someone else’s carelessness that it happened to me.” “I was very angry at first towards the fact that due to someone else’s stupidity I had to go through the experience.” “You loose trust in your colleagues.”

“(2) I opened a parcel from ward...the drip needle that is sharp hurt my finger. They did not write the name of the patient on the parcel. [Previous injury] When I emptied the bin the needle stabbed me. It was careless of them to throw the needle in the bin.” “The people in the theatre are very careless”

“(3) The doctor ... put the needle and syringe in the kidney dish. As I took the needle ... to discard... the needle came off and stood upright in my finger. I just think it was stupid of the doctor to put the sharps in the kidney dish...”

“(6) I was emptying the trash from the dirt bin... when the needle injured me. I would have liked that the staff...not put sharp objects in the dirt bin.”

“(9)...needle stick injury that I reported in the theatre...I had to take over in caesarean theatre.... We were busy cleaning...a needle laid in the packet...I only saw the packet...I’ll throw away the paper...as I took the paper it went in my hand...it should have been in a galipot... [the sister should have not put it in the paper] I did not feel to take drastic measures against her. I just felt she had to handle it better [the disposal of the needle] A lot of them [doctors] just throw it [needles] down anywhere ”

All of the above health workers got injured due to a needle that was at a place where it was not supposed to be. Adegboye et al., (1994:27) and Shah et al., (2005:775) stated that there is an increased risk in injury when needles are not disposed of in the correct manner. Some of the participants expressed their dismay about the issue

that their injury has been caused as the result of the “careless” actions of another health worker. (1) *It is through someone else’s carelessness that it happened to me. It is unfair that I had to go through everything...angry at the fact due to someone else’s stupidity I had to go through the experience.*” “(2) *the people in the theatre they are very careless*” (3) *I just think it was stupid of the doctor to put the sharp container on the bed...* (4) *I would have like the nursing staff not to put sharp objects in the dirt bins.*”

The majority of incidents occurred while disposing of needles or cleaning up procedures this is similar as the finding in the literature which stated that cleaning up procedures carry a high risk for needle stick injuries (Karstaedt & Pantanowitz, 2001:57; Marais and Cotton, 2002:14; Shah, Bonauto, Silverstein & Foley, 2005:775; Smith & Leggat, 2005:449).



4.5 Reasons why health workers report needle stick and other related injuries

4.5.1 Policy and compensation

According to the literature is the “mandate of institutional policy” one of the most frequent reasons of why health workers report a needle stick injury Resnic & Noerdlinger, 1995:75). The participants in this study did not feel compelled by policy to report the incidence. Only two of the participants mentioned that they reported the incidence due to policy. The one felt that it was mandated by law “(7) *It is a rule, it is law...*” and the other participant felt that if she report the incident and should seroconvert she would have the right to claim compensation “(3) *... to claim compensation should I seroconvert.*”

4.5.2 Risk of contracting blood born disease

Sim (1992:570) refers to the risk assessment associated with an occupational injury and says that health workers are most likely to report the needle stick injury if they suspect that there was an exposure to the HI virus. Debnath (2000:853) supported this and stated that surgeons will try to assess the “risk state of the client” and if they perceive the risk to be high then they will report the incidence. The risk of acquiring a blood born pathogen via a needle stick injury is a reality and it is estimated that 66 000 workers get infected each years with blood born pathogens (Kermode et al., 2005:34). Surprisingly only one of the participants stated that she reported the incidence because the risk of acquiring a blood born pathogen. *“(1) It is not just the possibility of HIV, hepatitis B. It is important for me to know whether I might get the disease.” (2) “Everyone was talking of AIDS. The time I got the needle stick injury...”*



4.5.3 For own health reasons

Most respondents stated their own health as the overriding consideration in reporting the injury. No literature could be found to support the issue that health workers report a needle stick injury because they “care about themselves”. The databases sought were: Pubmed, Aardvark, Sciencedirect and Google. Thus these are reasons that have not been documented before of why health workers report needle stick injuries. In contrast, there is evidence in the literature that health workers do not report injuries because they do not care about themselves. Ayranci & Kosgeroglu (2004:219) mentioned that nurses have an attitude of indifference towards themselves and therefore do not report the incidence. Rabaud et al., (2000:562) state that nurse who are strongly susceptible to boredom [about life and themselves]

and who do not care about themselves are at a high risk of not reporting a needle stick injury. Four of the participants stated that they reported the injury because they care about themselves and did it for themselves. *“(1) I did it because I wanted to help myself. I still have dreams. I have a lot that I still want to do.”* *“(7) I did it for myself...all the time I thought of me”* *“(3) For peace of mind.”* *“I had to balance myself. That is what was important.”* *“(9) ... you became aware of what one is facing and how important the procedure is especially for yourself...want to protect yourself...the fact that I care for my health and that I want to work a lot of years*

4.5 4 For safe mind of family

The literature do state that some health workers share the incident with their family and friends and felt that they may get support from them (Meisenhelder,1997:321). But once again could no literature be found to support the issue that health workers report the incident because they were motivated by others such as a family member *“(2) My husband, he talked to me”* [Told her to report the injury], or another health worker *“(3) The doctor motivated me’* to report the incident.

4.6 Experiences related to needle stick and other related injuries

4.6.1 Fear

Fear is commonly experienced by people who have had a needle stick injury. The most common period of fear is during the window period when the wait for the results (Moody, 2002:12). Participants expressed their fear during different times including the waiting period. *“(3) The worst was the window period”* *“(4) The worst was to wait what the results are...”*

Others felt scared about contracting the disease “(1)... *I might be HIV positive was scary.*” (6) [scared] *Yes, that I would contract an illness or a virus.*”. Another one was scared to share the information with her partner “(3)...*having to tell him was scary.*” And others just experiences fear “(7) *It is a terrible feeling.. It is not a nice feeling.*” “(7) *I was filled with fear*” “(7) *Cold means that you feel afraid. Scared, you feel scared...I felt scared...That cold scary feeling inside that get you.*” “(8) *I am petrified*”

4.6.2 Anxiety / stress

Gershon et al., (2000a: 425) reported that occasionally the anxiety experienced by health workers after a needle stick injury can cause severe complications such as post traumatic stress. Four of the participants expressed their anxiety and stress they experience after the needle stick injury occurred “(1)...*confused, angry and anxious*” “(6) *you actually have tension*” “(8) *Stressful. You don't always know what the next result will be... hope and pray and are anxious...always be a stressful time for anyone...*” “(6) *It was a difficult thing. I had a tension in that time about the outcome.*” “(9) *I was worried. I clutch to the tread that the patient is negative*”

4.6.3 Emotional disturbances

Lee et al., (2005:117) and Ncama & Uys (2003:11) refer to the emotional experiences that occur after a needle stick injury. The participants in this study experience emotional trauma and felt that it was a traumatic event “(1) *It was very traumatic.*” “*The times spent waiting for he results was awful.*” “*I was very emotional*”

and burst into tears when it happened.” Two felt very unhappy and sad “(2) I did not feel happy. My heart was sore. After it happened I felt very sad. I was crying.” [(5) This participant became tearful and distressed during the beginning of the interview.] Another could not sleep “(3) I was in such a condition that I did not know if I was coming or going. I could not sleep the way I was worried about the outcome.”

4.6.4 Denial and isolation

The literature showed that health workers often go through a time period where they do not wish to disclose the incident with anyone as they felt that others will not understand (Moody, 2002:77;). They keep the information for themselves because they are afraid to be rejected and often deny that the incident even occurred (Reuter & Northcott, 1995:499). *“(1) It is unfair that I had to go through everything...” “You just want to escape from the situation.” I cannot think how you could be emotionally prepared if you have a needle stick injury. You have to focus on your work” “(3) My first reaction was to ignore it.” “(6) This whole process I was by myself.”*

4.6.5 Anger

Anger is one of the first steps of the Kubler Ross process and it is an emotion that is often experienced by health care workers when they injure themselves <http://www.uky.edu/Classes/PHI/350/kr.htm>. *“(1)... confused, angry and anxious.” “I was very angry..” “(2) Yes, I was very angry”. “(3) I was very angry.” “(6) I was upset.”*

4.6.6 Depression

Many factors can contribute to depression but one participant state clearly that this incident really made he feel depressed “(1) *It took two years to get better.*” “*It took time for me to get better*

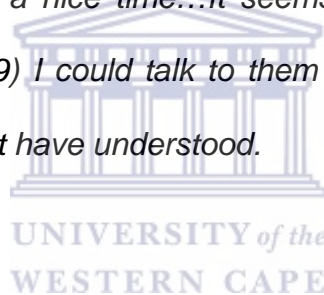
4.6.7 Acceptance / numbness

Acceptance does not always refer to happiness and during a sad period actually refers to a feeling of emptiness or numbness (<http://www.uky.edu/Classes/PHI/350/kr.htm>). Two of the participants expressed their feelings of acceptance though the experience of not feeling anything and of feeling cold. “(3) *Initially I felt nothing...I only felt something after two years.*” “(6) *My feelings at the time was not as if I had a fear of what will come over me...I would have to had to accept it.*” “(7) *...you get ice cold after a while...the priority on that moment was to find the status of the man. It was a coldness.* (8) *Then reality sunk in. I had to take the AZT within three hours.*

4.7 Implications on friends and family

The emotional turmoil of the health worker can be extended to their close relatives. The results of our study was similar than those in the literature in that some felt that they could share their experiences with their friends and family (Meisenhelder,1997:321). “(2) *I told my husband he supported me* “ (6) *It was not so stressful because I have family...I could tell my wife.*” “(7) *...when I got home I told my husband...And when I told her [daughter] what happened...*”

Some of the participants felt it difficult to share the experiences with friends and family (Mc Cusker, 2002). *“(1)...it was difficult to tell my mother.” “Initially [difficult to talk] it was later it was easier.”* They were scared that it could end the relationship. *“(1) I have a boyfriend and to think that I might be HIV positive was scary. It affects your relationship.” “(3) There was no one to support me. My husband came to fetch me... just the thought of having to tell him was scary. Up to today, I still not talk to my husband about it.” “(8)...I was told to condomised and my husband was not very happy and that stressed me further,...but fortunately we went through that...You whole family life is affected. I especially think of my daughter...when I told her what happened then my child cried...It was horrific and my husband was very unhappy...really it was not a nice time...It seems that not only you but also your family needed support”. “(9) I could talk to them that was good. I only talk to my friends. My family would not have understood.*



4.8 Reasons why previous needle stick injuries was not reported

4.8.1 Policy burden

Some of the participant's volunteered information why they did not report previous needle stick injuries. Haiduven et al., (1999:151) stated that the program instituted to address needle sticks is burdensome. Two of the participants felt that the procedure was too much of an effort. *“(3) I had an incident that I did not report when I dispensed and IV needle and when I put the lid on the sharps container, the syringe popped up with a needle that punctured me. I did not want to go through the labor of the procedure”* [Previous incident] *“(3) I did not feel like going through those*

procedures... The workman compensation forms were so stupid” “(6) The sisters they would not write the report to say it was a workplace injury.”

4.8.2 Professional discrimination

Mangione et al., (1991:85) refer to fear of stigmatisation and Professional discrimination that may occur if a health worker disclose the incident to other professional people..“(3) ... do not report it because the action you do can be classified as negligence. Another issue is the stigma... You might have done something correctly and then they say it was because of negligence.” “(6)...I felt that they did not believe me...or it seems as if I was not talking the truth.”

4.8.3 Low or unknown risk of patient

Sim (1992:570) refer to the model of risk assessment. In this model the magnitude and probability of the risk a role when people decide to report an injury. Haiduven et al., (1999:151) refer to the lack of perception of risk and thus they may think the patient is not HIV infected because he looks healthy. Risk assessment did play a role when participants did not report previous incidences. “(3) I thought what would the purpose be seeing that we could not connect the needle to a specific patient.” “(7) I was terribly biased... brown man...well educated and very neat...no I do not think so...” [did not think patient could be HIV positive]. (9)...the patient was negative, you don't take an ignorant attitude, but you kind of lax.” “I clutch to the tread that the patient is negative”.

4.9 Summary

Although the study represents a small number of participants, the method of explorative semi structured interview as the data collection method allowed to get a more “detailed knowledge” about why the health workers reported the needle stick injury. New reasons emerged from this study that has not been reported before. It is clear that the occurrence of a needle stick injury affects health workers emotionally. Feelings experienced ranged from fear, shock, numbness, sadness, confusion and anger. The incident of a needle stick injury impacts the person’s relationship with family and friends and may have long-term complications.



Chapter 5 Discussion

5.1 Introduction

This chapter aims to discuss the findings and to ensure that the objectives of this study were met. From the results of the study it is clear that the work safety climate need to be addressed. New reasons emerged of why health workers report needle stick injuries. Participants felt that an injury is an emotional happening that affects themselves as well as those close to them.

5.2 Discussions

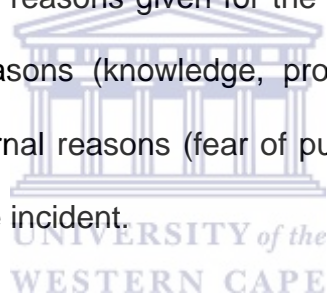
Our study support the issue that needle stick injuries are under reported. Over a time period of three years only 89 injuries related to body fluid exposure were recorded as shown by the records from the staff health clinic.

In contrast with the literature most injuries in this study had been reported by nurses and not surgeons (Table 2.1). The majority have also been employed for longer than one year and was thus experienced in the field where they worked. Hamory (1983:175) and Allen (2003) suggested that the length of employment play a role in the incidence of needle stick injury and that there is an increase in incidence during the first to years of employment.

The place of injury or the place where the injury occurred was also different in our study. Most of the injuries in this study occurred due to the negligence of another health care worker and cannot be ascribed to the worker himself. Thus it related to

an unsafe working climate. The majority of injuries in the literature occurred while drawing blood, inserting an intravenous line, recapping of a needle or cleaning up after their own procedures (Karstaedt & Pantanowitz, 2001:57; Marais and Cotton, 2002:14, Shah, Bonauto, Silverstein & Foley, 2005:775; Smith & Leggat, 2005:449; www.ccohs.ca/oshanswers/diseases/needlestick_injuries.html).

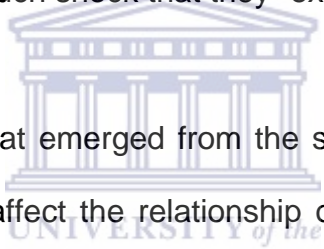
New reasons emerged from this study on why health workers report needle stick injuries. The most common reason was the issue that health workers took responsibility for their own health and they report an injury because they were concerned about their wellbeing. This phenomenon is not mentioned in the studies around needle stick injuries and no literature supporting this could be found during the literature search. Of the reasons given for the reporting of the injury, it is further significant that intrinsic reasons (knowledge, protecting the self, peace of mind, security, fear) and not external reasons (fear of punitive measures or management) motivated them to report the incident.



Another theme that emerged from this study was the issue that health workers reported a needle stick injury because they were motivated to do so by family members or colleagues. They thus also had concerns for the well being of their families and colleagues. No literature was found that supported this theme.

Policy and compensation was mentioned, but these were not the overwhelming reasons of why health workers report injuries (Resnic & Noerdlinger, 1995:75). Health workers were concern about the risk of contracting blood born diseases (Tarantola et al., 2003:357).

There is no doubt that all participants experienced some form of emotional feelings after the injury (Lee et al., 2005:117, Ncama & Uys, 2003:11). Most of the experienced feelings were well described in the literature. The various distressing emotional responses from all health care workers ranged from emotional numbness, fear, confusion, anxiety, and sadness to anger. Fear was especially associated with the window period when they had to wait for the results of the second test or when they had to wait for the results of the person from whom the body fluid originated. Others were scared that they have contracted the disease. They expressed fear towards the possibility of becoming ill from an illness that could have been transferred by a contaminated needle. Anxiety and stress increase the emotional feelings and could lead to possible depression and anger. Some of the participants just felt “numb” and was in such shock that they “experienced no feelings”.



An important observation that emerged from the study was the issue of how much does a needle stick injury affect the relationship of the health worker between her family and friends. Meisender (1997:321) stated that some health workers do have the nerve to tell their family and friend of the incident. Some of the participants could share their feelings with the family and friends but other felt threatened to do so (Black, [Sa]; Mc Cusker, 2002).

The reasons of why health workers do not report needle stick injuries (from those participants who had previous injuries that they did not reported), were similar to the reasons given in the literature. Haiduven et al., (1999:151) referred to the issue that health workers felt that completing the forms is a burden. The participants felt that the procedure to report the incidence was too much of an effort. They also felt that

their colleagues or family members may discriminate against them if the report the incidence, as they may be accused of being negligent.

Sim's model is reinforced by the responses of this study in that they felt that if the thought that the patient is a low risk patient then there is no need to report an incident (Sim, 1992:570).

5.3 Recommendations

Inner conflict and emotional turmoil was visible in most of the participants. The window period is especially emotionally taxing, and ways to provide emotional support during this period should be considered (Moody, 2002:12). From the experiences recorded in the study, none of the health workers went for professional emotional support. The study shows that there is the need to address the emotional side of a needle stick injury. This could be done through an appropriate assessment and support structure. Health workers skilled to assess the emotional trauma and skilled to provide support should be employed by institutions and all employees who injured themselves as well as their family members should have the opportunity to use this service.

The International Council of Nurses (2003) in its strategy to address behaviour change in health workers constantly raises awareness around universal precautions and also involves patients in making the environment needle stick injury safe. This approach seems to spread the responsibility of a needle stick safe environment to every one involved namely management, the community and health workers. The safe environment was a major issue in this study and specific training with all

employees should be done to inform them about the precautions. Emphasis should be put on how to discard needles. They should be made aware of the results of this report so that they can realise how much difference their negligence made in the life of another person who got injured by the needle that they did not dispose in a correct manner.

Another aspect of behaviour change could also be the knowledge gained, and exposure to, the emotional impact of an event like the bloods taken in the window period (Reutter and Northcott, 1995:493). The fact that there is no structure to assess and manage the emotional experiences of health workers, leaves a gap in the awareness of all health workers around the impact a needle stick injury might have.

In-service training should continue as it brings about behaviour change in safer needle handling methods (Bandolier, 2003:11; Wang et al., 2003:187; Richard et al., 2001:165 and Tarentola et al., 2003:362). Lazarus and Folkman (1984) as cited in Hewson (1997:1133) referred to ways of changing thoughts, feelings and behaviour in order to cope, where an individual is challenged with a situation that endangers their well being.

In addressing the working conditions within South African Hospitals, with its high patient blood-borne infection rates, the emphasis on training health workers should focus on making decisions that will keep them healthy Gershon et al., (2000b:211). There should also be ongoing efforts by health workers and management around heavy workloads and supervision to make the hospital environment safer when handling contaminated needles.

It requires an individual institutional approach to establish structures that can address the environmental factors contributing to the possibility of needle stick injuries. All role-players (patients, health workers, management and policy makers) should be involved in establishing the structures to ensure the well being of the health worker and patients following a needle stick injury.

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

Adapting work place policies to include the physical, social and psychological well-being of health workers after a needle stick injury

Creating platforms between health workers, management and patients where the incidence and feedback around needle stick injuries can be comprehensively addressed

The creation of a workplace culture that promotes their own well-being should be emphasised as this is one of the main reasons why health workers reported the incident.

Ensuring that the health workers are evaluated and referred after the injury, specifically around the emotional distress they are experiencing

Exposing health workers through in service training, to the choices and emotional experiences they might have after a needle stick injury.

The documents that need to be completed as it is set out in the policies and procedures should be meaningful and easy to complete.

5.4 Conclusion

This explorative study into the reasons why health workers reported a needle stick injury provided the researcher with new reasons of why health workers report needle stick injuries. It also supports the phenomenon that emotional experience that affects the worker, her/his family and friends after a needle stick injury should be managed better.

In promoting their social, physical and emotional well-being, health workers should be the ones taking the lead in disclosing the impact the incident had, without the fear of punitive measures or discrimination or exposure to lengthy forms.

The responsibility of promoting their physical, social and emotional well being should be a responsibility shared by all stakeholders in the working environment.



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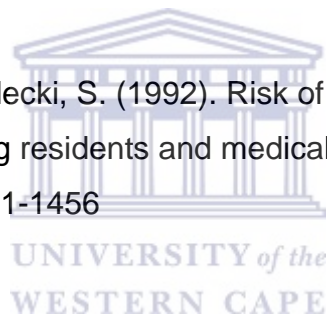
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