KNOWLEDGE AND PRACTICES AMONG REGISTERED NURSES ON OCCUPATIONAL HAZARDS IN ONANDJOKWE HEALTH DISTRICT: OSHIKOTO REGION, NAMIBIA

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ABSTRACT

Nurses are exposed to high levels of occupational hazards. The researcher had a question as to whether nurses have knowledge on the work-related risks to which they are exposed, for them to be able to prevent and manage these risks accordingly.

The study focused on the following objectives:

- To determine the extent of the knowledge on occupational hazards amongst registered nurses in the Onandjokwe Health District.
- To determine the extend to which registered nurses practice occupational safety.
- To identify strategies that are in place dealing with occupational safety.

A quantitative research design utilizing a survey by means of questionnaires was used. The population of the study consisted of a randomly selected registered nurses who were in direct contact with patients.

The results indicated that a significant number of registered nurses have knowledge on occupational hazards, although there are a few numbers which have insufficient knowledge on occupational hazards. Registered nurses also try to practice occupational safety but the restrictions such as non-availability of facilities prevent them from the safety practices. The study also revealed that information on occupational hazards/safety and support is provided to some nurses but not to all of them. There are only some guidelines/strategies in place for occupational hazards/safety although not all the nurses are aware about them. Recommendations based on this study include regular trainings and educational meetings to enhance occupational safety, develop/introduce policies and guidelines or strategies on all aspects related to occupational hazards/safety.

ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
ANC	Ante-Natal Care
ARV	Antiretroviral
BD	Twice daily
CDC	Centres for Disease Control and Prevention
CSSD	Central Sterilization Steam Department
D + C	Dilatation and Curettage
EPINet	Exposure Prevention Information Network
FP	Family Planning
HBV	Hepatitis B virus
HIV	Human Immune-deficiency Virus
РНС	Primary Health Care
RPR	Rapid Plasma Reagin Test
STD	Sexual Transmitted Diseases
ТВ	Tuberculosis
UK	United Kingdom
USA	United States of America

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DEDICATION

This work is dedicated to my three lovely daughters Ndinelago, Nduuviteko, Ndapwa and my husband Robby. Let this be a source of inspiration to them.

DECLARATION

I declare that "Knowledge and Practices among Registered Nurses on Occupational hazards in Onandjokwe Health District" is my own work; all the sources that I used were indicated and acknowledged by complete references. It has not been submitted for a degree elsewhere.

Thurdhorn

J. Tuvadimbwa

March 2005

CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION

Occupational health practice is originally from Europe following the systematic work of Bernadino Ramazzini in Italy at the turn of the 17th century (Orji, Fasubaa, Onwudiegwu, Dare and Ogunniyi 2002: 1).

Occupational health and safety maintains and enhance employee health, improve safety and increase productivity in the workplace. Therefore it promotes and maintains the highest degree of physical, mental and well-being of workers in the occupations by controlling risks (WHO/ILO 2003: no page number).

Effective occupational health benefits the employee, employer government and the society at large. The employee is benefiting by being able to work in a state of physical, mental, social and spiritual well-being without occupational hazards. Unsafe workplace may lead to high turnover of workers which leads to more financial losses in recruiting more workers and loss of skills. These loses are minimized by promoting occupational safety and health.

Nursing is a profession that is overwhelmingly concerned with the care of others and it tends to neglect itself.

Orji et al (2002: 1) stated that the occupational health care of hospital staff has been at worst neglected. Work-related injuries among nursing personnel are costly problems in terms of both workers' pain and suffering as well as medical expenses and loss of working days for organizations (Steiler, Burns, Sander-Buscemi, Morsi and Grunwald 2003: 2). Nursing personnel experience a higher rate of workplace hazards exposure than other health care workers because nurses perform more bedside procedures than other health workers (Wang, Kristopher, Guoping, Burgess and Williams 2003: 1).

Occupational hazards include; physical, mechanical, biological and psychological hazards. Biological hazards are mainly infectious hazards such as bacteria, viruses, fungi and parasites which cause diseases such as HIV/AIDS, Tuberculosis, Hepatitis and other blood borne infections (Ofili and Sogbesan 2002: 16). Physical hazards commonly found in health facilities include radiation, exposure to slippery floors, exposure to body fluids and assault by confused patients. Mechanical hazard include back pain / injury because of manual lifting of patients in particular. This is the main and a common hazard in Hospitals and Health Centers whereby lifting, turning, moving and adjusting beds by hand are routine activity of daily work (Kriner 2000: 1).

Back injuries and stress among nurses are directly influenced by the workload due to HIV/AIDS pandemic, which gives rise to a large number of patients being taken care of and sick leaves of those affected.

Other mechanical hazards include needle prick injury and cuts from surgical blades. These injuries expose nurses to blood borne infections.

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Psychosocial hazards particularly include stress and depression in the departments where psychological engagement is required.

Job-related stress is common among nurses particularly those who are always in contact with dying, seriously ill, suicidal patients and distressed relatives. Job related stress could lead to frustration, alcoholism, absenteeism and inadequate care to patients.

1.1.1 Background to the problem

Namibia is a developing country, with no exception from other developing societies, which is also exposed to a high level of work- related hazards among nurses. Health problems that are mainly faced by nurses in Namibia include exposure to infections such as Hepatitis, HIV and Tuberculosis and exposure to needle-stick injuries as well as the musculoskeletal injuries particularly backache. The major cause attributed to back pain among health workers is lifting patients (Ofili et al 2002: 16).

Rosenstock & Lee (no year: 1), indicated that psychological illnesses, such as stress may also lead to frustrations, absconding from work and wrong performances of health care activities. Among all those there is an emotional impact of needle stick injuries which can be severe and long lasting especially when it involves exposure to HIV and Hepatitis B.

In Onandjokwe Health District several cases of psychological illnesses such as stress among nurses have been observed. The high rate of absconding from work and wrong performances of nursing actions among nurses could be related to stress. Needle-stick injuries are also faced by nurses in Onandjokwe Health District although recording of such cases is very poor. Occupational illnesses / injuries among nurses are poorly recorded as job-related, because nurses do not usually report the incidents on duty. Although there is no statistical proof, it appears that a number of health care workers, particularly nurses, have developed musculo-skeletal injuries such as severe / chronic backache.

Therefore, there is an increased request that nurses should be changed from heavy to lighter workload units that do not really exist in a hospital. It is noted that there is a high rate of sick leaves among nurses mostly due to high workload. Work-related health problems are poorly detected and rarely diagnosed as being work-related except for those, which are prominent such as needle- prick injuries.

It seems that nurses are poorly informed about the health risks involving their work or may fear bringing their problems of ill health into the open, because they think they might loose their jobs. Although there are certain strategies to prevent occupational injuries / illnesses, the question remains as to whether all the registered nurses in Onandjokwe Health District have the information on occupational hazards or not.

It is therefore important to explore individual registered nurses' knowledge and practice on the health risks at their respective departments in order to take remedial actions whenever possible.

The findings from this study should assist to improve occupational health and safety in Onandjokwe Health District.

1.1.2 Analysis of the problem

High exposure to occupational hazards is mainly due to HIV/AIDS pandemic, as nurses worldwide are exposed to heavy workload due to many seriously ill and helpless patients who are wholly dependent on the nurses for their care.

Doctors and nurses are exposed to infectious diseases, needle-stick injuries, stress, burnout and compassion fatigue (Kriner 2000: 1). A certain study in the UK has shown that the hollow bore needle is responsible for up to 68% of all needle stick injuries (Adams 2002: 1).

In 1994, eight cases of HIV were reported as occupational infection transmission through wounds (Health impacts of health-care waste: 25 no year & no author indicated).

Nurses in many countries, as it was revealed by several studies, do not report workrelated problems and on the other hand employees usually fail to record occupational hazards as work-related.

A certain study in the UK revealed that many developing countries do not record occupational injuries among health workers (Adams 2002: 1).

1.1.3 Onandjokwe Health District staff profile

Onandjokwe health district hospital is located in Oshikoto Region, in the northern part of Namibia. It has three (3) health centers, 12 clinics and 42 outreach points. It is served by 281 nurses/midwives in the district hospital and 68 at the health centers and clinics with 349 nurses / midwives in the District.

It has a total number of 115 registered nurses, 19 doctors and other health workers 23, for example radiographers, assistant radiographers, pharmacists, assistant pharmacists, physiotherapists, dentist, assistant dentist and others.

In this study the information would not be supported by statistical figures of how many health workers got sick leaves or died due to job related injuries / illnesses because work- related health problems are poorly recorded and diagnosed as work related.

1.1.4 Statement of the problem

The problem is that nurses are exposed to many occupational hazards and it seems that there is a lack of information on the causes, prevention and management of occupational injuries / illnesses, it is not clear whether nurses in Onandjokwe practice occupational safety and it is unclear whether there are strategies in place dealing with occupational safety / hazards.

Research questions

Since there was no such study conducted previously in Onandjokwe Health District the following research questions came up for investigation:

- To what extend, do registered nurses have knowledge on occupational hazards in Onandjokwe Health District?
- 2. To what extend, do nurses practice occupational safety in Onandjokwe Health District?

3. Which strategies pertaining to occupational safety, are in place in Onandjokwe Health District?

1.2 PURPOSE AND OBJECTIVES

1.2.1 Purpose of the study

The aim (purpose) of the study is to determine the existing knowledge and practices of the registered nurses and strategies that are in place to guide practice on occupational hazard and safety in the Onandjokwe health district.

1.2.2 Objectives

The objectives of the study are:

- 1. To determine the extent of the knowledge on occupational hazards amongst registered nurses in the Onandjokwe Health District.
- 2. To determine the extend to which registered nurses practice occupational safety in Onandjokwe Health District.
- To identify strategies that are in place dealing with occupational safety in Onandjokwe Health District.

1.3 SIGNIFICANCE OF THE STUDY

The significance of the study is:

That the risk of exposure of nurses, sick leaves, permanent disability or possible death due to occupational injuries and diseases might be reduced which would be beneficial for employees and costs will be reduce for employers.

A study of this nature might improve knowledge and practice on issues pertaining to occupational health and safety in the Onandjokwe health district. It will also contribute towards nursing research in Namibia and it will develop knowledge. This study will lead to health improvement of the nursing personnel. As a result the quality of nursing care will be improved because a healthy nursing community will result in improved patient care.

1.4 FRAMEWORK OF THE STUDY

Framework simply refers to a set of belief, ideas or rules that is used as the basis for making judgments or decisions (Wehmeier 2000: 471).

Nurses face a number of potential hazards in the workplace including biological, chemical, physical and psychosocial hazards (Peipins and Burnett 1997: 2). The framework of this study is mainly based on the prevention of occupational hazards among nurses. Therefore Rosenstock's Health belief model was found to be suitable for this study. Rosenstock's health belief model is widely used to explain preventative health action.

This is a value expectancy theory, which emphasizes the desire to avoid illness or to get well and the belief that a specific health action available to a person would prevent illness (Glanz, Lewis and Rimer 1990: 42). Originally, the health belief model was formulated to understand why people failed to accept disease prevention. (Glanz et al 1990: 44) suggests that in order to prevent diseases or illness people would need to believe that they are personally susceptible to disease that the occurrence of disease would have moderate severity on some component of life, and that taking preventive action would be beneficial to reduce susceptibility to disease. The basic elements of health belief model include perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action and self-efficacy (Glanz et al 1990: 44).

These basic elements and their linkage will be presented in the following figure.



Figure 1.1: Health belief model components and linkages:

(Adopted from Glanz et al 1990:48)

Health belief model is a behaviour change model which will guide the researcher to explain various occupational health related behaviour especially the preventive behavior among health care workers.

According to Rosenstock's theory, the preventive behavior is dependent upon the willingness of individuals to accept a more active role in caring for their own health.

Nurses will only be able to act to control occupational injuries / diseases,

- If they regard themselves as susceptible (at risk) to the occupational hazards.
- If they believe that occupational hazards have serious consequences such as disability, death and social effects in life and work.
- If they believe that a course of action, that is prevention of illnesses / injuries, would be beneficial to them.
- In addition, if the health care workers believe that the anticipated barriers to acting are outweighed by its benefits.

Strategies to prevent and deal with work-related illnesses / injuries will be implemented if health care workers are willing, ready and self-efficacy to act.

Hanrahan and Reutter (1997: 149) state that caregivers who do not perceive themselves at risk may not be motivated to change their behavior. Therefore based on this model, nurses will only be able to change their behaviour if they perceive themselves at risk of occupational hazards.

1.5 CONCEPTUALIZATION

Knowledge

A state of knowing about a particular fact / situation (Wehmeier 2000: 658). It is the understanding and information that registered nurses have, regarding occupational hazards that may put their occupational health in risks.

Practice

A way of doing something that is the usual or expected way in a particular organization / situation (Wehmeier 2000: 912). It is the psycho-motor activities of a registered nurse in conducting nursing activities in the ward/unit.

Occupational hazards

Injuries / illnesses / diseases that result from a particular employment, usually from the effects of long-term exposure to specific substances or of continuous/ repetitive physical acts (Urdang & Swallow 1983: 762).

Occupational health and safety

Refers to reducing risk to safety and health through ensuring safe design, testing and choice of safe equipment through the establishment of safe work environments and a safe work organization through adapting work to workers (Loewenson 1998: no page indicated).

Registered nurse

Means a person registered as a nurse under section 13 (Nursing Professions Act. 30 of 1993: 18).

Strategies

For this, study strategies are the guidelines and policies regarding occupational safety, which are stipulated by the Ministry of Health and Social Services as well as those provided by the Labour Act, but particularly those which are applicable to Onandjokwe Health District.

Onandjokwe Health District

This will refer to the district hospital, with three health centers and 12 clinics which serves people in Oshikoto region near Ondangwa.

1.6 OUTLINE OF RESEARCH REPORT

In this report five chapters will be dealt with as follows:

- Chapter 1 Orientation to the study
- Chapter 2 Literature review
- Chapter 3 Research Methodology
- Chapter 4 Data Analysis and discussion of findings
- Chapter 5 Limitations, conclusion and recommendations

1.7 SUMMARY

Occupational health and safety is the way to health at the workplaces which should be maintained in order to reduce occupational risks among health workers. Knowledge provision through health promotion strategy enables health workers to perform tasks without risks to their health. Nurses are exposed to many occupational hazards, therefore in this chapter the introduction and background to the problem, purpose and objectives, significance of the study as well as the conceptual and operational definitions were highlighted.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter reviews the literature related to the occupational hazards among health workers, particularly nurses. This literature is reviewed categorically by grouping types of hazards into the following: infections, injuries, physical agents and psychosocial hazards. The literature on the epidemiology, strategies for prevention and management of exposure to hazards is reviewed. Finally, knowledge and practices among nurses on occupational hazards/safety is incorporated in all the above mentioned categories.

The literature review helps the researcher to determine what is already known about the topic in order to minimize the unintentional duplication. It also provides the researcher with information regarding methodology and instruments as well as refining problem statement, conceptual framework and data analysis process (Brink 2002: 76).

Work-related problems among health workers are challenges to the whole world. One of the problems is that employers do not record all work-related injuries and illnesses; they only tend to record the type of the condition when the injury / illness results in at least one day away from work. More often employers are unaware of work-related conditions where their employees have obtained medical care from their personal health care provider (Council of State and Territorial Epidemiologists 2002: 13).

2.2 INFECTIONS

Nurses are exposed to many health hazards among which infections present a greatest risk, especially those carried by blood-borne organisms (Orji et al 2002: 1). Blood-borne infections include HIV/AIDS, Hepatitis B, and Hepatitis C. Other infection that nurses might be exposed to include Tuberculosis, yellow fever.

Exposure to body fluids such as liquor amnii, faeces, vomitus, urine and others may also cause serious threat to nurses.

Kriner (2002: 1) states that infectious diseases such as Tuberculosis also pose a growing threat to health care workers by way of inhaling the airborne bacteria.

Blood-borne infections such as Hepatitis B, Hepatitis C and HIV/AIDS pose a serious risk to health care workers.

A certain study from UK quoted the risk associated with transmission of Hepatitis B virus to a non-immune health care worker to range from 2% if the source patient is Hepatitis B_e antigen negative to 40% if the patient is positive (Alam 2002: 397).

Hanrahan et al (1997: 144) in their study indicated that the greatest occupational risk for transmitting blood-borne infection is through parental exposure by penetrating sharps injury.

A study in Nigeria revealed that blood contamination of unprotected skin has commonly occurred in 73% of the health care staff in an obstetrics and gynaecology units (Orji et al 2002: 77).

A report on the documented occupational HIV transmission to health care workers in USA revealed that 22 nurses were infected while 32 nurses were possibly suspected (CDC 1998: 1).

Viral Hepatitis, especially Hepatitis B, has long been recognized as an occupational hazard in health care workers as a result of exposure to needle-stick, injuries, contamination of wounds and abrasions (Peipins et al 1997: 3).

2.3 INJURIES

Injuries and illness in the health care industry increase worker absenteeism and staff turnover that directly affect the continuity of care and availability of trained staff (Gemma 1998: 5).

A rising rate of occupational injury and illness is a sign of organizational stress and breakdown which serves as an indicator that some health care facilities may be increasingly unable to carry out their mission, due to increasing worker absenteeism and staff turnover (Gemma 1998: 5).

Loewenson (1998: 62) indicates that workers occupational illnesses and work-related injuries are poorly detected and rarely diagnosed as being work-related.

According to Subach (2000: 5), nurses are frequently injured on the job due to the immobility of large number of patients and relatively to the disadvantages that stretchers, wheelchairs and hospital beds are inadequate.

Work experience may play a role in the incidence of exposure to occupational injuries. In an Italian study, Wang et al (2003: 2) indicated that student nurses and medical interns accounted for approximately 15% of total exposures compared to the experienced nurses.

Any sharp device in the health care setting can cause a percutaneous injury, although not all the devices carry the same risk of transmitting blood-borne pathogens (Jagger & Bentley 1999: 1).

Needle-stick injuries are devastating even when they do not result in infections. However they remain a very serious occupational health concern for nurses and other health care workers. Nurses are the most health care workers at risk of acquiring needle-stick injuries for almost 50%-63% followed by medical staff about 13%-17% (Adams 2002: 1). Nurses are at great risk of serious viral infections such as HIV/AIDS and hepatitis B and C through injuries from contaminated sharps (Health impacts of health-care safe management of wastes from health-care activities: 24, no author & year). It was also noted that many of these injuries are caused by recapping of needles before disposal into containers or by unnecessary opening of these containers. According to the American nurses association more than 80% of needle stick injuries can be prevented with safer equipment (Oulton 2000: 9).
In Namibia needle prick injury is responsible for 33% of all occupational injuries of health personnel, whereby about 90% of these occur among health and laboratory personnel (Republic of Namibia 2000: no page indicated). These expose health personnel to serious and life threatening infections such as Hepatitis B, HIV/AIDS and Viral haemorrhagic fever.

In Nigeria the second most common hazard is needle-stick injuries among nurses which were about 65, 2% in 2002 (Orji et al 2002: 77). While in USA more than 800 000 needle-stick injuries occur each year despite continuing education or other efforts aimed at preventing them (Orji et al 2002: 77).

The centers for Disease control and Prevention (CDC), established a criteria that the devices that most likely to transmit diseases are blood-filled needles used for vascular access (Jagger et al 1999: 1).

Most of the needle-stick injuries among nurses may occur but are not reported due to many reasons. It is also believed that in many developing countries these injuries may virtually go undocumented. Inadequate knowledge among health care workers influences the reporting process of these injuries. A study in Saudi-Arabia reported that 93% of health care workers had needle-stick injuries but they did not report because they were not aware of the importance of post-exposure prophylaxis (Alam 2002: 397).

Trim, Adams and Elliott (2003: 216) reported that 80% of sharp injuries in Birmingham Hospital were not reported due to minimal knowledge and workload pressure. A British study also revealed that health workers' knowledge on inoculation injuries and glove use in the clinical situation was inadequate (Trim et al 2003: 215). As an indication nurses were not following policies and procedures or Universal precautions as set up.

Some Researchers felt that years of experience appear to have no influences on the level of knowledge or behaviour on occupational injuries (Trim et al 2003: 219).

While Wang et al (2003: 6) in his report from a Chinese study indicates that most of the sharp injuries among student nurses were due to inexperience and excessive handling of contaminated needles in the wards. High frequency of injections and infusions in the wards/units might also influence this.

The Exposure Prevention Information Network (EPINet) Surveillance system reported that excessive usage of Intravenous catheters place nurses at risk of needle-stick injuries (Jagger et al 1999: 1). Staffing and organizational climate are likely to influence hospital nurse's sustaining needle-stick injuries.

A study in USA reveals that nurses working in hospital units with lower staffing levels and poorer work climates were more likely to report the presence of risks associated with needle-stick injuries (Clarke, Sloane and Aiken 2002: 4).

Therefore in order to build up a safer health care system, the following aspects should be eliminated, these are problems with understaffing, inadequate administrative support and poor morale in hospitals. Hanrahan et al (1997: 144) have also noted that an organizational perspective on the needle-stick injuries issue is needed.

Clarke et al (2002: 5) in their study also indicate that nurses working in units with less adequate resources, less nurse leadership and high levels of emotional exhaustion were typically twice as likely to report the presence of risks.

Hanrahan et al (1997: 149) describe engineering and behavioral factors that are related to sharp injuries (see table below).

Table 2.1 Factors related to sharps injuries.

Engineering factors	Organizational factors	Behavioral factors
• Design of sharps	• Availability of Supplies	 Recapping
Barrier devices	Reporting Policies	 Disposal-related
		issues.
• Substitution (e.g. needle-less	Protocols for controlling	
IV-access system, vaccine	exposures	
injector).		

(Adapted from Hanrahan and Reutter 1997: 149)

Although some researchers felt that the above-mentioned factors should be considered in order to reduce/prevent needle-stick injuries, Hanrahan et al (1997: 147) recommend safer devices as an additional preventive measure.

Most of the nurses are suffering from severe to chronic backache because they are exposed to high levels of immobile patients.

Statistics in USA indicate that up to 38% of nurses are affected by back injuries and 67% disabling injuries in nursing were due to sprains and strains, due to over exertion in lifting patients (Steiler et al 2003: 2).

Kriner (2000: 1) reported that back injuries, repetitive stress and muscle disorders are the most common injuries affecting hospital workers, especially those who are exposed to operating machines, lifting, turning and moving of patients.

2.4 PSYCHOSOCIAL HAZARDS

Emotional hazards are also an issue among nurses. This occasionally occurs when nurses take patients' problems home with them which promotes stress and burnout. Sanoshy (2000: 2) states that nurses should identify their stressors and take action, such as counseling, to minimize stress and burnout. A study in Nigeria reveals that the common health occupational hazard in obstetrics and gynaecology units in the year 2002 was work-related stress (83, 3%) (Orji et al 2002: 75).

A Canadian study states that exposure to hazards in Nursing, such as stress of dealing with death/dying and violent patients as well as heavy work-loads are associated with increased health problems among nurses (Walters, Eyles, Lenton, French and Beardwood 1998: 230). Therefore nurses are in the entire need of psycho- social support for better health.

2.5 EXPOSURE TO OTHER PHYSICAL AGENTS

Nurses who are working at the departments where there is high exposure to infectious agents such as oncology units are at risk of sufferings from occupational illnesses, particularly cancer. Oncology practices such as mixing and administering chemotherapy poses risks to the handlers/health workers.

In an animal study which was conducted, it has demonstrated that chemotherapy is capable of inducing cancer (Sanoshy 2000: 2). According to a certain study in USA, oncology staff is exposed to high rate of malignancies and allergic reactions to certain chemotherapy agents (Sanoshy 2000: 2).

2.6 STRATEGIES TO DEAL WITH OCCUPATIONAL HAZARDS

The workplace is one of the most important settings that are affecting the physical, mental, economic and social well-being of workers (Huiskamp, King and Hattingh 2002: 57).

The Namibian Labour Act, No. 6 of 1992: 122 stipulates that the employer has a duty to provide information, training, adequate personal protective clothing and equipment to ensure the safety and health at work of all the employees.

Similarly the South African occupational Health and safety Act no. 85 of 1993, states that employers are responsible for creating a healthy and safe environment through a health and safety programme.

Therefore, in-order to control and avoid occupational hazards effectively, workers need to be provided with information and knowledge to perform tasks without risks (WHO 1994: no page indicated).

Huiskamp et al (2002: 56) also noted hat Health promotion is an integral part of the management of the workplace, occupational health and safety.

According to most of the studies conducted on different occupational hazards, it seems that there are preventive measures. Although there is availability of certain strategies on the prevention, exclusive reliance seems to be inadequate due to several reasons.

Some studies have shown that nurse compliance with universal precautions is affected by the availability of protective equipment, perceived commitment of management to safety and perceptions regarding interference of precautions with job performance (Clarke et al 2002: 2). According to Vlok (1996: 61) occupational health care is aimed at preventing employees from illnesses and keeping them at work.

It is then recommended that nurse managers should influence staff compliance with safer practices, through teaching, modeling appropriate behavior and helping staff to better evaluate risks and benefits of their decisions (Aiken et al 1997: 5).

According to Hanrahan et al (1997: 148) the employer is totally responsible for staff of hospitals who fail to comply with precautions to prevent risks. According to the Centers for Disease control and prevention (CDC's) recommendations, needles should not be recapped but be placed in puncture-resistant containers.

Comparable precautionary measures were also adopted in Namibia that used needles/sharps should be placed in an impermeable holder immediately after use (Republic of Namibia 2000: no page number indicated).

Aiken et al (1997: 1) in their study indicate that recapping of needles is associated with increased injuries. According to one study, health workers recap needles to protect themselves from an exposed needle on the way to a disposal container (Jagger et al 1996: 3). The CDC (1998: 2) reports that the primary prevention of occupational exposure to HIV and other blood-borne infections is to follow infection control precautions. The main precautions are: routine use of protective measures, hand wash, careful handling and disposal of sharp instruments and post-exposure management (Republic of Namibia 2000: no page number indicated).

Hepatitis B virus is the only blood-borne infection that can be prevented by preexposure vaccination, otherwise post-exposure management for sharps injuries is recommended (Hanrahan et al 1996: 146). According to CDC recommendation for Hepatitis virus exposure is to test for antibody after completion of three injections of HBV vaccine, if negative, give a second three dose vaccine and test again for anti-Hepatitis Bs Ag antibodies. If there is no antibody response, no further vaccination is recommended (Alam 2002: 398).

To prevent HIV infection following sharps injury a course of antiviral medication/Zidovudine may be prescribed (Hanrahan et al 1997: 146).

Some studies have shown that this treatment fails to prevent HIV infection following exposure, while other studies indicate its effectiveness. In Namibia, the post-exposure prophylaxis for HIV is recommended (Republic of Namibia 2000: no page number indicated). A vigorous washing of the wound post-injury and promoting bleeding at the site are recommended although efficacy of this intervention is not known (Republic of Namibia 2004: 16). The Ministry of Health and Social Services in Namibia provided guidelines that workers should wear protective apparel such as masks, caps, gloves, gowns/aprons and goggles as an infection control precaution.

A certain study highlights that midwives should routinely wear goggles during deliveries as a precaution against splashes of infected blood or liquor amnii. It seems that nurses are not compliant with the use of protective clothing, despite provided guidelines.

A study which was conducted in China indicates that there was a low rate use of protective gloves among nurses during high risk procedures (Wang et al 2003: 7).

Gillis (2000: 49) is of meaning that in order to reduce the risk of occupational injuries, employee training on prevention should be an ongoing and not restricted to orientation only. Hospital practices and guidelines should be reviewed regularly and updated as necessary in order to minimize the risk of exposure to injuries or illnesses and deaths.

2.7 SUMMARY

The knowledge to prevent all occupational hazards is inadequate. However most of these hazards are preventable with the efforts of industry, management and individual care givers (Hanrahan et al 1997: 151). Interventions have been recommended and implemented in some health facilities. Continuous evaluation of interventions should be carried out. Nurses are willing to care for their patients, but they are entitled to do so in the safest environment that can reasonably be created. Safe working environment can be created by reducing occupational hazards mainly through education, provision of adequate materials and adequate staff - patient ratio.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The focus of this chapter is more on the research method and design, particularly the quantitative research design which was chosen to answer the research questions in this study. Quantitative research forms the blue print or recipe for this study and determined the methods used to obtain samples, collect data, analyze data and interpret findings (Brink 2002: 100).

Furthermore this chapter will define a detailed description of the research methodology such as: study population, sampling, data collection, data analysis, pilot testing, and others that were applied to describe the knowledge and practices of the registered nurses on occupational hazards in Onandjokwe Health District.

3.2 RESEARCH DESIGN

Research design is the overall plan for answering the research questions (Polit, Beck and Hungler 2001: 167). A non-experimental research design using a quantitative exploratory descriptive design was used. A research design is necessary to translate the research objectives into measurable and valid information (Nardi 2003: 7).

3.2.1 Quantitative research

A quantitative research relies upon measurement to analyze different variables and uses various scales (Bless and Higson-Smith 2000: 38). This is a formal objective, systematic process, which aims to describe, compare and analyze different variables. Quantitative research approach was considered to be suitable for this study because with this approach a formal and systematic approach concerning measuring registered nurses' knowledge, practice and strategies on occupational hazards is implemented.

3.2.2 Exploratory research

This study was exploratory in nature because it was conducted to gain insight and broad understanding on knowledge and practices of the registered nurses regarding occupational hazards and safety in Onandjokwe Health District.

3.2.3 Descriptive research

The study is descriptive because it was conducted to provide descriptions on the knowledge as well as practices of registered nurses on occupational hazards.

The purpose of descriptive studies is to describe and document aspects of situation (Polit et al 2001: 180). The researcher sought to describe the knowledge and practices of registered nurses on occupational hazards and report as they are.

3.3 RESEARCH METHOD

A survey study was considered as the best method to gather the information. Survey is an investigation of the opinions, behavior, practices of a particular group of people, which is usually done by asking them questions (Wehmeier 2000: 1208). A survey focuses primarily on questionnaires with samples of people (Nardi 2003: 17). The survey is also described as the collection of information on a wide range of cases, each case being investigated only on the particular aspect under consideration (Bless and Higson – Smith 2000: 41).

In this study the purpose is to determine existing knowledge and practices of the registered nurses and strategies that are in place to guide practice on occupational hazards and safety in Onandjokwe Health District.

3.3.1 Study population

A study population is the entire accessible group of persons that is of interest to the researcher or that meets the criteria the researcher is interested in studying (Brink 2002: 132). The study area was Onandjokwe Health District.

The population in this study included all the registered nurses who were directly involved with patient care in the district.

That is those who perform bedside nursing care in the wards and those who do the screening and administration of treatment in the clinics. That included all the registered nurses working in the health facilities within the boundaries of the district such as Onandjokwe Hospital, Health centers and clinics. Other registered nurses who were not directly involved with patients such as nursing administrators as well as those who were on leave (sick, annual / maternity leaves) during data collection time were excluded.

Onandjokwe Health District has a total number of 115 registered nurses (Onandjokwe staff establishment record 2004). Five of the registered nurses on leave and ten (10) nursing administrators were not included in the study (Onandjokwe Lutheran Hospital Sep. / Oct. 2004). Therefore, for this study a total number of 100 registered nurses were referred to as the study population. Registered nurses for the purpose of this study were considered because of their, professional knowledge of information and practices.

3.3.2 Sampling

Sampling is the process of selecting a portion of the population to represent the entire population; it is then a subset of the population (Polit et al 2001: 234, Brink 2002: 133). Bless et al (2000: 84) stated that sampling should be done because it is less time-consuming and less costly for the researcher to work on a subset of the population. A sample was drawn from the list of the study population that is the registered nurses in Onandjokwe Health District. Probability sampling which involves the random selection of elements from the population was used.

A random selection is a process in which each person / element in the population has an equal, independent chance of being selected (Polit et al 2001: 240, Brink 2002: 136). The sample size should be decided in a way that it is representative and can be generalized to the population (Polit et al 2001: 244). Therefore the total number of the registered nurses in the district determined the sample size, as set out in the study population.

The total number of registered nurses in Onandjokwe Health District was requested from Onandjokwe Hospital personnel office's staff establishment and Primary Health Care District supervisor. These revealed a total number of 100 registered nurses who were considered suitable for this study.

A simple random sampling was used to draw 50% of the total registered nurses in Onandjokwe Health District. In this study a lottery technique was used, whereby a list of all the registered nurses was obtained, and names were placed in a container mixed well and then names were drawn that constituted the sample (Bless et al 2000: 87). Sample was selected as follows:

 Table 3.1: Sample size

NAME OF HEALTH	TOTAL NUMBER OF
FACILITY	REGISTERED NURSES
Onandjokwe Hospital	41
Health Centers	3
Clinics	6
TOTAL	50

Most of the sample 41 (82%) was taken from the hospital because it has a large number of Registered Nurses in the district while some clinics do not have registered nurses.

3.3.3 Research Instrument

The questionnaire was designed after the literature review, and it was done in order to meet the purpose and objectives of the study. Questions were formulated in simple words. The questionnaire consisted of 17 closed ended and 20 open – ended questions. It was divided into four sections as follows:

- Section A Socio-demographic characteristics of the respondents.
- Section B Knowledge on occupational hazards
- Section C Practices on occupational hazards
- Section D Understanding on strategies or guidelines that guide practices on occupational safety.

The instrument was compiled in these four sections according to the three main objectives of the study. Each objective was covered by its section with related questions to the key concept. For example section B covers objective one which is about knowledge on occupational hazards.

3.4. VALIDITY AND RELIABILITY

3.4.1 Validity

Validity is the degree to which an instrument measures what it is supposed to be measuring (Polit et al 2001: 308). The researcher paid attention to the selection of the sample and data collection criteria, so that the results of the study can be valuable.

In order to ensure face validity, study supervisor and experts such as an experienced registered nurse, a doctor and a person from infection control unit reviewed the questionnaire before distribution.

An ordinal rating scale was compiled and distributed to experts in the two hospitals for comments, which are Onandjokwe and Oshakati Hospitals respectively to test the content validity of the instrument. A panel of ten (10) experts rated the items on the scale of one to four: One (1) stands for irrelevant, two (2) stands for can be left out, three (3) stands for relevant and important, four (4) stands for applicable, specific and critical. After the researcher revised the instrument based on feedback from the experts, the content validity was evaluated finally by two experts. The questionnaire was finally compiled according to the amendments made by the experts contacted as it is seen in Annexure D.

3.4.2 Reliability

Brink (2002: 124) indicated that reliability is concerned with consistency, stability and repeatability of the informant's accounts as well as the investigator's ability to collect and record information accurately. The researcher ensured reliability by explaining in simple words the purpose of the study to the respondents.

Questionnaires were written in simple language and explanations of questions were offered to the respondents. Because the researcher collected data herself, no inter – rater reliability is involved. A pilot study was also conducted.

3.5 PILOT STUDY

A small – scale study was conducted amongst registered nurses who were directly involved with patients in Oshakati State Hospital before the main study. Subjects for pilot study have the same characteristics as the main study population. The respondents who participated in the pilot study were excluded from the actual data collection.

The pilot study is done for the following reasons:

- To correct confusing words in the questions.
- To determine the validity and reliability of the instrument.
- To identify problems with the design.

3.6 DATA COLLECTION

Questionnaires were used to collect the data, whereby the respondents completed the instruments themselves (Polit et al 2001: 267).

A questionnaire refers to a self – report instrument where the respondent writes his or her answers in response to printed questions on a document (Brink 2002: 154). Structured questions including closed and open-ended questions were compiled (Polit et al 2001: 267). The researcher distributed the questionnaires per hand to the respondents and collected them back.

3.7 ETHICAL CONSIDERATION

Permission to conduct the study was requested and granted from the following: *The Ministry of Health and Social Services, Medical Superintendent of Onandjokwe Hospital and Primary Health Care District Supervisor of Onandjokwe Health District.* Free choice of participation was allowed without prejudice anybody. Confidentiality and anonymity were ensured, whereby respondents were not allowed to reveal names and addresses on the questionnaires. Furthermore the researcher did not divulge the information without permission.

3.8 DATA ANALYSIS

This entails categorizing, ordering, manipulating and summarizing the data and describing them in meaningful terms (Brink 2002: 178).

In this study, statistical analysis of all the fifty (50) returned questionnaires with the assistance of the statistician was done. The computer data analysis has been conducted by using a mini-tab. The data has been presented in a form of descriptive statistics, tables and graphs were used. The findings were summarized and reported.

3.9 SUMMARY

This chapter dealt with the in depth discussion of the research methodology. The detailed explanation of the design and method was done. Quantitative research formed the basis of this study. Additional information provided was about the population, sampling, data collection and data analysis as well as the process involved in the data collection.

CHAPTER 4

DATA ANALYSIS AND DISCUSSION OF RESEARCH FINDINGS

4.1 INTRODUCTION

This chapter deals with the analysis of data and interpretation of the research findings. The data were analyzed and interpreted according to the four sections as they occurred in the questionnaire. The total number of 50 questionnaires that were distributed and returned contributed to the research findings. Therefore all the fifty (50) returned questionnaires were analyzed under the headings as well as subheadings of the questions.

4.2 ANALYSIS AND DISCUSSION OF FINDINGS

4.2.1 SECTION A: SOCIODEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

1. Age in years

The age of the respondents ranged from 20 to 59 years old. The majority of the respondents, that is 17 (34%) of the sample, were in the age category of 30 - 39 years.

Fifteen (15) respondents that are (30%) were between 50 to 59 years old, while fifteen (15) respondents (30%) were 40 - 49 years old. The remaining three (3) 6% respondents of the sample were in the age range of 20 -29 years.

Age	Frequency	Percentage
20 - 29	3	6.0
30 - 39	17	34.0
40-49	15	30.0
50 - 59	15	30.0
Total =	50	100.0

Table 4.1: Age in years

2. Sex

The nursing profession originally is more presented by women than men. Therefore the total numbers of 41 (82%) respondents were females. Only 6 (12%) of the sample were males. Three (3) respondents which are 6% of the sample did not indicate their sex.

Table 4.2 Sex

Sex	Frequency	Percentage
Female	41	82.0
Male	6	12.0
Total	47	94.0
Missing / No answer	3	6.0
Total	50	100.0

3. Years of experience as a registered nurse

The majority of the respondents have worked for 6 years and more as registered nurses. That is indicated as follows:

Seventeen (17) which is 34% respondents worked for 6 - 10 years as registered nurses. The range of 11 - 20 years was presented by 13 (26%) respondents. Eleven (11) 22% respondents have worked for more than 20 years as registered nurses. Only nine (9) 18% of the sample who have the experience less than five (5) years as registered nurses. This indicates that a large number of the respondents are experienced because they have served for a longer period as registered nurses. They will probably contribute more to the occupational hazards among nurses.

Table 4.3 Years of experience as a Registered Nurse

Years of Experience	Frequency	Percentage	
Less than 5	9	18.0	
6 -10	17	34.0	
11 – 20	13	26.0	
More than 20	11	22.0	
Total =	50	100.0	

4. Working Department

The majority of the respondents from the sample which is 41 (82%) were hospital registered nurses. The rest nine (9), 18% represented both the health centres and clinics. That was done because the hospital is complex and has got a large number of nurses in the district as per staff establishment. In addition some of the clinics in the district do not have registered nurses. The respondents were categorized according to their working departments as follows:

Eight 8 (16%) respondents were from the outpatient or casualty departments. Six (6) 12% of the sample were from the gynaecology/obstetrics. Other six (6) 12% respondents were from the surgery. Medical is represented by seven (7) 14%. Other departments were represented by 21 (42%).

These include clinics, health centres, operating theatre, PHC, pediatric units, ANC, patient care, ophthalmology (eye) clinic and private ward (combined).



Fig. 4.1. Working department of the respondents

4.2.2 SECTION B: KNOWLEDGE ON OCCUPATIONAL HAZARDS

1. Understanding of occupational hazards

Occupational hazards are injuries or illnesses or diseases to which health workers are exposed to while on duty. These can be either a short or long-term injuries/illnesses/diseases. It seems that the majority of the respondents, that is 39 (76%) of the sample understood occupational hazards as it was indicated in their responses. Three (3) 6% of these 39 respondents have extensively explained occupational hazards, that it can be physical, mental and spiritual injury/illness while on duty and that may occur due to lack of skills or lack of abilities. Those are individual perceptions on occupational hazards that nurses perceive occupational hazards as injuries/illnesses gained while on duty. This is in keeping with the health belief model's individual perceptions (Glanz et al 1990: 48).

Six (6) 12% respondents have only mentioned the types of occupational hazards instead of explaining the meaning. Slippery floor, falling down, needle-prick injuries, cross infection through home delivery were listed in their questionnaires. An indication that occupational hazards are understood although they could not explain; it might be due to language problem or misunderstanding of the question. Only three (3) 6% respondents could not explain occupational hazard well. It was indicated by the following respectively: "dangerous, when the patient fell down from the bed and it is the hazard that occurs in nursing if the nurse does not follow rules of nursing care". This is an indication that it might be that these respondents could not express themselves in English or that they do not understand the term because it is a long time since training was completed.

Only 3 (6%) who did not respond to that question. One can assume that these respondents did not understand the question or that they could not write answers in English or that there is a lack of knowledge on occupational hazards.

2. Ways that expose nurses to occupational hazards

Nurses are seriously exposed to high levels of different occupational hazards depending on their areas of work (working departments). Thirty seven (37) 74% respondents have indicated that they are exposed either through handling of sharp instruments or equipments lifting of patients, exposure to aggressive patients, exposure to airborne diseases.

Other ways which were mentioned, are:

- Non-availability/lack of protective measures such as gloves, face masks
- Suturing and dressing wounds/episiotomies
- Working with chemical and mechanical agents
- Using worn out equipment
- Handling infectious materials
- Slippery floors
- Flushing of liquor amnion
- Inhalation of Tuberculosis bacteria in TB clinic.

Three (3) 6% respondents indicated that they are exposed to car accidents during outreach services. Two (2) 4% respondents from those above explained further that frustrations can lead to psycho somatic responses such as high blood pressure.

This is indications that nurses who are working at outreach services have fear and stress due to the possible hazards that can face them. It also indicates that nurses perceive themselves at risk of work-related hazards.

This correlates with the health belief model that nurses will only be able to control occupational hazards if they regard themselves as susceptible to risks (Glanz et al 1990: 49).

It seems that 6 respondents that is 12% of the sample did not get the questions clear as it was indicated by their responses as follows:

"Sick people to contact others, no paper container for sharp instruments, only to obey occupational rules and to follow it during procedures, both physical and biological to teach them by in-service training". The other response which was given is not clear. That is, one is exposed through "SWAMS".

Only 3 (6%) of the sample did not respond to that question. It might be that they did not understand the question.

3. Important preventive measures against occupational hazards

It is encouraging that a large number of registered nurses understand the preventive measures against occupational hazards. The framework of the study also indicated that the prevention of injuries/illnesses on duty would be beneficial to the health workers (Glanz et al 1990:49). Registered nurses are responsible for supervising and educating subordinates. Therefore, one can assume that knowledge on preventive measures can be conveyed to all health care workers.

The majority of respondents that is 46 (92%) indicated that occupational hazards can be prevented by wearing/using protective measures including gloves, facemasks, aprons, gowns, boots and goggles. Other preventive measures mentioned against occupational hazards were:

- Health education
- Avoid needle recapping
- Maintenance of correct body postures
- Walking carefully on a wet floor
- Dispose used needles/sharps in a container for sharp instruments.
- Neatness
- Regular hand wash on duty
- Counseling and occupational support
- Well trained drivers
- Notice board when the floor is wet
- Prophylaxis
- Poisonous drugs to be kept in a safe place
- Sedate psychotic patients immediately
- Procedures should be followed when injury on duty occurred and all staff members must be educated on that.
- Familiarization with guidelines on how to handle plugs
- Disinfection of all contaminated instruments
- Assist each other when lifting/turning patients
- In-service training/informative meetings with all staff members
- Teaching students and other subordinates
- Isolation of cases.

Only 2 (4%) respondents did not respond to these questions. Two (2) 4% respondents provided responses which are not related to the question such as needle-stick injuries, TB, Malaria and diarrhoea prevention respectively.

4. Responses on awareness about the procedures to be followed in case of needle-stick injuries

The majority of the respondents, that is 48 (96%) of the sample, indicated that they are aware of the procedures to be followed in case of needle-stick injuries on duty. This is an indication that there is a guideline in place to deal with needle-stick injuries and health workers are well informed about the procedures to be followed in case of injury on duty.

Two (2) 4% respondents only indicated that they are not aware about the procedures to be followed in case of needle-stick injuries.

Responses	Frequency	Percentage
Yes	48	96.0
No	2	4.0
Total =	50	100.0

Table 4.4	Needle-stick	c injuries'	procedures	awareness

4.1 Diseases that can be transmitted through needle-stick injuries

All 50 (100%) respondents have indicated that diseases that can be transmitted through needle-stick injuries are mainly HIV/AIDS and Hepatitis B.

Despite their knowledge on the two main diseases that can be transmitted through needle-stick injuries, insufficient knowledge on the method of spread of other communicable diseases was revealed.

Other diseases that were mentioned include:

Meningitis, RPR/Syphilis, WR, Kongo fever, Malaria, Tetanus, Viral haemorrhagic,

TB, Hepatitis A and C. That indicates that some diseases are not known as to how are they being contracted.

5. Responses on whether there is any available guideline on body mechanics when lifting/turning/get up weak patients

Nurses are exposed to muscular skeletal injuries especially back pain. That is mainly due to manual lifting, turning or getting up weak patients. Since there is a high rate of helpless patients, nurses are in need for guidance on how to do it in order to prevent unnecessary back injuries.

Thirty-two 32 (64%) respondents indicated that there is no guideline in place, dealing with body mechanics at their units. Eighteen 18 (36%) respondents indicated they have guidelines on body mechanics at their departments.

Responses	Frequency	Percentage
Yes	18	36.0
No	32	64.0
Total =	50	100.0

 Table 4.5 Guidelines on body mechanics

5.1 Responses on the awareness about the content of the correct body mechanics

Nineteen 19 (38%) respondents indicated that they are aware of the content of the guidelines on body mechanics. Twenty-eight 28 (56%) respondents were not aware of the content of the body mechanics guideline.

Three 3 (6%) respondents did not answer this item, although they have indicated that the guideline is available.

It can be assumed that the respondents who have indicated that they are aware of the correct body mechanics maybe are those with many years of experience or those freshly from the training as registered nurses.

4.2.3 SECTION C: PRACTICES ON OCCUPATIONAL HAZARDS

6. Handling of used needles and sharp instruments

Knowledge will be worth it, if it is cultivated into practice. It does not serve any purpose if the registered nurses have indicated their knowledge on occupational hazards to their level best but they are not practicing what they know.

The majority of the respondents that is 45 (90%) indicated that used needles as well as sharp instruments are discarded directly after use into a special container for sharp instruments. That is taken for incineration/burning on a regular basis when it is full. The following additional handlings of used needles/sharps were listed:

- Avoid recapping/disconnecting used needles
- Keep containers for sharp instruments closed tightly and out of reach of patients.
- Sharp instruments such as scissors are kept safely and send to CSSD for sterilization.
- Use gloves to handle used needles and sharps
- Containers for used needles and sharps must be strong enough.

Only one 1 (2%) respondent indicated that needle caps must be put back before discarding into a container for sharp instruments.

Although only five 5 (10%) respondents indicated that used needles and sharps are placed in dustbins, boxes, thrown in latrines (toilets), not reconnected and not disconnected/recap needles.

It is an alarming figure if one considers the serious consequences of this practice. Ignorance among registered nurses could influence this response. On the other hand, non-availability of incinerating services to some health facilities such as clinics may cause the practice of discarding sharps in latrines. People are making use of the available resources.

7. Immunization status against Hepatitis B

Exposure to Hepatitis B is one of the serious occupational risks that a nurse may get as a blood borne disease. Nurses need to be protected from these preventable diseases. Hepatitis B is very common and only few nurses are not exposed to this condition which may be life threatening resulting in death and other permanent complications such as cancer of the liver. According to the health belief model, health workers would be able to prevent occupational hazards if they believe that those hazards have serious consequences such as disability, death and social effects in life or work (Glanz et al 1990: 49).

Twenty-two 22 (44%) respondents indicated that they have received immunization against Hepatitis B. An alarming 28 (56%) respondents have not received any vaccine against Hepatitis B. A variety of reasons for not being immunized may support these figures as they will follow.



Fig.4.2 Received Immunization against Hepatitis B

7.1 Reasons for being immunized against Hepatitis B

Fourteen (14) 28% respondents indicated that they were immunized against Hepatitis B because they were exposed to caring patients who were diagnosed with Hepatitis B. An extensive explanation from one (1) 2% respondent is that the patient died one day after being diagnosed with Hepatitis B. Glanz et al (1990: 48) indicated that health workers would be able to prevent occupational hazards if there is perceived threat of the disease. Nurses are threatened by those fatal occupational diseases.

Four (4) 8% respondents indicated their reasons each as follows:

- To strengthen the immune system against the disease.
- Was about to travel abroad as a precautionary measure.
- Routine care for health worker in the unit/ward

- Routine care given while in the first year of training as a student nurse in Windhoek.

7.2 Reasons for not immunized against Hepatitis B.

Ten (10) 20% respondents indicated that they have never received Hepatitis B immunization because they were not exposed to or in contact with Hepatitis B patient.

Other reasons given for not vaccinated include:

- Ignorance
- Were never tested for antibodies
- Were never infected with Hepatitis B virus

Financial or economic constraints were indicated by 4 (8%) respondents. An extensive explanation which was given is that Hepatitis B immunization is on the health worker's own cost. It is expensive and if one is in need she/he has to buy it. An example is that in case if the vaccine is not available in the hospital then health workers should buy it from the private pharmacy.

Lack of information regarding where, when and who is responsible to provide the vaccine to health workers was indicated as reasons by six (6) 12% respondents. One (1) 2% among those, indicated that she has never heard about it at their unit.

This is an indication that not all the registered nurses have information about these serious diseases.

Four (4) 8% indicated that they were not immunized against Hepatitis B because there is no policy or guideline for it. Further explanations are that Hepatitis B immunization is not indicated in the National immunization schedule. Health workers are just exposed.

Three (3) 6% did not respond to the question. While one (1) 2% respondent indicated that he does not have any specific reason for not being immunized against Hepatitis B.

8. Responses as to whether any other prophylactic treatment against infectious diseases were received

Twenty-two (22) 44% respondents indicated that they have received other prophylactic treatment. Twenty-eight (28) 56% indicated that they have never received any other prophylactic treatments.


Fig 4.3 Received any other prophylactic treatment

Recived any other prophylactic treatment

8.1 Responses on the other type of prophylactic treatment received against infectious diseases and the reasons for receiving it.

Sixteen (16) 32% responded that they have received prophylactic treatments against meningitis. That include: - meningococcal vaccine

- Ciprofloxacin 500mg/cefriaxone 500mg.
- Rifampin

The following reasons for receiving these were indicated as:

- Were exposed to or caring for a patient diagnosed with Meningitis
- Assisted the doctor during surgery to a Meningitis patient.
- An outbreak of Meningitis in 1994.

One (1) 2% respondent among those above added that she received a flu-vaccine due to recurrent attack.

Three (3) 6% indicated that they have received a prophylaxis against HIV/AIDS. These include:

- ARV (Anti-retroviral drugs)
- Retrovir 100mg BD for 1/12
- 3TC 150mg x 3 for 1/12
- Ambiae

The reasons indicated are as follows:

- Were pricked by a used needle while suturing episiotomy.
- Blood flashed into an eye while suturing episiotomy.

It was then indicated that on the case of needle-prick injury, the patient was tested HIV positive. This is an indication that nurses in the obstetric unit are highly exposed to blood borne diseases because their work exposed them extensively. The remaining three 3 (6%) responded that they have received the following prophylaxis respectively:

- TB prophylaxis while working in the TB unit then developed prolonged cough.
- Plague prophylaxis because of exposure to/treating patient with pneumonic plague, who later passed away within 24 hours after admission.
- Rabies vaccine following a bite by the patient who was suspected suffering from Rabies.

9. Responses on whether sometimes lifting/turning/getting up weak patients have to be done

The majority of the respondents that is 47 (94%) indicated that sometimes they lift/turn/get up weak patients. This indicates that many patients are not able to help themselves. They may either wholly or partially dependent on nurses due to their serious illnesses. Only 2 (4%) respondents did not have to lift/turn/get up weak patients. These might be the respondents from either primary health care or antenatal care. One (1) 2% did not respond to the question.

Responses	Frequency	Percentage
Yes	47	94.0
No	2	4.0
Total	49	98.0
Missing / No answer	1	2.0
Total =	50	100.0

Table 4.6 Lift/turn/get up weak patients

9.1 Responses on whether particular attention is paid when lifting/turning/getting up weak patients

Among 47 (94%) respondents, 42 (84%) replied "Yes" to the question whether patients are turned and lifted and give particular attention to the correct body mechanics when lifting, turning or getting up weak patients.

Four (4) 8% did not particularly pay attention to the correct body mechanics. One (1) 2% has indicated that it is not so often that the correct body mechanics is considered. The last one (1) 2% did not respond to the question.

10. Washing of hands on duty

All the respondents, that is 50 (100%) indicated that they wash their hands on duty to prevent or reduce cross infections. Other reasons that were given include:

- Hygienic purposes
- Feel free while on duty
- To be clean and free from germs.

That serves as an indication that nurses do understand the importance of hand wash and it is well practiced.

10.1 Responses as to when hand wash is done while on duty.

Thirty-nine (39) 78% respondents confirmed that hands are washed before and after every procedure or patient. Other detailed indications include the following:

- After handling bedpans/urinals/any contaminated materials.
- Before and after bed making.
- Before and after meals
- After toilet use
- When scrubbing for operation
- After cleaning instruments
- After handling specimens
- On arrival and before knocking of from duty
- Before injections and baby weighing

This indicates that hand washing on duty is done regularly, although it is not done regularly by everyone/nurse.

Nine (9) 18% respondents indicated that they only wash hands after every procedure or after contact with patients. One (1) 2% respondent did not indicate clearly but rather listed the following:

Prepare procedure, use toilet, when going home and touch patient.
 Only one (1) 2% of the sample did not respond.

10.2 Responses on whether there are any restrictions experienced on the ability to wash hands regularly

Nurses need to be provided with adequate materials to reduce occupational hazards. This is done through the efforts of the management. Circumstances beyond human beings control may also contribute to occupational hazards among nurses. Although nurses are willing to prevent/control cross infection while on duty, they are not able to do so due to some obstacles that are experienced. That was indicated by (25) 50% respondents who experience restrictions when they want to wash their hands regularly on duty. Twenty-four (24) 48% respondents indicated that they do not experience any restrictions on their ability to wash hands regularly. One (1) 2% did not respond to the question.

Responses	Frequency	Percentage
Yes	25	50.0
No	24	48.0
Total =	49	98.0
Missing / No answer	1	2.0
Total =	50	100.0

Table 4.7 Restrictions on ability to wash hands regularly

10.3 Types of restrictions experienced on the ability to wash hands regularly on duty

Twelve (12) 24% respondents indicated that there are times that water is unavailable due to the following reasons:

- No water/running water in the health facility
- No water taps in the patients rooms
- No soap available
- Delayed repair of facilities

Four (4) 8% indicated that they are restricted from washing hands on a regular basis because they are too busy in the ward/unit. The following explanations were added:

- "Not enough time to wash hands due to shortage of staff and too much work".
- "No hand disinfectant available to use in cases of unavailability of water".

Six (6) 12% respondents gave irrelevant answers to the question, such as after dressing, injection, examine patient, and remove stitches, preventing diseases, before and after procedure, after using toilet, before eating. Three (3) 6% did not respond.

11. Use of gloves, aprons, face masks and spectacles or goggles on duty

Twenty-one (21) 42% respondents indicated that they use gloves, aprons, face masks and spectacles/goggles. Another (21) 42% responded that they only use gloves, aprons and facemasks. Four (4) 8% respondents indicated that they only use gloves and aprons on duty. One (1) 2% respondent indicated that he/she uses gloves and face masks. Two (2) 4% do not use any of these protective measures. One (1) 2% respondent uses gloves when necessary.

11.1 Responses as to when is the gloves, aprons, facemasks and goggles/spectacles are being used

The majority of the respondents, that is 48 (96%) of the sample indicated that they use gloves while on duty during the following occasions:

- When withdrawing/touching blood/handling specimens
- When put up drips
- During bed making
- During physical examination of patients especially of private parts
- When washing soiled lenins.
- During wound dressing/suturing
- When in contact with contaminated materials and patients
- During sterile procedures
- When doing full wash
- During patient examination

- During delivery
- During dusting
- When scrubbing for operation

These were the occasions listed depending on the different units/wards of the respondents. Those who have indicated that they use aprons the following situations were mainly listed:

- Aprons are used when assisting the doctor during operations
- During wound irrigation
- When exposed to flushing fluids
- When handling dead bodies
- When turning patients
- In cases of accidents
- While in the sluice room

It was also indicated that face masks are used:

- During operations
- When entering the operating room
- During sterile procedures
- When a staff is suffering from flu
- In cases of infectious diseases
- During delivery, suturing,
- When caring of burning wounds
- When exposed to airborne diseases i.e. TB/any cough
- When handling septic cases/bad smell
- When working in communicable ward/unit.

Spectacles/goggles were mainly used in operations. Other occasions where spectacles were used include:

- When performing any procedure that is likely to produce either blood/any type of fluid/substances/fumes/chemical that may flush into eyes.
- During deliveries and D + C procedures
- When suctioning a patient with severe cough
- When cleaning ophthalmic instruments

11.2 Reasons for not using gloves, aprons, facemasks and spectacles/goggles

Protective measures are used in order to protect health workers against infections or contaminations whenever it is necessary. There are those units or departments that do not need protective measures although nurse-patient contact is there. Departments such as primary health care, especially at the immunization clinic, nurses do not need to use protective measures. That is supported by (2) 4% respondents who have indicated that they do not use any protective measures because they are not working with sick people/infectious diseases. It was also explained that they neither do sterile procedures.

Non-availability of facilities may also contribute to protective measures not to be used. Sixteen (16) 32% responded that they do not use spectacles/goggles on duty due to the following reasons:

- Scarce resources which causes non-availability of goggles in some departments, only available in the labour room.
- No supply to all departments
- Not needed in communicable ward
- Not available at the health centres

Nine (9) 18% did not indicate the reasons for not using spectacles/goggles on duty. Three (3) 6% also did not indicate the reasons for not using the face masks. Only one (1) 2% have indicated that facemasks are not always in stock.

11.3 Responses as to why gloves, aprons, face masks and spectacles/goggles are used

Nurses are nowadays exposed to serious risks at their working environment. The fear of being infected among nurses will lead to either misusing of the available resources or not considering patients who are being cared for. Nevertheless, nurses need to understand the reasons for using different preventive measures so that the resources will be used effectively and efficiently.

A total number of (46) 92% respondent indicated that they use gloves to prevent cross infections or contamination from patient to nurses and vice-versa.

Other reasons included:

- To maintain aseptic/sterility
- To avoid touching fluids and soiled materials with bare hands.
- Is done as a precautionary measure for protection.

It was indicated that aprons are used in order to protect nurses' uniforms from being contaminated by either blood, pus or other fluids. Face masks are used to prevent respiratory infections such as TB bacteria, flu and to avoid bad smell. They are also used to protect the face and avoid contamination of mouth with fluids.

Spectacles/goggles, when applicable, are used in order to avoid fluids that are liquor, blood from contaminating eyes of nurses.

It was further explained that they prevent cross infections and chemical injuries to the eyes. From the reasons provided, one can assume that nurses do understand occupational safety. A little should be done to make sure that every nurse is knowledgeable on that. On whatever is being initiated the effective and efficient use of resources should always be considered.

Two (2) 4% respondents gave irrelevant answers to the question such as sterile procedures, infective cases, dressing. This might be indicative of ignorance about the reasons for using goggles/spectacles. For (2) 4% respondents the use of any protective measure was not applicable.

4.2.4 SECTION D: RESPONDENTS' UNDERSTANDING ON STRATEGIES/GUIDELINES THAT GUIDE PRACTICES ON OCCUPATIONAL SAFETY

12. Responses on whether information regarding prevention of occupational hazards is provided

Nurses are working in a hazardous environment, but they are entitled to care for their patients in the safest environment.

Safe working environment can be created mainly through education in order to reduce occupational hazards. Glanz et al (1990: 48) indicated that cues to action through education and media information would reduce occupational hazards.

The majority of respondents, 43 (86%), indicated that they are provided with information on the prevention of occupational hazards. Only (7) 14% respondents indicated that they were not provided with the information on how to prevent hazards on duty.

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Responses	Frequency	Percentage
Yes	43	86.0
No	7	14.0
Total =	50	100.0

12.1 Means through which information is provided

A total number of 34 (68%) respondents indicated that the information concerning occupational hazards and safety was provided to them mainly through in-service training and guidelines/policies from the Ministry of Health and Social Services.

Other ways of providing information to nurses which were indicated include:

- Health education
- Pamphlets/leaflets/Booklets
- Interpersonal discussion
- Informal clinical situation teaching
- Teachable moments
- Circulars/Protocols
- Handouts in wards
- Policy manuals from different agencies
- Reports
- Infection control
- Radio, television
- Self-learning

It seems that some registered nurses are just using the information they have learned while in training. Four (4) 8% indicated that the information is provided during classroom lectures on medico-legal hazards, during the training or training course and through nursing college respectively.

Three 3 (6%) respondents gave irrelevant responses such as HIV/AIDS and STD, PHC, inform all the staff about hazards to reduce them during working hours. This indicated that few registered nurses still need to be informed/educated. The remaining two (2) 4% respondents did not respond.

12.2 Responses on adequacy of the provided information

As many as 36 (72%) respondents indicated that the information which was provided to them regarding occupational hazards and safety was not enough. Only 11 (22%) of the sample indicated that they were provided with adequate information. Three 3 (6%) respondents did not respond to this question. There is an indication that nurses need to be provided with more information regarding occupational hazards and safety.

Responses	Frequency	Percentage
Yes	11	22.0
No	36	72.0
Total	47	94.0
Missing / No answer	3	6.0
Total	50	100.0

Table 4.9 Adequate information

12.3 Suggestions to improve communication of information regarding occupational hazards and safety

A total number of 36 (72%) respondents suggested the following:

- Guidelines and Policies to be provided at each unit.
- Enough booklets or leaflets on occupational hazards and safety to be distributed everywhere, that is in all units/wards/departments.
- In-service training to be done on a regular and continuous basis.
- Increase information through the media that is radio, television.
- Several workshops to be carried out.
- Strengthen communication in every unit's notice boards.
- Provision of posters to raise awareness on occupational hazards.
- Hospital to produce its journal on a weekly basis.
- A well trained occupational nurse to teach health workers on issues related to prevention and treatment of occupational hazards.
- Develop nursing news from the Ministry of Health and Social Services.
- Routine check up of health workers should be done regularly.
- Mass meetings should be done.
- Workshops on occupational hazards and safety to be done at least yearly.
- Clinics supervisions on occupational safety to be done.
- Provide sessions with occupational psychologist to teach workers on how to cope with psychological problems related to work.

- Update the information on occupational hazards and safety every year.
- An on-going refresh course to be introduced.
- Orientation by supervisors to new members should be strictly done.
- Provision of leaflets in local languages, which are in simple words and understandable.
- Preferably, people should provide information rather than pamphlets as they are speechless.

13. Responses on whether support is provided in case of suffering from occupational injury or illness of any kind

Twenty-eight (28) 56% respondents indicated that they are provided with support when injured on duty. Seventeen (17) 34% respondents indicated that there was no support provided to them while suffering from occupational injury/illness. Three (3) 6% respondents indicated the following respectively, that the support was not always provided, one is not sure because managers/supervisors tend to influence the provision of support and the other one said is not applicable. Two (2) 4% respondents did not respond to the question.

13.1 Types of support provided in case of occupational injury/illness

Among the respondents who have indicated that they get support, twenty (20) 40% indicated that they were provided with post exposure prophylaxis (anti-retroviral therapy) against HIV/AIDS following a needle-prick injury. Other supports that were indicated include medical aid scheme and counseling.

Four (4) 8% respondents indicated that the support was received from employee's workmen's compensation which provided financial support. Two (2) 4% respondents indicated that moral support and treatment was provided. Four (4) 8% of the respondents gave irrelevant answers to the question respectively as follow: encourage others not to get hazards, gloves, and guidelines for self-care

during illness to be provided and medication.

14. Knowledge on any other available guideline on occupational hazards/safety

Twenty-two (22) 44% respondents indicated that they are aware of other guidelines in place that deal with occupational safety.

Twenty-seven (27) 54% respondents did not know about any other guidelines which deal with occupational safety. One (1) 2% did not respond to this question.

Responses	Frequency	Percentage
Yes	22	44.0
No	27	54.0
Total	49	98.0
Missing / No	1	2.0
answer		
Total	50	100.0

Table 4.10 Guidelines in place dealing with occupational safety

14.1 Other guidelines that are in place for occupational safety

On this question the respondents were expected to mention guidelines other than those that are already in the questionnaire. Nevertheless a total of twenty (20) 40% respondents have listed the following guidelines:

- Needle-prick injury
- Post exposure prophylaxis
- Disposal of used needle/sharp instrument
- Use of protective measures
- Reporting of injury on duty
- Self-care, support and treatment
- Workmen's compensation act
- Prophylactic treatment of Meningitis
- Infection control guidelines
- Hepatitis B prophylaxis
- Regulations / Labour Act

- Circulars
- Hand wash guideline
- Lifting of patients
- Cleaning of the floor guideline

Two (2) 4% respondents provided irrelevant answers such as "not applicable" and TB, STD, Malaria, FP and Immunization guidelines.

14.2 Suggestions on additional guidelines that deal with occupational injuries

Nineteen (19) 38% respondents suggested that the following guidelines will be of use in dealing with occupational hazards.

- A guideline when sustained back injury on duty
- Guideline when accidentally hit by a psychiatric (aggressive) patient.
- Guideline when fell down on duty and sustain fractures.
- A guideline on the procedures to be followed when a worker sustain injury/illness or picked up a disease at work.
- Guideline when one is bitten by a suspected Rabies patient.
- Guidelines for Hepatitis B, Meningitis and Tuberculosis to be made available for every nurse.
- Occupational hazard policies
- Guideline on body mechanics
- Guideline on compensation (to be made known to everyone)

Four (4) 8% did not give their suggestions. Three (3) 6% gave vague answers to the question such as training, video. One (1) 2% respondent indicated that it is "not known"

4.3 SUMMARY

All the fifty (50) questionnaires that were distributed to the registered nurses in Onandjokwe Health District were returned. Statistical analysis was done using the computer and with the assistance of the statistician. The respondents' ages ranging from 20 to 59 years old. The majority of the respondents were females than males just because nursing is the profession originally for women. Their years of experience were from less than five to more than twenty years. All the departments in the hospital as well as health centres and clinics in the district were represented.

In Onandjokwe Health District the majority of (88%) registered nurses have knowledge on occupational hazards which including the types of risks the ways that expose nurses to risks on duty, preventive measures and procedures to be followed in case if injury on duty occurs. Although there are still few (12%) respondents who did not understand occupational hazards and safety.

Ninety percent (90%) of the respondents also indicated that the knowledge that they have on occupational hazard and safety, is cultivated into practice.

That was indicated when most of the registered nurses indicated that they follow guidelines on: handling of used needles/sharps exposure to Hepatitis B / other communicable infections, hand wash, protective measures and lifting/turning/getting up weak patients. Those are some of the most things which expose nurses to risks on duty if they are not done / done incorrectly.

Nevertheless, restrictions are always available which prevent all the nurses to practice occupational safety. These include lack of resources, ignorance, poor understanding, and too much work/shortage of staff, just to mention but a few.

It was indicated that the information regarding prevention of occupational hazards is provided to the nurses. Information is then provided in many different ways such as policies, guidelines, training, meetings and others. Support is rendered to some of the registered nurses in case of suffering from occupational injury/illness. It was also indicated that there are some guidelines in place to deal with occupational hazards. In all those, some registered nurses stated that no information is provided to them and no support is given when one is suffering from an injury on duty.

They do not even know whether there are some other guidelines on occupational hazards. It is encouraging because the majority that understands will easily educate and influence others, through the assistance of the employer and management.

CHAPTER 5

LIMITATIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

In this chapter a summary of the study and the findings, conclusions, recommendations based on the findings of the study and limitations will be presented. A study of this nature was seen to be important because patients/clients are expected to prevent diseases. It is therefore important that nurses practice safety in their every day work.

5.2 LIMITATIONS OF THE STUDY

Insufficient time

There was not sufficient time to conduct this study due to some other commitments. Since the researcher was having other responsibilities time was so limited. These studies need more time to consult and collect sources of relevant information.

Poor return of questionnaires

The questionnaires took time to be returned back due to high work load in the units. Nurses were so busy in the clinical area and it was difficult for them to take some minutes to complete the questionnaires. The researcher spent most of the time following up the questionnaires.

Limited Resources

No same study was conducted before, therefore the researcher found it difficult to compare as to what was done before.

5.3 CONCLUSIONSAND RECOMMENDATIONS ABOUT OBJECTIVES

The findings of the study are concluded and recommended in relation to the objectives of the study as follows:

Objective 1

To determine the extend of the knowledge on occupational hazards amongst registered nurses in the Onandjokwe Health District.

Conclusion

Section B of the questionnaire was compiled with seven (7) questions to determine the existing knowledge of the registered nurses on occupational hazards.

It was evident that a significant number of registered nurses have knowledge on occupational hazards. This was indicated in the study by extensive definitions of occupational hazards that it is physical, mental and spiritual injuries/illnesses that are faced while on duty.

It can also be concluded from the responses that most of the registered nurses have knowledge on the ways that they can be exposed to occupational hazards such as handling of sharp instruments, lifting of patients, exposure to psychological problems due to frustrations, exposure to airborne diseases and aggressive patients.

However there were few (6) 12% registered nurses who could not explain occupational hazards. This might be indicative of the inability to express themselves in English or of ignorance. Most of the registered nurses indicated that they know the preventive measures as well as the procedures to be followed in cases of injury on duty.

Only few (3) 6% registered nurses who seems that they do not have knowledge on occupational hazards.

The study has indicated that the diseases that can be transmitted through needle-stick injuries are mainly HIV/AIDS and Hepatitis B.

From this one might conclude that registered nurses have knowledge on blood borne infections caused by needle-stick injuries. According to literature, blood borne infections such as Hepatitis B, C and HIV/AIDS pose a serious risk to health care workers (Alam 2002: 397). Other diseases which were mentioned were meningitis, syphilis (RPR), Kongo fever, Malaria, tetanus, TB and others. This is an indication that a lack of knowledge occurs on the transmission of diseases.

The study findings also revealed that there is no guideline in place for body mechanics, as it was indicated by 32 (64%) respondents, although nurses are exposed to lifting/turning/getting up weak patients.

And most of the registered nurses 18 (36%) indicated that body mechanics guidelines were available. Some registered nurses were not aware about the content of the correct body mechanics when lifting/turning/getting up patients.

According to literature, many nurses are suffering from severe to chronic backache due to over exertion in lifting patients (Steiler et al 2003: 2 cites American Nurses Association 2000).

Recommendations

The researcher strongly recommends that the knowledge on occupational hazard and safety among nurses should be improved through the following means:

- Workshops, in-service training, mass meetings and refresh courses providing information on occupational hazards and safety should be attended by registered nurses on a regular basis. This information should be revised and kept up to date all the time. A well trained occupational nurse should be appointed to educate health workers on the prevention and management of occupational hazards. Additionally an occupational psychologist should be introduced to teach health workers on how to cope with stress and emotional disturbances within the working environment.

- Nursing newsletters, journals and periodicals on occupational hazards and safety should be made available to personnel.
- Orientation to new staff members should be done in each unit/department on occupational hazards and safety.

Objective 2

To determine the extend to which registered nurses practice occupational safety in Onandjokwe Health District.

Conclusion

Sixteen (16) questions in section C of the questionnaire were compiled to determine the extend to which registered nurses practice occupational safety.

Forty-five (90%) of the respondents have evidently indicated that they discarded used needles and sharp instruments into the containers for sharp instruments. Although only 5 (10%) respondents seem not to practice occupational safety. Glanz et al (1990: 48) indicated that care givers will be able to control occupational hazards if they believe that a course of action which is prevention would be beneficial to them.

It was evident that registered nurses (90%) try to practice occupational safety but they experience some restrictions on their ability to do so. These restrictions include: non-availability of facilities (materials), shortage of staff, high workload which reduces time and inadequate knowledge. The literature revealed that nurse compliance with universal precautions is affected by the availability of protective equipment and perceived commitment of the management and inadequate knowledge.

It was indicated that used needles and sharp instruments are discarded in the container for sharps for incineration.

One (1) 2% registered nurse indicated that used needles need to be recapped before being discarded. This indicates that some nurses do not practice occupational safety, which may be due to inadequate knowledge.

It was revealed in the literature that many of the needle-stick injuries are caused by recapping before disposal into containers or by unnecessary opening of these containers (Oulton 2000: 9).

The study revealed that 44% of the registered nurses have received Hepatitis B prophylactic treatments due to exposure to injuries/illnesses on duty.

Other prophylaxes received were: post-exposure prophylaxis against HIV/AIDS, TB prophylaxis, plague prophylaxis and Rabies vaccine prophylaxis.

However there are 56% registered nurses who have never received any prophylaxis on duty due to the following reasons: not aware about the policy/guideline, not exposed, ignorance and non-availability of the respective policy. Fourty-seven 49 (94%) respondents indicated that they lift/turn/get up weak patient on duty. It was evident that only 84% gave particular attention to correct body mechanics when lifting/turning/getting up patients. This indicates that nurses are at risk of developing severe/chronic backache due to this problem. Although only 12% who did not pay attention to correct body mechanics.

It was indicated by 100% of the respondents that hand wash on duty is done regularly except in cases if the facilities or materials are unavailable. Protective measures are also used when available. These include gloves, aprons, face masks and spectacles/goggles.

Recommendations

- Adequate resource materials should be provided at all times. These include disinfectants, soaps, and water basins in patient's rooms, gloves, aprons, face masks, goggles and other materials that can be used to ensure occupational safety among nurses.
- Awareness meetings on the effective use of the available resources should be done regularly in each ward/department.
- Continuous evaluations and supervisions should be done regularly to ensure safe working environment.
- An on-going refresh courses on occupational hazards and safety should be introduced.
- More nurses should be trained and recruited in order to provide adequate staff-to-patient ratio.

- This should be considered due to the shortage of staff and high rate of patients faced within the health sectors.
- Routine check-ups of nurses should be done regularly to ensure occupational health.

Objective 3

To identify strategies/guidelines that are in place dealing with occupational safety in Onandjokwe Health District.

Conclusion

Nine questions were compiled in Section D of the questionnaire to identify strategies or guidelines that are in place dealing with occupational safety.

The study revealed that nurses are provided with information regarding occupational hazard, although that is not done to all the nurses (*refer to table 4.8*). The information is provided through health education, pamphlets, clinical teaching, policies/guidelines, medias and others. However, 36 (72%) respondents indicated that the information which was provided is inadequate, whereby suggestions to improve communication of such information were given. These include provision of guidelines to all health workers, provision of booklets/pamphlets on occupational hazards/safety, in-service training, conducting of workshops and others.

It can also be concluded that 56% of the respondents were supported mainly with post exposure prophylaxis against HIV/AIDS when injured on duty. Other supports that use to be provided are compensation, counseling or moral support. Whereas there were those 34% respondents who felt that support is not rendered at all. It is an indication that support is not rendered equally to all the nurses.

One can also conclude that there are some strategies/guidelines for occupational safety in place such as: needle-stick injury, disposal of used needles/sharps, post - exposure prophylaxis, use of protective measures, hand wash and others. Nevertheless, additional guidelines were suggested. Provision of irrelevant or no answers to some questions are indications of inadequate knowledge on the topic or may be ignorance.

Recommendations

The following recommendations were made and they are based on the suggestions made by respondents under this section.

Provision or communication of information regarding occupational hazards and safety should be improved. Glanz et al (1990: 48) indicated that cues to action, education and media information should be provided in order to prevent occupational hazards.

- Policies, guidelines, enough booklets/leaflets and pamphlets/posters regarding occupational hazards and safety should be provided and distributed to all the units/departments, so that every nurse will be able to read.
- Provision of leaflets and pamphlets on occupational hazards/safety should also be done in local languages to ensure that the message is clear to every nurse.
- Unit supervisors should strengthen the effective communication regarding occupational hazards and safety to the subordinates in the wards. This can be done through in-service training, mass meetings and workshops.
- Media such as televisions and radios should be used to inform the public on issues related occupational hazards and safety.
- Provision of support in case of occupational injury or illness should be equally rendered to all the nurses.
- Additional guidelines related to occupational hazards and safety should be introduced.

The following aspects should have clear guidelines:

- when sustained back injury on duty
- when accidentally hit by a psychiatric/aggressive patient.
- When fell down and sustain fractures on duty
- when picked up a disease at work/on duty
- when bitten by a suspect Rabies patient

- correct body mechanics when lifting/turning/getting up weak patients and
- a guideline on compensation should be made known to every nurse.

Other guidelines on Hepatitis B, Meningitis and Tuberculosis should be made available to every nurse.

5.4 RECOMMENDATION FOR FUTURE RESEARCH

• A similar study need to be conducted in all the regions in Namibia.

5.5 CONCLUDING REMARKS

This study aimed at determining the existing knowledge and practices of the registered nurses and strategies that are in place to guide practice on occupational hazards and safety in Onandjokwe Health District.

In order to achieve this goal, a survey was conducted whereby a quantitative, exploratory and descriptive design was used.

A questionnaire was used by the researcher to collect the data from the registered nurses who were working directly with patients in the district. An instrument was designed in a way that it covers all the dimensions in the aim of the study.

Data analysis was done with the assistance of the statistician and the data were presented in a form of descriptive statistics, tables and graphs.

Ethical issues were considered for instance by obtaining the permissions from the relevant authorities. Validity and reliability of the instrument used were considered.

As the study focused on the knowledge and practices among registered nurses on occupational hazards as well as on the guidelines that are in place to guide occupational safety. It was revealed that a significant number of registered nurses have knowledge on occupational hazards, although few numbers have insufficient knowledge. Registered nurses try to practice occupational safety and there are some restrictions which prevent them from safety practices such as non-availability of facilities. It was also indicated that there are some existing guidelines for occupational safety. The study reveals that information and assistance when injured on duty is not rendered to all the registered nurses.

However, inadequate knowledge and poor practices on occupational hazards and safety among some registered nurses were identified. The study has concluded that information on occupational hazards and safety should be provided on a regular basis in different ways. It was further concluded that additional guidelines on other occupational risks, should also be developed. Recommendations were made on the aspects that need improvement to ensure safe working environment and unnecessary losses at work. It is indeed believed that the findings of this study will contribute to the improvement of knowledge and practices on issues pertaining to occupational health and safety among nurses. It is further trusted that this study will influence the development of guidelines or strategies on different occupational hazards to which nurses are exposed.

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ANNEXURE A

Applications for permission to conduct research in Onandjokwe Health District

PO Box 2240 ONDANGWA Namibia 31 MAY 2004

Enquiries: J. Tuvadimbwa Tel: (065) - 240111 x 2301 (W) Tel: (065) - 241519 (H)

THE PERMANENT SECRETARY

Ministry of Health and Social Services Harvey Street Private Bag 13198 WINDHOEK Namibia

Dear Sir

RE: APPLICATION FOR PERMISSION TO CONDUCT A RESEARCH PROJECT IN ONANDJOKWE HEALTH DISTRICT

I am a Master of Public Health (MPH) student at the University of Namibia. As a requirement of the study, I would like to conduct a research project in Onandjokwe Hospital, Health Centers and Clinics.

My research topic is "Knowledge and practices among Registered Nurses on occupational hazards in Onandjokwe Health District."

The study is intended to determine the existing knowledge and practices of the registered nurses and strategies that are in place to guide practice on occupational safety in Onandjokwe Health District.

Attached find a copy of the approval letter from UNAM, research proposal and the questionnaire.

Hopefully my application will receive your favourable attention.

Yours sincerely

who

Julia Tuvadimbwa

PO Box 2240 ONDANGWA Namibia 3 May 2004

Enquiries: J. Tuvadimbwa Tel: (065) - 240111 x 2301 (W) Tel: (065) - 241519 (H)

THE MEDICAL SUPERINTENDENT Onandjokwe Lutheran Medical Services Private Bag 2016 ONDANGWA Namibia

Dear Sir

RE: APPLICATION FOR PERMISSION TO CONDUCT A RESEARCH PROJECT IN ONANDJOKWE HEALTH DISTRICT

I am a Master of Public Health (MPH) student at the University of Namibia. As a requirement of the study, I would like to conduct a research project in Onandjokwe Hospital, Health Centers and Clinics.

My research topic is "Knowledge and practices among Registered Nurses on occupational hazards in Onandjokwe Health District."

The study is intended to determine the existing knowledge and practices of the registered nurses and strategies that are in place to guide practice on occupational safety in Onandjokwe Health District.

Attached find a copy of the approval letter from UNAM.

Hopefully my application will receive your favourable attention.

Yours sincerely

Julia Tuvadimbwa

PO Box 2240 ONDANGWA Namibia 3 May 2004

Enquiries: J. Tuvadimbwa Tel: (065) - 240111 x 2301 (W) Tel: (065) - 241519 (H)

THE PHC DISTRICT SUPERVISOR Onandjokwe Health District Private Bag 2016 ONDANGWA

Namibia

Dear Madam

RE: APPLICATION FOR PERMISSION TO CONDUCT A RESEARCH PROJECT IN ONANDJOKWE HEALTH DISTRICT

I am a Master of Public Health (MPH) student at the University of Namibia. As a requirement of the study, I would like to conduct a research project in Onandjokwe Hospital, Health Centers and Clinics.

My research topic is "Knowledge and practices among Registered Nurses on occupational hazards in Onandjokwe Health District."

The study is intended to determine the existing knowledge and practices of the registered nurses and strategies that are in place to guide practice on occupational safety in Onandjokwe Health District. Therefore, the study population is all the Registered Nurses in Onandjokwe Health District.

Attached find a copy of the approval letter from UNAM.

Hopefully my application will receive your favourable attention.

Yours sincerely

Julia Tuvadimbwa

ANNEXURE B

Letters of permission from the Ministry of Health and Social Services, Onandjokwe Hospital Management and Onandjokwe PHC District Supervisor



REPUBLIC OF NAMIBIA

Private Bag 13198 Windhock Namitia	Ministerial Building Harvey Street Windbook	Tol: (061) 2032125 Fax: (061) 227607 E-mail:
Enquiries Mr.A. Muh	na Ref.: 17/11	Date: 18 November 2004
Ms. J. Tavadimirwa P.O. Box 2240 Ondangwa	OFFICE OF THE PERMA	NENT SECRETARY
Dear Ms. Tavadimitwa		
Re: Knowledge and pra health district	actices among registered and	es on occupational hazards in Onandjo
1. Reference is mid	e to your application to conduc	t the above-mentioned study.
2. The proposal has	been evaluated and found to h	eve merk.
eenditions: 3.1.1. The data collecte 3.2. A quarterly progr 3.3. Postiminary field 3.4. Final report to be 3.5. Separate permiss findings. Walking you success with Yours sincerely. DR. K. SHANGULA PERMANENT SECRE	E is only to be used for your ac ran report is to be solumitted to rays are to be solumitted to the l submitted upon completion of los to be sought from the Mini h your mainter	ademic porposes; the Ministry's Research Unit, dimistry before the final report; the study; thy for the publication of the
Directorate: Pelicy, Plana Subdivision: Management	ing and HHD Information and Research	

LUTHERAN MEDICAL SERVICE

ONANDJOKWE HOSPITAL PRIVATE BAG 2016 ONDANGWA NAMIBIA

PRACTECE NO: 067 000 0012572 E-mail Ins@infrica.com.on

TELEPHONE 065 -240111/248111/2/3 FAX 065 - 240688

Enquiries: Mrs. P. Akudhenga

08.06.04

TO:

J. Turadimber Dear Mf/Ms: Student No: Knowledge and Research Topic: brachies among Started hazarda en NE parlimar Health Distor. day mohis levere

SUBJECT: PERMISSION TO CONDUCT A RESEARCH PROJECT

This is to inform you that your application to conduct a research in Onandjokwe Health District has been approved.

We wish you all the best throughout your study.

Amaambo DICAL SUPERINTENDENT - LMS



9-010001

REPUBLIC OF NAMIBIA

Ministry of Health and Social Services

PHC - Office Onandjakwe

10/05/04

To. Mrs. J. Tuvadimbus Tel. 065-240111 ext. 2301 (w) 065-241519 (h) Cell. 0812754939

Deer Modern

Thank you for selected Onondjokwe district for your research purposes.

I would like to inform you that a permission to conduct a research Project in Onendjokwe District is granted to you.

This course in the

Thank you and all of the best.

Albandela

MRS. S. MBANDEKA

Forward with Realth for all Nanihism by the Year 2005?

ANNEXURE C

Letter to the respondents

TO: Registered Nurses ONANDJOKWE HEALTH DISTRICT

TITLE RESEARCH ON KNOWLEDGE AND PRACTICES AMONG REGISTERED NURSES ON OCCUPATIONAL HAZARDS IN ONANDJOKWE HEALTH DISTRICT

I am Julia Tuvadimbwa, a Master in Public Health (MPH) student at the University of Namibia. As part of the course requirement, I'm conducting a research on the abovementioned topic.

The purpose of the study is to determine the existing knowledge and practices of the Registered Nurses and strategies that are in place to guide practice on occupational safety in Onandjokwe Health District.

Therefore you have been selected according to your professional knowledge of information and practices to participate in this study. Your views will represent the opinions of Registered Nurses.

Could you please grant me few minutes of your time to complete the attached questionnaire. You don't need to write your name on the questionnaire and the information will be kept confidential.

Thank you

J. Tuvadimbwa PO Box 2240 ONDANGWA Namibia Onandjokwe Health Training Center

(065) - 240111 x 2301(W) (Cell) - 0812867126 (065) - 241519 (H)

ANNEXURE D

Questionnaire

KNOWLEDGE AND PRACTICES AMONG REGISTERED NURSES ON OCCUPATIONAL HAZARDS IN ONANDJOKWE HEALTH DISTRICT

QUESTIONNAIRE

- A. SOCIODEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS (MARK WITH (X) IN THE SPACE PROVIDED)
- 1. Age (in years)
 - 20 29 30 – 39 40-49 50– 59
- 2. **Sex**

Female Male

3. Years of experience as a Registered Nurse

Less than 5 6 – 10 11 – 20 More than 20

4. Working Department

Outpatient/Casualty Gynaecology/Obstetrics Surgery Medical Others specify:

7

B. KNOWLEDGE ON OCCUPATIONAL HAZARI

working department/unit?

- Are you aware about the procedures to be followed in case of needlestick injuries?
 Yes
 No
- 4.1 Which diseases can be transmitted through needle -stick injuries?

- 5. Do you have any guideline on body mechanics especially when lifting, turning and getting up weak patients at your working department? Yes No
- 5.1 If Yes, are you aware about the content of correct body mechanics?YesNo

C. PRACTICES ON OCCUPATIONAL HAZARDS

6. How do you handle used needles and sharp instruments? _____ _____ _____ Have you ever received immunization against Hepatitis B? 7. Yes No 7.1 If Yes, what was the reason for you to get immunization? _____ _____ _____ 7.2 If No, elaborate. _____ _____

- Have you ever received any other prophylactic treatment against infectious diseases that you are treating/exposed to?
 Yes
 No
- 8.1 If Yes, indicate the type of treatment and the reason as to why did you get it.

- 9. Do you sometimes have to lift / turn / get up patients who are unable to help themselves? Yes No
- 9.1 If yes, do you particularly give attention to correct body mechanics?YesNo
- 10. Do you wash your hands on duty?

Yes
Please elaborate why?:----No
Please elaborate why?------

10.1 If Yes, when do you wash your hands while on duty?

	hands regularly?		
	Yes		
	No		
10.	3 If Yes, which restrictions?		
11.	Do you use the following on duty?		
	Claves	res	
	Gloves		
	Aprons		
	Spectacles/goggles		
11.	1 If Yes. when do vou use : Gloves		
	Aprons		
	Face masks		
	Spectacles		
11.	2 If No, give reasons for not using the: Gloves		
	Aprons		
	Face masks		
	Spectacles		
11.	3 Why do you use: Gloves		
	Aprons		
	Face masks		
	Spectacles/goggles		

10.2 Do you experience any restrictions on your ability to wash your hands regularly?

111

D.	UNDERSTANDING ON STRATEGIES/GUIDELINES THAT GUID	Ε
	PRACTICES ON OCCUPATIONAL SAFETY.	

- 12. Are you provided with information on how to prevent occupational hazards? Yes
 No
- 12.1 Through which means is this information provided?

12.2 Do you think the information you are provided with is adequate?YesNo

12.3 If No, give suggestions on how such information should be communicated to you.

- 13. In case if you suffer from occupational injury / illness of any kind, are you provided with any support?YesNo
- 13.1 If yes, what kind of support are you given?

- 14. Do you know about any other guidelines that are in place to deal with occupational safety at your health facility?YesNo
- 14.1 If Yes, mention those guidelines.

14.2 If No, give suggestions on the additional guidelines that will be of use, in dealing with occupational injuries.

ANNEXURE E

Letter to the experts to rate the questions for relevance

TOPIC: RESEARCH ON KNOWLEDGE AND PRACTICES AMONG REGISTERED NURSES ON OCCUPATIONAL HAZARDS IN ONANDJOKWE HEALT DISTRICT.

Dear Sin/Madam

I am Julia Tuvadimbwa, a Master in Public Health (MPH) student at the University of Namibia. As part of the course requirements, I'm conducting a research on the above mentioned topic.

The purpose of the study is to determine the existing knowledge and practices of the Registered Nurses and strategies that are in place to guide practice on occupational safety in Onandjokwe Health District.

You have been identified on the basis of your expertise knowledge. Your opinion will be used to ensure validity of my measuring instrument.

Kindly complete the attached ordinal scale by valuing the items that are included in the draft questionnaire.

Numbers stand for:

- 1 = Irrelevant
- 2 Can be left out
- 3 Relevant and important
- 4 Applicable, specific and critical

Please indicate under remarks items or questions that you think should be included. It will be collected from your office in two days time by me / my supervisor.

Thank you,

hunderlown

J Tuvadimbwa P.O. Box 2240 ONDANGWA Namibia Onandjokwe Health Training Centre

Tel: 065 - 240111 x 2301(w) Cell: 081 2867126 Tel/fax: 065 - 241519 (h)

ANNEXURE F

An ordinal rating scale for experts to test content validity

KNOWLEDGE AND PRACTICES AMONG REGISTERED NURSES ON OCCUPATIONAL HAZARDS IN ONANDJOKWE HEALTH DISTRICT

QUESTIONAIRE

(MARK WITH (X) IN THE SPACE PROVIDED)

A. SOCIODEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

- 1. Age
- 2. Sex
- 3. Years of experience as a Registered Nurse
- 4. Working Department



Remarks:_____

B. KNOWLEDGE ON OCCUPATIONAL HAZARDS

- 1. How do you understand occupational hazards?
- 2. In which ways are you exposed to occupational hazards at you working department / unit?
- 3. Which preventive measures is important here in your ward / unit?
- 4. Are you aware of the procedures to follow in the case of needle stick injury?
- 4.1 If Yes, briefly outline the procedures to be followed?
- 4.2 Which diseases can be transmitted through needle stick injuries?
- 5. Are you aware of the correct body mechanics to be followed when lifting, turning and getting up weak patients?

1	2	3	4

Remarks:_____

C. PRACTICES ON OCCUPATIONAL HAZARDS

- 6. How do you handle used needles and sharp instruments?
- 7. What is your Hepatitis B immunization status?
- 7.1 If immunized, how many times did you get the vaccine?
- 7.2 Why did you get the vaccine?
- 8. Have you ever received any prophylactic treatment against infectious diseases that you are treating / exposed to?
- 8.1 If yes, mention it.
- 9. Do you sometimes have to lift / turn / get up patients who are unable to help themselves?
- 9.1 If yes, do you particularly give attention to correct body mechanics?
- 10. Do you wash and dry your hands on duty?
- 10.1 If yes, how often do you wash and dry your hands on duty?
- 10.2 Do you experience any restrictions on your ability to wash and dry your hands regularly?
- 10.3 If yes, which restrictions?
- 11. Do you use the gloves, aprons, face mask and goggles on duty?
- 11.1 If yes, when do you use: gloves, aprons, face masks and goggles?
- 11.2 Why do you use: gloves, aprons, face masks, spectacles / goggles?
- 11.3 Give reasons for not using the protective measures in 11 where you indicated No

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Remarks:_____

D. STRATEGIES/GUIDELINES THAT GUIDE PRACTICES ON OCCUPATIONAL SAFETY

- 12. Are you provided with information on how to prevent occupational hazards?
- 12.1Through / by what means is this information provided?
- 12.2 Do you think the information you are provided with is adequate?
- 12.3 If no, give suggestions on how such information should be improved?
- 13. In case if you suffer from occupational injury / illness of any kind, are you provided with any support?
- 13.1 If yes, what kind of support are you given?
- 14. Do you know about any strategies that are in place to deal with occupational safety at your health facilities?
- 14.1 If yes, mention the strategies that are in place.
- 14.2Do you think the strategies that are in place to deal with occupational injuries are adequate?
- 14.3If your answer is No, please suggest additional strategies will be of use, in dealing with occupational injuries.

	1	2	3	4
1				

Remarks:

ANNEXURE G

Letter from the editor

Ostukati Wast Ren-Okatan Road P O Bos SRI Dokalarii MARKATAL DA DA SA STITUT Galt Birdshift22 / W Hes-2010010 Fee: -08445-2010071



Our place to lodge in style

To	For Ms. J. Tuyadimbwa	From	Chief Ankama
Fax		pages	1
Tel		Dute	11 February 2005
Re:		Ca	

To whom it may concern

RE Language review of the thesis of Ms. Julia Tuvadimbwa

I Chief Ankama, lecturer at the UNAM Northern Campus Language Center would like to inform you that I have indeed reviewed the thesis of Ma. Julia Tuvadimtws titled: "Knowledge And Practices Among Registered Nurses On Occupational Hazards in Onandjokwe Health District: Oshikoto Region, Namibia."

This language review was wide ranging including structures, tenses, plurals, consistency, spelling and more. The review was penciled on a hard copy (printed) and Ms. Tuvadimbwa is expected to accept or reject these corrections/suggestions as necessary.

Т

Seasonal greetings from

thet Anitama