

**YANGON UNIVERSITY OF ECONOMICS  
DEPARTMENT OF APPLIED ECONOMICS  
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**A STUDY ON AWARENESS OF OCCUPATIONAL  
HAZARDS AND SAFETY PRACTICES AMONG NURSES  
IN YANGON GENERAL HOSPITAL**

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EMPA - 54 (17<sup>th</sup> BATCH)**

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**A STUDY ON AWARENESS OF OCCUPATIONAL HAZARDS  
AND SAFETY PRACTICES AMONG NURSES  
IN YANGON GENERAL HOSPITAL**

**A Thesis submitted as a partial fulfillment towards the requirements for the  
Degree of Master of Public Administration**

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This is to certify that this thesis entitled, “**A STUDY ON AWARENESS OF OCCUPATIONAL HAZARDS AND SAFETY PRACTICES AMONG NURSES IN YANGON GENERAL HOSPITAL**”, submitted as the requirements for the Degree of Master of Public Administration has been accepted by the Board of Examiners.

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## **ABSTRACT**

This study was about the awareness of occupational hazards and safety practices among nurses in Yangon General Hospital. The aim of this study was to assess the awareness of occupational hazards among nurses and investigate the safety practices against occupational hazards among nurses in Yangon General Hospital. A hospital-based cross sectional descriptive study design was used with a simple random sample of (137) nurses from all wards including outpatient department. This study concluded that there was awareness of health care provider's knowledge and safety practices among them. The availability of job aids should be accessible in working environment as occupational safety measures. Routine training and safety precaution should be mandatory to health care workers on occupational hazards and safety practices. Full immunization against vaccine preventable, contagious diseases should take for all HCWs. Timely documentation of all cases of exposure to occupational hazards should note and strengthen for immediate response for getting the post exposure prophylaxis of health care workers to occupational hazards.

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## LIST OF ABBREVIATIONS

A&E	Accident and Emergency
AIDS	Acute Immunodeficiency Syndrome
ASEAN	Association of South East Asian Nations
ATT	Anti Tetanus Toxoid
CMV	Cytomegalovirus
EU	Europe country
H1N1	Human Influenza Virus
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HCWM	Hospital controlled Waste Management
HIV	Human Immunodeficiency Virus
HRH	Human resources for health
ILO	International Labor Organization
MDGs	Millennium Development Goals
MOH	Ministry of Health
MS	Medical Superintendent
NGOs	Non-Government Organizations
OH	Occupational Hazards
OHS	Occupational Health Services
OHSA	Occupational Safety and Health Administration
OPD	Outpatient Department
PEP	Post Exposure Prophylaxis
PMF	Plastic Maxillofacial
PPE	Personal Protective Measure
SDGs	Sustainable Development Goals
SOP	Standard Operation Procedure
STD	Sexually Transmitted Disease
TB	Tuberculosis
WHO	World Health Organization
YGH	Yangon General Hospital

# **CHAPTER I**

## **INTRODUCTION**

### **1.1 Rationale of the Study**

According to 2014 census there are 51.41 million populations in Myanmar. Doctor population ratio is (6.1:10000) and nurse population ratio is (10:10000) (WHO, 2014). The indicative benchmark of Myanmar is 2.28 doctor, nurse and midwife per 1000 population.

Recently the healthcare system of Myanmar is faced with new challenges, such as the increased healthcare demands and expenditures, inefficient use of healthcare resources and budget, etc. The reforming healthcare system is aimed at improving health care for all citizens by getting to the universal health coverage through the primary health care system. Ministry of Health has encountered many problems including scare of human resources.

Health care providers are exposed to a great variety of hazards at the workplace. Nursing occupation has a high-risk occupational health hazards because they are one of the first health care providers and faces with the patient during hospital stays. Health care providers provide patient care in environments that are considered to be one of the most unsafe occupational settings. It may be poorly prepared to handle occupational hazards of health care providers due to negligence and carelessness of providers, overload of work, financial burden. Occupational safety at the workplace improves the employees' health and increases their productivity. In the medical profession, Nurses constitute the largest group of healthcare workers, and experience a higher rate of workplace hazards exposure than other health care workers.

The implementation of knowledge in OHS in the workplace was difficult, and there was no existing ASEAN framework on the protection and promotion of the rights of healthcare workers in their workplace. Facilities need to improve health assessment, and to ensure constant evaluation of the existing laws for healthcare workers (quality assurance of existing policies) in their working areas. Direct access

to OHS officers, occupational hazards education, emergency contact etc. must be improved. Adherence must be strengthened to fully comply with the OHS standards.

The predominant occupational hazards of health care providers are blood borne infection, chemical burn, pharmaceutical allergy, exposure to radiation, assault from patients. Nowadays, patient safety is the most priority one and it is a public health issue. Patient safety can be obtained through provider satisfaction and safety. Health care providers are exposed to a great variety of hazards at the workplace. Health care providers provide patient care in environments that are considered to be one of the most unsafe occupational settings. Needle stick injuries are the most common injuries in the health care sector. Nursing staff, particularly nursing students are at the highest risk from needle stick incidents. It is poorly prepared to handle occupational hazards of health care providers due to negligence and carelessness of providers, overload of work, financial burden.

Public hospitals are large organizationally complex, system driven institutions employing large numbers of workers from different professional streams. They play an integral role in community protection through wider public health issues but are however potentially hazardous workplaces exposing workers to a wide range hazards on the job. There is the need for a research to identify the current sources of occupational injury that negatively influence the health, well-being and quality of work life for health workers in the public hospitals, from which recommendations can be made to create practice environments that promote the health and well-being of the current and future healthcare workforce as it is vital to the future of the healthcare system.

How to improve strategy and barrier for healthcare providers against the occupational hazards include awareness of occupational hazards by provider, complying with universal precaution and protective measures. There had been surveys about occupational hazards among health care providers all over the world but in Myanmar, it has very limited survey about occupational hazards among health care providers.

This study also revealed that there was a knowledge gap among nursing about occupational hazards which had to reduce occupational injury which negatively influence the health, well-being and quality of work life for health workers.

The findings of the research were served as a guide for strategies to be developed in the future establishment of policies aimed at protecting the rights and the safety of the health care providers.

## **1.2 Objectives of the Study**

The main objective of the study is to investigate the awareness of occupational hazards among nurses and safety practices among nurses in Yangon General Hospital.

To need this objective, specific objectives are set as follow:

1. To assess the awareness of occupational hazards among nurses in Yangon General Hospital
2. To investigate the safety practices against occupational hazards among nurses in Yangon General Hospital

## **1.3 Method of Study**

The research methodology used in this study was mainly the hospital based cross-sectional descriptive method of simple random sampling with primary data obtained from self-administered structured questionnaire. The sample size was 137 nurses from total 254 nurses of YGH.

## **1.4 Scope and Limitations of the Study**

The study was to be focused on the awareness among nurses in Yangon General Hospital. The participants may be sisters, staff nurses and trained nurses who had at least two years' experience and had willingness to answer the questionnaire. This survey was only investigated the awareness and safety practices of the occupational hazards and was not examined the causes and impact of occupational hazards.

## **1.5 Organization of the Study**

This thesis is organized into five chapters. Chapter I is Introduction; in which provide a general information such as rationale of the study, objectives of the study, method of the study, scope and limitations of the study and organization of the study. Chapter II presents literature review. In chapter III, it includes an overview of Yangon General Hospital. Chapter IV presents data analysis about occupational hazards among nurses. The findings upon survey data and recommendations from the former studies and survey data are presented in Chapter V, which is the conclusion of this thesis.

## **CHAPTER II**

### **LITERATURE REVIEW**

#### **2.1 Public Hospital**

A public hospital, or government hospital, is a hospital which is owned by a government and receives government funding. In some countries, this type of hospital provides medical care free of charge to patients, covering expenses and wages by government reimbursement. A public hospital or government hospital is a hospital which is owned by a government and receives government funding. This type of hospital provides medical care free of charge, the cost of which is covered by the funding the hospital receives. Public hospitals are owned by governments and play an important role in the health care safety net, providing care for patients who may have limited access to care elsewhere. Public hospitals provide care for individuals across the United States: in urban and suburban areas, in small towns, and in rural areas. However, these institutions face unique challenges. Surveys of metropolitan public safety net hospitals suggest that these institutions provide care for a large proportion of patients who have low income, are uninsured, or are covered by Medicaid. They serve a critical role as teaching institutions, and are often the first choice for trauma care. Furthermore, public hospitals provide a large amount of unreimbursed care. Advantages of Public Hospitals: Because they are partly or fully funded by a public municipality, public hospitals accept nearly every type of insurance and are very flexible. They are usually more affordable than private facilities.

#### **2.2 Health**

Health is a state of physical, mental and social well-being in which disease and infirmity are absent. Health is a positive concept that includes social and personal resources as well as physical capabilities (Nutbeam, 1990). Health care workers are the first line persons who meet with the patient in health care system. The World Health Report (2006) defined health workers as people whose job is to protect and improve the health of their communities. Together with these health workers, in all

their diversity, make up the global health workforce. Healthcare services are a significant instrument for achieving the health related guidelines of the Millennium Development Goals (MDGs) and Sustainable Development Goal (SDGs). Healthcare is one of the major sectors of many economies, employing a large number of workers (WHO, 2006).

In most of the developing countries the healthcare services play a vital role to achieve socio-economic development goals, by providing quality healthcare to all, providing employment.

## **2.3 Occupational Health**

A joint definition of occupational health endorsed by the ILO and WHO states that: “Occupational health should aim at: the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations and the adaptation of work to man and of each man to his job” (WHO, 2002).

### **2.3.1 Occupational Hazards in Health Care Workers**

Occupational hazards are conditions surrounding a working environment that increase the probability of death, disability, or illness to a worker. There is a variety of classification of occupational hazards of health care provider. WHO Classification of Occupational Hazards of health care providers (2002) into physical, biological, mechanical, ergonomic, chemical and psycho-social. Occupational hazards can be broadly divided into the following categories in African Newsletter: biological, chemical and physical hazards, ergonomic factors, organizational problems and psychosocial hazards (Niu S, 2010).

Occupational hazards are defined as any existing or potential condition in workplace which by itself or by interfacing with other variables, can result in death, injury, property damage or other loss. It can affect the workers at all age and causing premature death or illness or disablement to workers (WHO 2002). Occupational hazards are defined as the inherent potential to cause injury or damage to people’s health in the work place (ILO, 2004).

Health and safety hazards in the health sector have been documented, and are known and experienced by some of these workers. They include: lifting and maneuvering patients from awkward postures contributing to lower back and upper limb disorders; exposure to infectious airborne diseases such as TB and H1N1 flu;

sharps injuries and the risk of exposure to blood borne pathogens including hepatitis B and HIV; violence and abuse in the workplace resulting in physical injuries and psychological trauma; latex in rubber personal protective equipment (PPE) and medical equipment contributing to allergies and occupational asthma; long patient queues; shortages of beds, equipment and medicines; staff shortages and budget cuts contributing to stress and burnout; exposure to radiation by radiographers; exposure to hazardous chemicals; and ergonomic hazards (Henwood, 2010).

Health care workers are exposed to a great variety of hazards at the workplace. According Dr. Shengli Niu in the African Newsletter on OHS, 2010, these hazards could be broadly divided into the following categories: biological, chemical and physical hazards, ergonomic factors, organizational problems and psychosocial hazards (Niu S, 2010).

### **2.3.2 Biological Hazards**

Health care workers are often in direct contact with patients, including patients with infectious diseases. Tuberculosis (T.B), hepatitis, rubella, HIV/AIDS, and cytomegalovirus (CMV) are just a few examples of the threats faced by Health care workers in their daily work. The incidence rates for TB are now rising in many developing countries and even in several industrialized countries due to the spread of HIV/AIDS and a slackening of immunization programs. The appearance of multi-drug resistant TB poses a new threat to Health care workers.

Hepatitis B is usually transmitted through the blood and enters a susceptible individual through a break in the skin often via an accidental needle stick. It could be a specific risk to people working in laboratories, renal-dialysis units, blood-transfusion centers, drug-addiction clinics, dental surgeries and STD clinics. Contacting patients with rubella virus infection could have serious consequences for pregnant health care workers, and infected staff also pose a threat to patients, particularly when working in obstetric, gynecological and pediatric services. Most HIV-positive Health care workers have acquired their HIV infection outside the workplace, by sexual transmission from an HIV-positive partner/spouse. The risk of transmission of HIV from the patient is small, if the staffs observe standard infection control procedures (Niu S, 2010).

### **2.3.3 Chemical Hazards**

Health care workers are exposed to a large variety of chemical agents which are being used in hospitals and other health facilities. These agents include anesthetic agents, disinfectants, chemical sterilizing agents, drugs and cytostatic or laboratory reagents. Some of these substances are irritating to the skin and respiratory tract and can cause allergy. Some others, such as ethylene oxide, formaldehyde, hexachlorophene, are known mutagens, teratogens and human carcinogens. Among the occupational allergic agents, latex, acrylic and epoxy chemicals in orthopedics and dentistry, laboratory chemicals such as formaldehyde, chromium, cobalt and organic solvents can cause irritant dermatitis. Substances such as animal protein and antibiotics – particularly the penicillin group – are well-recognized allergic agents which may cause not only asthma but also dermatitis and conjunctivitis. It is important to know that once an allergy has developed, it is extremely difficult to keep the exposure levels low enough to prevent exacerbation of the disorder. Thus it is very important to prevent or minimize exposures in the first place (Niu S, 2010).

### **2.3.4 Mechanical Hazards**

The main mechanical hazards include cuts, lacerations, needle punctures, crushing, and contact with machines, as well as falls from heights, falls on the same level, slips and trips. Machines can also cause minor injuries such as bruises, abrasions, sprains, strains, burns or cuts as well as severe injuries including amputations, fractures, lacerations or crushing injuries.

A wide variety of mechanical motions and actions may present hazards to the worker. The basic types of hazardous mechanical hazards are

- Hazardous Motions include rotating machine parts, reciprocating motions (sliding parts or up/down motion), and transverse motions (materials moving in a continuous line).
- Points of Operation the areas where the machine cuts, shapes, bores or forms the stock being fed through it.
- Pinch Points and Shear Points areas where a part of the body can be caught between a moving part and a stationary object.

### **2.3.5 Physical Hazards**

Physical hazards to Health care workers are ubiquitous in hospitals and clinics. They include ionizing radiation, noise, heat and cold, vibration, electric and magnetic fields. In addition, consideration needs to be given to the ergonomic aspects of health care work. Ionizing radiation poses a threat to Health care workers working not only in radiological and radiotherapy departments, but also in laboratories, dental facilities and electro-microscopy units, as well as in nursing wards and operation rooms (Lugah et al. 2010).

Radiation is used in medical care for both diagnostic and therapeutic purposes. Work involving the preparation and assay of radiopharmaceuticals and intervention radiology tends to be associated with the highest occupational exposure in the medical use of radiation. Doses to the hands can rise to an annual limit of 500 mSv. Therefore, it is important that radiation protection measures are strictly followed, and the staffs are adequately shielded from radiation sources so that the doses to the whole body and extremities can be reduced to as low level as can be reasonably achieved.

Noise and vibration are not major problems in health care establishments except in dental and orthopedic surgery. High-speed dental turbines and surgical drills can cause noises at the level of 80–90 dB (A) which could damage the hearing of the operators if maintained for a prolonged period (Nyame-Annan K. P., 2017).

Extreme ambient temperatures are usually not major concerns for the Health care workers. But in some developing countries, as well as for some categories of health staff performing certain procedures, extreme temperatures could be a health threat. People who are exposed to heat and cold include operating theatre staff, boiler-room workers, laboratory technicians, as well as service and maintenance personnel. Poor building design and maintenance can cause indoor air quality problems. Particular attention to the ventilation of the building is needed to prevent the “sick building syndrome”. This is also particularly important in specific areas, such as laboratories and operating theatres where there is a specific need to suppress, minimize or control hazardous gases, dusts, fumes, etc. (Niu S, 2010).

### **2.3.6 Ergonomic Factors**

Musculoskeletal injuries of the Health care workers are often associated with patient handling. The lifting of patients is a major problem for nurses. Back injury is the most common and costliest type of injury faced by Health care workers. Nurses

are at greatest risk of musculoskeletal injuries. The reason for the great number of musculoskeletal injuries is the great amount of lifting that Health care workers, nurses in particular, are required to do, and this is not always physically possible. In the health care setting, patients are more difficult to lift since they are not stable and can be very uncooperative. Injuries due to awkward work postures, such as the prolonged standing, bending or kneeling can prevail among dentists, otologists, surgeons and especially micro-surgeons, obstetricians, gynecologists and other Health care workers, such as operating room staff, cleaners and hospital laundry workers. The availability of mechanical lifts and other devices for moving patients, for instance, from their beds to wheelchairs, and ergonomically designed work stations have greatly improved the comfort of the working postures in many medical practices and procedures. These lifts and devices are commonly found in industrialized countries rather than developing countries. Nevertheless, unpredictable demands and high workload, as well as economic constraints, limit the introduction of these techniques to the workplaces in the health care sector (Niu S, 2010).

### **2.3.7 Organizational Problems and Psychosocial Hazards**

Aspects of work organization affect general well-being, physical health, and stress-related outcomes. There is a number of important emerging scientific and health issues related to work organization practices.

#### **2.3.7.1 Stress**

Job stress is also a common complaint among the health care workers. The main causes include heavy workload, conflicting or uncertain job responsibilities, and job insecurity. A significant proportion of the health care workforce consists of women, who still, for the most part, manage the home and care for children in addition to their outside work. Dealing with the very sick and dying persons can be a real problem for trainees and new health care workers. Long working hours, night work and rotating shift work are a normal pattern of the health care services. High levels of responsibilities are part of the life of many hospital workers.

Junior doctors and nurses are more likely to face these situations as stressful. Although normal levels of stress will not cause a disability, it is possible that prolonged exposure to a high level of stress may result in substantial adverse long-term health effects. Such health effects can be anxiety, aggressiveness, apathy,

boredom, irritability, depression, exhaustion, or behavioral effects, such as accident proneness, smoking, drug-taking, alcohol abuse, excess eating or restlessness (Niu S, 2010).

### **2.3.7.2 Workplace Violence**

Violence is a significant problem in both hospital and community based health care environments and (Cooper and Swanson, 2002). Studies indicate that as many as one-third of workers report they experienced some sort of psychological aggression, emotional harassment, or abuse while on the job during the past year. Workplace psychological aggression can be costly in terms of individual outcomes, such as increased psychological stress, reduced satisfaction, and poorer physical health, and in terms of organizational outcomes such as turnover, counterproductive work behaviors, and decreased productivity. Violence in Health care workers at work is common among workers who are in contact with people in distress. Frustration and anger arising out of illness and pain, problems of ageing, psychiatric disorders, alcohol and substance abuse can affect people's behavior and make them verbally and physically aggressive. Health care workers are at special risk of workplace violence. Health service staff working in emergency care units and in psychiatric hospitals are at high risk of violence. Female Health care workers are particularly vulnerable to violence at work (Niu S, 2010).

## **2.4 Awareness**

Awareness of occupational hazards can reduce the accidents, injury and premature death. Awareness means knowledge or perception of a situation or fact. Knowledge means facts, information, and skills acquired through experience or education; the theoretical or practical understanding of a subject. Perception means the ability to see, hear, or become aware of something through the senses. Awareness or familiarity gained by experience of a fact or situation (Oxford Dictionary, 2010). Awareness means knowledge or perception of a situation or fact. Perception is the respondent's view about occupational hazards and safety.

Occupational health and safety is a discipline with a broad scope occupational health and safety encompasses the social, mental and physical well-being of workers that is the "whole person".

Knowledge and awareness of occupational hazards play an adequate role in preventing injuries, hazard, and diseases and can cause death among hospital employees. Health care providers are exposed to a great variety of hazards at the workplace. Nursing occupation has a high-risk occupational health hazards Occupational hazard is recognized as a major concern because it is associated with the morbidity and mortality of exposed workers. This is why the respondent's knowledge about occupational hazards and safety as pertains to their work environment.

The numbers of work-related diseases in developing countries are much higher in reality than the numbers that are reported cases. ILO estimated workers suffer 270 million occupational accidents and 160 million occupational diseases each year (ILO, 2005). This may be the tip of the iceberg, as data for estimating nonfatal illness and injury are not available in most developing countries. It can affect workers at all ages and cause premature death (WHO, 2007).

In the worldwide, there are at least 250 million occupational accidents every year and at least 335,000 of which result in death. Developing countries have more fatal accidents than industrialized nations, emphasizing the need for health and safety education programs that focus on prevention. Some occupational diseases have been recognized for many years and affect workers in different ways and such diseases are still problems in all parts of the world. Although occupational hazards affect workers of all ages, occupational hazards are changed according to type and nature of work.

## **2.5 Safety Practice**

Occupational health and safety is a discipline with a broad scope involving many specialized fields. In its broadest sense, it should aim at:

- The promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations;
- The prevention among workers of adverse effects on health caused by their working conditions;
- The protection of workers in their employment from risks resulting from factors averse to health;
- The placing and maintenance of workers in an occupational environment adapted to physical and mental needs;
- The adaptation of work to humans.

In other words, occupational health and safety encompasses the social, mental and physical well-being of workers that is the “whole person” (ILO,2005).

## **2.6 Prevention and Control of Occupational Hazards**

The negative health effects of manual handling can be prevented by trying to eliminate or at least reduce the risk factors involved. The following hierarchy of prevention measures should be used:

- First, can the work be designed and organized in such a way that manual handling can be avoided completely, or at least restricted
- If manual handling cannot be avoided, automation, mechanization and the use of lifting and transport equipment should be considered

Hazards in the workplace can be found in a variety of forms, including chemical, physical, biological, psychological, non-application of ergonomic principles, etc. Because of the multitude of hazards in most workplaces and the overall lack of attention given to health and safety by many employers, work-related accidents and diseases continue to be serious problems in all parts of the world (Sadiler, 2009).

## **2.7 Related Research Study Regarding Occupational Hazards in the World**

Globally, occupational deaths, diseases, and illnesses account for an estimated loss of 4% of the Gross Domestic Product (Takala, 2002). Occupational Health and Safety (OHS) issues relating to the personal safety and protection of workers is therefore a very important Environmental Health concern for hospitals (Sadler, 2009). Poor occupational health and reduced working capacity of workers may cause economic loss up to 10-20% of the Gross National Product of a country (WHO, 2002).

The occupational measures that can be reduced to risk of occupational health hazards availing separate areas and containers to dispose medical waste (92.0%) and safety tools and equipment (90.0%) in occupational health hazards among healthcare workers in Kampala, Uganda. More than half (53.5%) of the health care worker prevent the infectious agents with personal protective equipment. Regarding the hand washing practices, most health workers washed their hands before and after every procedure (79.5%) and after handling soiled materials (68.5%). Forty-six percent of

health workers washed hands when they were evidently dirty while slightly over half (53.5%) did so after using the toilet (Rawlance Ndejjo et al, 2015).

Occupational hazards associated with health are present in every occupation, and they are the leading cause of death and mortality. The result showed that 67.5% nurses were with high knowledge about occupational hazards. Overall positive attitude was 56.91 % and overall practice level was 57.72% which is insufficient. The practical implication of the study is to improve the practices and reduce the exposure of occupational hazards. There should be training and educational meetings for the nurses to enhance the occupational safety, develop policies on all aspects related to occupational hazards (Arooj Awan, 2017).

Some risks and hazards are common to the whole sector, others are more specific to certain categories of health care workers or to certain work practices of the industry, the predominant hazards to Health care workers include blood-borne infections such as HIV, HBV and HCV, back and neck pain, burn-out stress, allergic reactions to latex materials, spills from chemicals, exposure to radiation, assault from patients among others (Goniewicz M,2012).

Exposures to sharp injuries and their consequences are highly preventable through simple interventions, such as HBV vaccination, education and providing containers for sharp instruments. Specific guidelines, similar to the American Occupational Safety and Health Administration (OHS) regulations that have lowered by up to 88% of needle stabbing incidents, should be introduced by the European Union (EU) and other countries (Goniewicz M,2012).

The recapping used needles as a risky practice (70 %) and recognized that effective hand washing prior to, and after every clinical procedure in preventing cross infection (100 %). Also, most respondents (96.2 %) believed they were at risk of occupational hazards while about two-thirds perceived the risk as high (Aluko et al., 2016).

The factors that contribute to occupational illnesses and injuries in health care facilities include negligence and carelessness of health care workers, lack of adequate protective aids and equipment, inadequate number of staff, excessive workload and failure to observe basic safety. Although it is possible to prevent or reduce health care workers exposure to these hazards, the workers are actually experiencing increasing numbers of occupational injuries and illnesses (Lawrencia Soglo, 2012).

Occupational Health and Safety have limited accessibility to the requirements of the implementation of OHS among healthcare workers, while the workload of the staff in the implementation of OHS in the workplace gradually increased. Safety practices of health care provider need to be taken to reduce the occupational hazards (Lawrencia Soglo, 2012).

Jiban studied in 2019 also showed that the awareness of healthy working practices and statutory requirements persist in the library workplace. Rates of occupational injury to health care workers have become global issue in the past decade. The major causes of occupational risk in terms of physical, chemical, biological, technological, emotional, and psychosocial hazards. The Jiban study revealed how occupational hazards emanate in the library workplace and how library managers can prevent these hazards by creating health & safety compliance in the workplace and need for transforming the library profession to improve the level of occupational health practices ensuring standard norms and follow-up actions. (Jiban K. Pal, 2019).

The issues regarding compliance on provisions of occupational health and safety among health care workers must be properly addressed through immediate monitoring and reevaluation of personnel in terms of their knowledge and practices in OHS. Barriers and challenges have been identified in the study that can lead to improved compliance among healthcare workers in regards to OHS. Most of researchers studied for awareness and practice of diseases were done but occupational hazards among workers regarding occupational hazards is performed to a substantially less extend (Faller EM, et al., 2018).

Hafiz, Al-med, Mark &Smith,2001 conducted the knowledge and practice of workers in cement factory in UAE of the age of the workers ranged from 19 to 66 years and the majority of the subjects (66.7 %) had a current duration of work of more than 20 years. Most of the workers (74.5 %) knew that exposure to the dust was a serious hazard to their health but only (52.9 %) of the workers knew the hazards other than the dust that were associated with their work. Although all workers had been provided with masks to protect them from dust, only (28.8 %) of them claimed that they used the masks all the time during working hours. The researcher explained that years of education, being informed about the hazards associated with the worker's job and attending a training course about occupational health and safety were influence on the workers' knowledge about the occupational hazards and on their use of the

personal protective equipment at work. The researcher concluded that high knowledge of the cement factory workers about the adverse health effects of exposure to dust had poor in practice in the use of respiratory protective equipment (Mark & Smith. et al., 2001).

Another similar research study, the prevalence of unfavourable consequences of musculoskeletal disorder (MSD) was conducted by Alexopoulos, Tanagra, Konstantinou & Burdorf. The researcher discussed that musculoskeletal co-morbidity was strongly associated with absenteeism but care seeking and sick leave were less associated for shoulder/neck and hand/wrist complaints especially among white collar workers. Accordingly, this study only described the prevalence of unfavourable consequences of musculoskeletal disorders among (853) shipyard employees (Alexopoulos et al., 2016).

Among them, Similarly, Yadav, Anand & Singh conducted the awareness and practices of the Sandstone Quarry Workers in Desert Ecology of Jodhpur, Rajasthan, India regarding silicosis during the year 2007-2008. The researchers recommended that proper health education and vocational trainings about personal protection and preventive measures against silicosis should be carried out (S.P. Yadav, P.K. Anand and H. Singh, 2011).

The researchers, Sabitu, Iliyasu & Dauda, conducted awareness of occupational hazards and adherence to safety measures among 330 male welders from three shipyards of northern Nigeria in 2008. The researchers understood scientifically that higher proportion of older welders were aware of occupational hazards compared to their younger colleagues and so awareness was positively influenced by educational attainment, increasing age, nature of training and work experience. Moreover, the findings stated that only one third of welders regularly used some forms of protective measures but some welders did not use eye goggles due to discomfort and poor visibility when using them. Finally, researchers concluded that the level of awareness of occupational hazards was high with sub optimal utilization of protective measures against the hazards. Poor economic condition of the country played a major role in the availability and afford-ability of these all-important protective devices (K Sabitu et al., 2009).

Midori surveyed about the prevalence of asbestosis and other occupationally related respiratory symptoms among (104) migrant ship breaker population who had returned home to northern communities in Bangladesh. In this study, the researcher

identified knowledge and attitude of asbestos and the fate of it after leaving the work place to get health and safety life at work by using questionnaire with the help of the research assistants. In this study, all ship breakers were recruited with average age 40 years, nine-year ship breaking experience (Midori, 2008).

## **CHAPTER III**

### **PROFILE OF YANGON GENERAL HOSPITAL**

#### **3.1 Overview of Yangon General Hospital**

Yangon General Hospital is the tertiary and biggest hospital in Myanmar which is (2000) bedded hospital. It is located at the center of Yangon Region, at Bogoke Aung San Road of Latha Township, in West district. It is round about 34.72 Acres and it was established in 1899 [121 Years Old]. Firstly, three storeyed building was built in 6<sup>th</sup> May 1905, with 342 Beds. After second World War upgraded to 546 Beds. In 1964, it was upgraded to 1500 bedded hospital with expansion of new specialists' wards and extension of new buildings. In 2016, upgraded again to 2000 bedded hospital, sanction was attended with new five storeyed surgical complex, PET-CT (five storeyed) and five storeyed cancer ward building.

#### **3.2 Department of YGH**

Patients concerning general medicine, general surgery and other specialties are treated in this hospital. As 2000 bedded, Tertiary Care Teaching Hospital, it has (4) Medical Wards, (3) Surgical Wards, (27) variant of specialty departments, wards, unit and center with their own functions for inpatients and for outpatients: it has General and Specialist outpatient departments.

Others specialties include emergency medicine department, Cardiac Medical Department, Cardiac Surgical Department, Orthopedic and Traumatology Department, Hand & Reconstructive Surgery Department, Anesthesiology Department, diabetics and endocrine department, geriatric medicine department, Neuromedical department, Neurosurgical department, gastroenterology department, tropical and infectious medicine department, plastic maxillofacial and oral surgery, physical medicine and rehabilitation department, hematology department, medical oncology department, radiation oncology department, nuclear medicine department, dermatology and special skin department, dental OPD, Acute Burn Care Unit, Epilepsy and Stroke

Care Unit, Intensive Care Unit, Palliative Care Unit, Isolation Ward and Pain Treatment Center and dog bite treatment center.

Diagnostic Departments of the following are available at YGH, such as radiology department, clinical laboratory department, Cardiac Catheterization Laboratory, Endoscopy (GI), E.E.G (Neuromedical). The other supportive departments are medical store and pharmacy department, oxygen supply unit, blood issue section, medical record department, forensic medicine department and mortuary, medico-social work, Ambulance Services, Laundry services and administrative office. Nearly almost 1800 in- patients are treated every day.

Specialist outpatient departments located at surgical complex building which is always opened in office hours. All the departments opened their specialist clinic with scheduled time table on respective days according to their specialties. There are round about 1200 out-patients consulted every day. For attending outpatients department require referral from primary health center or secondary hospitals. Facilities for investigations at outpatients department are Imaging and laboratory. If the patients need to admit, admission will be done to the respective wards for further treatment. They treated the new OPD patients as well as give service for follow up patient who are discharged from their wards.

ART center, DOTS corner, STD clinic and elderly clinic are also easy to access in there. It is located near trained station. Therefore, the patients from all over the area of Myanmar are coming to this hospital with various reasons and some are referred from their township to this hospital if they needed further management.

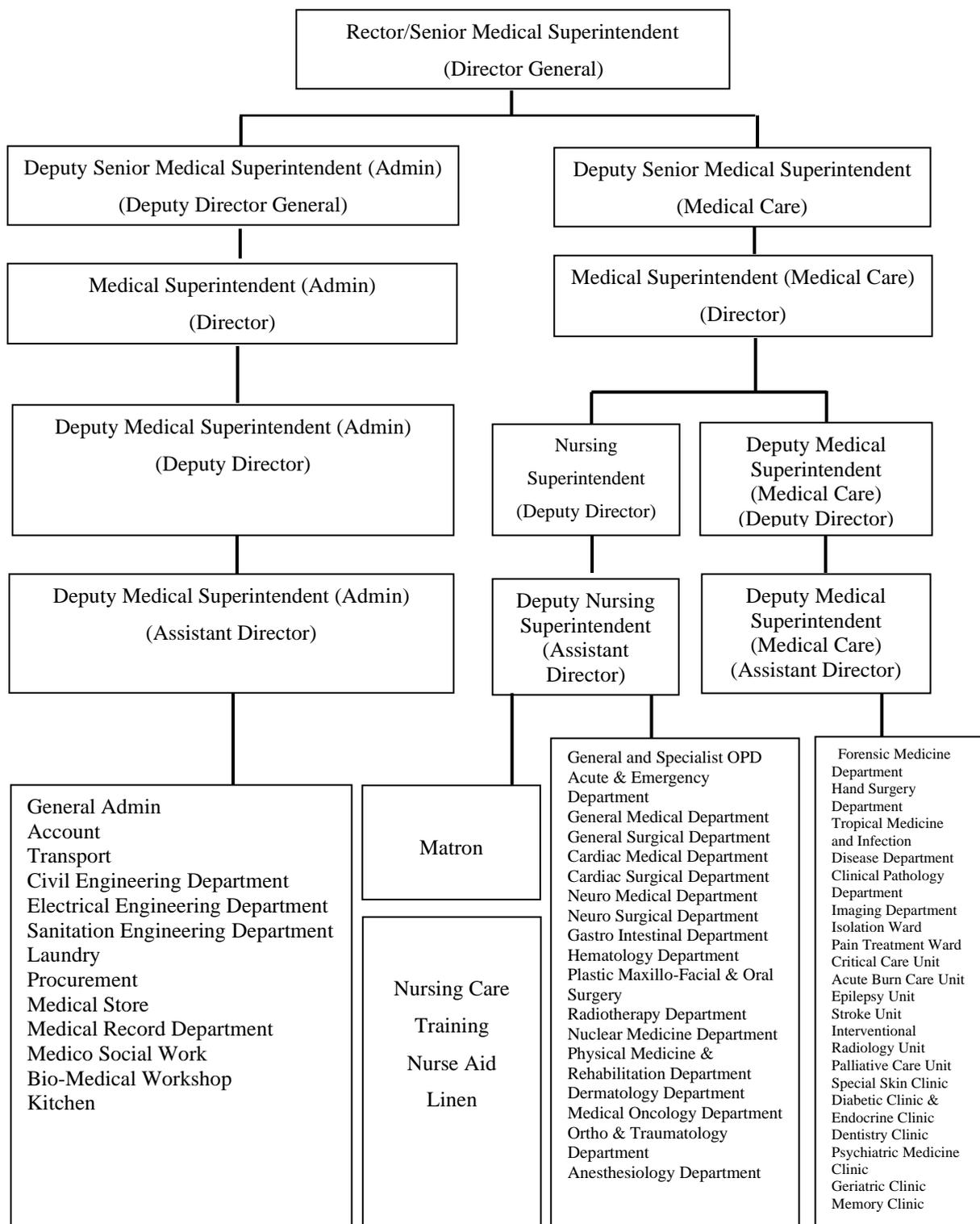
Yangon General Hospital also has Emergency Department for receiving acute and emergency cases of round the clock service for acute cases of medical, surgical and trauma.

Provide lifesaving urgent services as well as minor trauma and surgical cases.

### 3.3 Human Resources of YGH

The organization structure of Yangon General Hospital is as follows:

**Figure (3.1) Organization Chart of YGH**



Source: YGH Profile, MS Office

There are a variety of working lists for all health care providers and staff from higher level staff to lower level staff. The Emergency doctors, nurses and general workers work out with different varieties of patients 24/7.

Manpower of Yangon General Hospital are as follows:

**Table (3.1) Manpower of YGH**

	<b>Sanctioned</b>	<b>Appointed</b>	<b>Vacancies</b>
Rector/Senior Medical Superintendent	1	1	-
Senior Medical Superintendent	2	1	1
Professor Head of Department	45	20	25
Medical Superintendent (Director)	2	1	1
Medical Superintendent (Deputy Director)	2	2	-
Associated Professor/ SCS	92	65	27
Deputy Medical Superintendent/ JCS/NS/ AD	201	102	99
Specialist AS/ CAS	356	126	230
Officers (Office +Technical)	64	31	33
Sisters	56	37	19
Staff Nurses	328	107	221
Trained Nurses	649	110	539
Nurse Aids	86	70	16
Dressers	32	16	16
Technicians	305	105	200
Office Staff	320	184	136
Engineering Staff	104	50	54
Workers	412	280	132
<b>Total</b>	<b>3,057</b>	<b>1,308</b>	<b>1749</b>

Source: MS office Data

YGH is also a teaching hospital of university of medicine (I). Therefore, all doctors of general medicine, general surgery and specialist doctors are attached to this hospital and third year and final part(I) and part (II) students are attended their lecture at there and post graduate students are attached there. House officers are also assigned at their representative subjects.

Maintenance Engineering Departments are also available such as Civil, Electrical, Water & Sanitation and Biomedical Engineering departments. As one of teaching hospital in Yangon General Hospital teaching program such as Doctorate Course : Dr. Med Sc. (General Medicine), (General Surgery), (Orthopedic) – (Hand, Spine), (Cardiac Medicine), (Neurology), (Neurosurgical), (Gastroenterology), (Clinical Hematology), (Anesthesiology), (Radiology), (Geriatric Medicine), (Endocrinology), (Tropical & Infectious Disease), (Plastic surgery), (Oral & Maxillo-Facial Surgery) and (Rehabilitation Medicine), Ph.D. Pathology, Microbiology and Master Course: M. Med.,Sc. (Pathology), (Medical Jurisprudence), (Orthopedic), (Anesthesiology), (Radiology), (Rehabilitation Medicine), (Dermatology), (Medical Oncology), (Radiation Oncology), (Nuclear Medicine), (Medicine), (Surgery), (Emergency Medicine), (Hospital Administration & Health Management), (Plastic Surgery), (Critical Care) and also not only Diploma Course: Dip. Med.Sc (General Practice), (Family Medicine), (Primary Emergency Care), (STD & HIV Infection), Dip NSc. (Critical Care) but also Others such as (Nursing Training), (Paramedical Sciences) and (Radiology, Physiotherapy, Lab, Technicians) include in academic program.

### **3.4 Occupational Health and Safety Program in Myanmar**

Occupational Health is one of the environmental health issues described by (WHO) in 2002. Workers and health workers should know this situation to protect their lives and health while working and consequently to reduce morbidity and mortality rate of workers. Health workers should prepare their work places to prevent occupational hazards and they need to know emergency first aid treatment. Moreover, they should know the advantages of Personal Protective Equipment (PPE) and they should be able to use Personal Protective Equipment correctly.

### **3.5 Related Research Studies Regarding Occupational Hazards in Myanmar**

There were several research studies based on knowledge, attitude and practice of workers regarding occupational hazards in occupational settings were limited and therefore were limited studies of occupational hazards of Myanmar for comparison.

Studying on occupational hazards as a major concern is shown by several researchers in Myanmar. Firstly, Kyaw Zaw Linn (2006) studied a cross sectional descriptive and analytical study to find out the awareness and practice on healthy

workplace concepts among Thamine textile - mill workers, Yangon Region. The researcher interviewed (385) workers including male and female from three departments of this factory by using face to face interview method with semi-structured questionnaires. According to findings, most of the workers understood and used the methods of occupational disease prevention. The researcher stated scientifically that most of the female workers, older age of respondents had higher practice on health promotion and health protection. Moreover, there was significant association between age group and practice on health promotion. Besides, the researcher discussed that workers with higher educational level were increased awareness and practice. This study highlighted the awareness and practice on healthy workplace concepts of Thamine textile-mill workers in Myanmar. Therefore, different occupational setting was chosen in resent study (Kyaw Zaw Linn, 2006).

Oke Soe (2009) conducted an industrial based cross sectional study on knowledge, attitude and practice of workers from Okkyin jute factory regarding occupational hazards. It was found that all respondents had good knowledge and attitude on prevention of occupational hazards but they had poor healthy work practice. Therefore, they recommended that specific safety training, proper operation and maintenance of machines should be conducted. Moreover, all workers should obey strict regulations and instructions associated with prevention of occupational hazards and get health talk and acquire other health knowledge on occupational lung diseases. Although this study especially emphasized on physical hazards from Okkyin jute factory, the study was focused on general hazards in Myanmar Railways-Carriage and Wagon Workshop in Myanmar (Oke Soe, 2009).

One of the research studies on cross sectional descriptive studies about knowledge, attitude and practice of occupational hazards was conducted by Aung Kyaw Oo (2009) among paint factory (UPG) workers, Hlaing Tharyar Township. In the study, all workers (139 workers) were chosen by using face to face interviewed method (from July to October 2009). In findings, workers with high level of education had lesser chance of occupational hazards. It showed that knowledge, attitude and practice of workers and socio-demographic characteristics associated with the occurrence of occupational hazards. It pointed out that majority of workers have low education status, and so health education and training concerning general knowledge of occupational hazards, safety measures and utilization of PPE should be done. Therefore, the present study is also intended to identify attitude and practice workers

regarding of occupational hazards and utilization of PPE at the workshop (Aung Kyaw Oo, 2009).

In 2011, Lwin Lwin Kyi conducted another descriptive study on the awareness of occupational hazard and utilization of safety measure among Jute factory workers at Okkyin of Mayangone Township. In this study, over half of workers had high level of knowledge about occupational hazard and utilization of safety measure. As most of the respondents followed the safety instructions to prevent occupational hazard, their safety practice was fair practice level. There was strongly significant among department of workers and utilization of safety measure ( $P = 0.001$ ). They recommended that workers from the six production department needs to assess noise induced health hazards by occupational health workers as they did not wear ear plug and ear muff. This study identified the awareness of occupational hazards and utilization of safety measures of Jute factory workers in Myanmar. Similarly, the recent study also studied the awareness and practice of workers from one of the workshop in Myanmar by using self-administered pre-tested structured questionnaires (Lwin Lwin Kyi, 2011).

Tin Aung Win (2011) conducted the knowledge, attitude and practice of workers regarding occupational hazards in Military Heavy Industry (1), Meikhtilar Township. This study showed that most of the workers have awareness on utilization of preventive measures. Most of the workers from this factory had good attitude and good practices on utilization of PPE. It recommended that first aid training and frequent health talk on occupational hazards should be provided for all workers. In recent study, different occupational settings and data collection method were chosen to find out the awareness and practice of workers regarding occupational hazards by using self - administered pre-tested questionnaire (Tin Aung Win, 2011).

Similarly, Thi Thi Oo (2012) studied knowledge; attitude and practice of workers regarding occupational hazards from Myanmar Shipyards (Sinmalaik) by using self-administered pre-tested questionnaires and descriptive analysis. The researcher stated that, abrasion, eye injury and cutting injury were common occupational injuries in the shipyard. The researcher concluded that more than half of respondents had good knowledge and attitude but nearly half of respondents had good practice score on occupational hazards. Although most respondents had satisfactory knowledge and attitude, some misconceptions were still remained among workers. The researcher recommended that eating and drinking area, hand cleaning facilities,

continuous health education sessions and revising the first aid training program should be provided for all workers in each workshop to improve knowledge of workers. Moreover, the usage of PPE and preventive practices of workers should be checked frequently to improve personal safety practices (Thi Thi Oo, 2012).

The study of effectiveness of knowledge, attitude and practice regarding occupational hazards in Meikhtila Township in Mandalay Region in 2014 showed that the regular health education program on prevention were higher than those of before intervention so that strengthening of health education program to develop the occupational safety and health for reducing occupational morbidity and mortality rate (Swe Swe Than, 2014).

The study done in Bayintnaung in 2015 by Dr Myo Ko Ko Kyaw was a study to other occupational settings in Myanmar. The occupational health of nurses can recognize potential health problems and can cooperates with the other members of the occupational safety and health team in the work places. Therefore, the occupational health of nurse can assess the workers about awareness and practice of occupational hazards and the workers can be saved and medical care cost burden could be reduced (Myo Ko Ko Kyaw, 2015).

## **CHAPTER IV**

### **SURVEY ANALYSIS**

#### **4.1 Survey Profile**

Public hospitals are now upgrading the facilities and promote their health care service quality. Yangon General Hospital is 2000 bedded Tertiary Care Teaching Hospital which has (4) Medical Wards, (3) Surgical Wards, (27) Departments, Wards, Unit and Centre for inpatients and for outpatients: it has General and Specialist outpatient departments.

The nurses who worked at these wards and units had burdened about their workload so that they may neglect the occupational hazards. Therefore, this study was focused on the awareness of occupational hazards among nurses in Yangon General Hospital. The Respondents were sister, staff nurses and trained nurses who had at least two years' experience and had willingness to answer the questionnaire. From a total of 800 nurses in this hospital, 137 Respondents had been selected by using simple random sampling technique. This survey was investigated the awareness and safety practices of the occupational hazards and was not examined the causes and impact of occupational hazards.

#### **4.2 Survey Design**

The survey was conducted in the Yangon General Hospital with total sample of 137. As primary data sources, instruments for data collection was Questionnaire. The questionnaire was modified from Aluko et al. BMC Res Notes (2016) from Nigeria. It consists of five parts; all are self-administered questions presented in Myanmar and English.

- Part (A) which have (7) Socio-demographic questions
- Part (B) which has (34) questions for Knowledge, Awareness and Perception.
- Part (C) which has (17) questions for Attitude and Safety Practice
- Part (D) which has (27) questions for Risk and Predisposing factor.
- Part (E) which has (10) questions for measures against occupational hazards.

Attitude and Safety Practice questions used five Likert scale.

The data collection period was in September 2021. Pilot survey was done before doing the survey. Reliability test was done for knowledge and safety practice. After that, the data could be able to clarify into different categories like socio-demographic data, satisfaction data and so on.

The Chi square test and Fisher's exact test were used for data analysis by using SPSS version 16.0. In this study, there are two categories for knowledge, attitude and practice scores. The overall score of knowledge was 32, attitude was 17 and practice was 27. Therefore, the score equal and above of 24, 15 and 19 of knowledge, attitude and practice was used as a cut off point for good knowledge, favorable attitude and good practice scores by Bloom scoring method (According to adopted modified bloom's cut off point).

### **4.3 Survey Results**

Totally 137 samples who were working in Yangon General Hospital from various wards who had at least two years' service experiences were involved in this study by answering self-administered questionnaire.

### 4.3.1 Socio-demographic Characteristics of Respondents

**Table (4.1) Socio-demographic Characteristics of Respondents (n=137)**

No.	Description	No. of Respondents	Percentage
1	<b>Age</b>		
a	20-29	49	35.8
B	30-39	37	27.0
c	40-49	25	18.2
d	50-59	26	19.0
2	<b>Gender</b>		
A	Male	0	0
B	Female	137	100.0
3	<b>Religion</b>		
a	Buddhist	126	92.0
b	Christianity	9	6.6
c	Islam	2	1.5
4	<b>Marital Status</b>		
a	Single	98	71.5
b	married	37	27.0
c	Divorced	1	0.7
d	Widow	1	0.7
5	<b>Current ward</b>		
a	Medical Related Ward	40	29.2
b	Surgical Related Ward	27	19.7
c	Operation Theater staff	36	26.3
d	Others	34	24.8
6	<b>Services (Years)</b>		
a	2-9	90	65.7
b	10-19	29	21.2
c	20-29	15	10.9
d	30-39	3	2.2
7	<b>Education Level</b>		
a	Nursing Diploma	108	78.8
b	B.N.Sc., (Regular/ Bridge Nursing)	24	17.5
c	M.N.Sc., (Nursing)	4	2.9
d	PhD (Nursing)	1	0.7

Source: Survey data

The above table shows that the social and demographics characteristics among the respondents. According to the age group, 35.8% (49 respondents) is age between 20-29 years, 27.0% (37 respondents) is between 30-39 years old, 18.2% (25 Respondents) is between 40-49 years old followed by 19.0% (26 respondents) is between 50-59 years old. All the respondents are female.

Among the respondents, 92.0% (126 respondents) are Buddhist, 6.6 (9 respondents) are Christianity and 1.5% (2 respondents) are Islam respectively.

The marital status of the respondents is single 71.5% (98 respondents), married 27% (37 respondents), divorced 0.7% (1 respondent) and widow 0.7% (1 respondent) respectively.

The respondents who work in medical related ward are 29.2% (40 respondents), surgical related ward are 19.7% (27 respondents), operation theater staff 26.3% (34 respondents) and the rest of them are from other wards and OPD of YGH.

Most of the respondents has service-years between 2-9 year of service 65.7% (90 respondents) and only 2.2% (3 respondents) is between 35-39 years of service. The rest of respondents have service-years between 10-19 and 20-29 years of service respectively.

The education level of respondents are that diploma in nursing 78.8% (108 respondents), B.N.Sc., 17.5% (24 respondents) M.N.Sc., degree 2.9% (4 respondents) and PhD. 0.7% (1 respondent) respectively.

**Table (4.2) Knowledge of Occupational Hazards by Respondents (n=137)**

No.	Description	No. of Respondents	Percentage
<b>1</b>	<b>Not an Occupational Hazards</b>		
	Needle Stick Injury is not OH	1	0.7
	Early Arrival At Work is not OH	136	99.3
<b>2</b>	<b>Source of Occupational Hazard</b>		
	HBV	1	0.7
	Chicken Pox	65	47.4
	Malaria	71	51.8
<b>3</b>	<b>Mode of transmission of Occupational Hazards</b>		
	Respiratory disease	102	74.5
	Blood born infection	33	24.1
	Body Contact infection	2	1.5
<b>4</b>	<b>Needle prick -Recapping</b>	137	100.0
<b>5</b>	<b>Violate Standard Precaution</b>		
	Aspiration for blood before intramuscular injection	123	89.8
	Recapping needles after use	7	5.1
	Leaving needles attached to syringes after use	7	5.1
<b>6</b>	<b>Hand washing prevent trans-infection</b>	137	100.0

Source: Survey data

According to surveyed data, the knowledge of occupational hazard of the respondents is shown in table (4.2). On answering the question, only one respondent did not know the needle prick injury. She answered the needle prick is not an occupational hazard who worked in medical ward with eighteen-year experiences. The rest replied the corrected answer about “Early arrival at work” is not an occupational hazard”. The corrected answer are that “needle prick and Early arrival at work” are not occupational hazards.

Only one respondent chose “the HBV infection is not a source of occupational hazard”. The respondents who chose chicken pox was 47.8% and who chose malaria

was 51.8%. The rest of them exactly knew the chicken pox and malaria are not the biological hazards of occupational hazards.

**Table (4.3) Type of Occupational Hazards by Respondents (n=137)**

No.	Type of Occupational Hazards	Yes	Percentage	No	Percentage
1	Physical Occupational Hazards	102	74.5	35	25.6
2	Chemical Occupational Hazards	107	78.1	30	21.9
3	Biological Occupational Hazards	130	94.9	7	5.1
4	Ergonomic Occupational Hazards	9	6.6	128	93.4
5	Mechanical Occupational Hazards	105	76.6	32	23.4
6	Psychological Occupational Hazards	11	8.0	126	92.0

Source: Survey data

On answering the types of occupational hazards, not all the respondents answered correctly all types of occupational hazards. Most of the respondent, 95% (130 respondents) know biological occupational hazards and 5% (7 respondents) do not know it. The question about mechanical and chemical occupational hazards more than 75% answered that they know it. The rest do not know it well. Few of respondents exactly know the ergonomic occupational hazards well (Only 10%) and the rest did not know it clearly. Most of respondents confused about the type of occupational hazards except biological occupational hazards.

**Table (4.4) Awareness of Occupational Hazard and Safety Practices by Respondents (n=137)**

Description	Awareness		Safety Practice	
	No. of Respondents	Percentage	No. of Respondents	Percentage
Hand washing with bactericidal agent	137	100.0	137	100.0
Barrier methods	137	100.0	137	100.0
Gloves	137	100.0	136	99.3
Gowns (apron)	135	98.5	137	100.0
Caps	137	100.0	137	100.0
Masks (goggles)	135	98.5	137	100.0
Environmental control e.g. effective waste handling	137	100.0	137	100.0
Safe disposal of sharps	137	100.0	137	100.0
Complete immunization against Hepatitis B	134	97.8	133	97.1
Complete immunization against Tetanus	134	97.8	133	97.1
Prophylactic treatment and/or procedures following exposures	68	49.6	66	48.2
Correct body posture during procedures	66	48.2	54	39.4
Job Aids (Yes)	22	16.1	-	-
Job Aids (No)	115	83.9	-	-

Source: Survey data

The above table show the frequency and percentage of awareness of occupational hazard and practice of safety practices. The barrier methods mean the nursing technique by which a patient with an infectious disease is prevented from infection to other people. Types of barrier nursing includes contact precautions, airborne precautions, droplet precautions, cough etiquette, safe injection practices and usage of personal protective measures. The barrier methods are aseptic technique, isolation, safer handling of sharps, linen handling and disposal, waste disposal, handling biological spills, environmental cleaning, risk assessment and staff health.

Although almost all the respondents noticed the awareness and followed the precaution about personal protective measures and barrier methods, about 50%

neglect “prophylactic treatment and/or procedures following exposures” and about 40% neglect “the body posture during procedures”.

The question about “Job Aids”, the respondents answered that only 16.1% (22 respondents) have job aid in their working area and the rest said that there was no working job aid to do and follow to reduce the risk of occupational hazards.

**Table (4.5) Safety Practice upon Occupational Hazards by Respondents (n=137)**

<b>Description</b>	<b>Strongly agree N (%)</b>	<b>Agree N (%)</b>	<b>Neutral N (%)</b>	<b>Disagree N (%)</b>	<b>Strongly disagree N (%)</b>
Occupational hazard is an issue that should be taken seriously and given prompt attention in the hospital	64(46.7)	70 (51.1)	3 (2.2)	0 (0)	0 (0)
Prevention of occupational hazards is a joint responsibility of the hospital management and the staff	67(48.9)	70(51.1)	0 (0)	0 (0)	0 (0)
Paying extra attention to occupational hazard is burden on me	65(47.4)	65(47.4)	0 (0)	2(1.5)	5 (3.6)
Training of staff and provision of personal protective equipment is necessary to reduce the risk of exposure to occupational hazard	52(38.0)	82(59.9)	0 (0)	3 (2.2)	0 (0)
Aprons and face masks should be worn in procedures where splash/spill of blood is likely	27(19.7)	94(68.6)	16(11.7)	0 (0)	0 (0)
Gloves should always be worn when administering injections, starting intravenous line and drawing blood	39(28.5)	98(71.5)	0 (0)	0 (0)	0 (0)
Hands should be properly washed after each contact with a patient	69(50.4)	68(49.6)	0 (0)	0 (0)	0 (0)

**Table (4.5) Safety Practice upon Occupational Hazards by Respondents (n=137)****(Continued)**

<b>Description</b>	<b>Strongly agree N (%)</b>	<b>Agree N (%)</b>	<b>Neutral N (%)</b>	<b>Disagree N (%)</b>	<b>Strongly disagree N (%)</b>
Used needles should NEVER be recapped	22(16.1)	44(32.1)	1 (0.7)	53(38.7)	17(12.4)
Sharps should be disposed in sharp boxes	74(54.0)	56 (40.9)	2 (1.5)	4 (2.9)	1 (0.7)
Disposal boxes should be located within a few feet of where you practice	31(22.6)	100(73.0)	2 (1.5)	3 (2.2)	1 (0.7)
HBV, Measles, Mumps, Rubella and Influenza vaccines should be received by all health workers	36(26.3)	101(73.7)	0 (0)	0 (0)	0 (0)
Prolonged standing should be avoided by all health workers	32(23.4)	98 (71.5)	7 (5.1)	0 (0)	0 (0)
All exposures to occupational hazards should be reported to and appropriately documented by appropriate authorities	77(56.2)	60(43.9)	0 (0)	0 (0)	0 (0)
Adequate staffing of hospitals is a way of reducing occupational hazards	80(58.4)	51 (37.2)	6 (4.4)	0 (0)	0 (0)
There should be provision of incentives for adherence to universal safety precautions	76(55.5)	61(44.5)	0 (0)	0 (0)	0 (0)
Punitive actions should be taken against violators of safety practices	67(48.9)	62(45.3)	1 (0.7)	7 (5.1)	0 (0)
Exposure and Control policies should be regularly reviewed by the hospital management	67(48.9)	66 (48.2)	1 (0.7)	3 (2.2)	0 (0)

Source: Survey data

The above table shows the response of safety practices upon occupational hazards by respondents according to Likert score. For all questions, the scores were the reversed of the Likert score (i.e., the response of strongly agree for 5, agree for 4, undecided for 3, agree for 2 and strongly disagree for 1).

The answer “Strongly Agree” was mainly noted in “Adequate staffing of hospitals is a way of reducing occupational hazards” (58,4%) and “All exposures to occupational hazards should be reported to and appropriately documented by appropriate authorities” (56,2%). The answer to “Agree” was highest proportions in “HBV, Measles, Mumps, Rubella and Influenza vaccines should be received by all health workers” (73.7%) than other factors. Majority of participants responded to “Disagree” in “Used needles should never be recapped” (38.7%) “Neutral” and “Strongly Disagree” were answered by very few participants in most factors.

**Table (4.6) Risk and Precaution Factors for Occupational Hazards by Respondents (n=137)**

<b>Description</b>	<b>Once</b>	<b>Two times</b>	<b>Three times</b>	<b>More than three times</b>	<b>Never</b>
Needle pricks	46(33.6)	41(29.9)	6(4.4)	1(0.7)	43(31.4)
Latex Allergies	2(1.5)	0 (0)	0 (0)	49(35.8)	86(62.8)
Constant exposure to radiation	1(0.7)	4(2.9)	1(0.7)	39(28.5)	92(67.2)
Direct contact with body fluids (blood, urine, etc)	2(1.5)	49(35.8)	2(1.5)	58(42.3)	0 (0)
Trips, slips and falls	14(10.2)	44(32.1)	4(2.9)	0 (0)	75(54.7)
Heavy lifting e.g. patients, equipment	3(2.2)	5(3.6)	3(2.2)	88(64.2)	38(27.7)
Chemical spill	4(2.9)	49(35.8)	4(2.9)	47(34.3)	33(24.1)
Assaults from patient	40(29.2)	0 (0)	3(2.2)	0 (0)	94(68.6)
Assaults from co workers	2(1.5)	1(0.7)	3(2.2)	0 (0)	131(95.6)
Assaults from patient's relative	40(29.2)	5(3.6)	3(2.2)	0 (0)	89(65.0)
Work overload	9(6.6)	42(30.7)	2(1.5)	54(39.4)	30(21.9)
Sleepless nights	24(17.5)	7(5.1)	7(5.1)	2(1.5)	97(70.8)
Poorly ventilated working environment	1(0.7)	13(9.5)	0 (0)	79(57.7)	44(32.1)
Anesthetic gases	1(0.7)	0 (0)	0 (0)	30(21.9)	106(77.4)
Fire outbreak	2(1.5)	29(21.2)	0 (0)	0 (0)	106(77.4)

Source: Survey data

The above table shows that the frequency and percentage of respondents who encountered the risk and predisposing factors for the occupational hazards within one year. Most of the respondents faced with needle prick one or two times (33.6% and 30%). The percentage of respondents who answered more than three times are “Latex allergies” (35.8%), “Constant exposure to radiation” (28.5%), “Direct contact with body fluids” (42.3%), “Heavy lifting” (64.2%), “Chemical Spills” (34.3%), “Work overload” (39.4%), “Poorly ventilated working environment” (57.7%) and Anesthetic

gases” (21.9%) respectively. There is no respondents who answered “Never” as “Direct contact with body fluids”.

**Table (4.7) Predisposing Factors for Occupational Hazards by Respondents  
(n=137)**

<b>Description</b>	<b>Agree</b>	<b>Disagree</b>	<b>Not sure</b>
Inadequate hand washing facility	119(86.9)	18(13.1)	0 (0)
Lack of awareness about safety practices in health care settings	77(56.2)	58(42.3)	2(1.5)
Lack of commitment on the part of management to invest in infection control programs	84(61.3)	47(34.3)	6(4.4)
Individuals negligence and carelessness	78(56.9)	54(39.4)	5(3.6)
Lack of adequate protective aids and equipment	119(86.9)	16(11.7)	2(1.5)
Shortage of staff	135(98.5)	2(1.5)	0(0)
Prolonged standing	129(94.2)	6(4.4)	2(1.5)
Inadequate knowledge of usage of modern facilities	66(48.2)	65(47.4)	6(4.4)

Source: Survey data

The above table shows the respondents who realized what were the predisposing factors for the occupational hazards were. The answer “Agree” was mainly noted in “Shortage of staff” (98.5%) and “Prolonged standing” (94.2%). Majority of respondents answered to “Disagree” in “Interest in people” (48.4%) and “Wide range of professional opportunities” (47.4%) respectively. “Not sure” was answered by very few participants in most factors. No one responded as “Not sure” in “Inadequate handing washing” and “Shortage of staff”.

**Table (4.8) Precaution Factors for Occupational Hazards by Respondents  
(n=137)**

Description	Yes		No	
	Frequency	Percent	Frequency	Percent
Incidence report	92	67.2	45	32.8
PEP	27	19.7	110	80.3
PEP Satisfied	24	17.5	113	82.5
Information about OH adequate or not	115	83.9	22	16.1
Communication on various OH	71	55.5	61	44.5
Protocol on OH	98	71.5	39	28.5
Staff for OH Yes (Operational)	12	8.8	112	81.8
Staff for OH Yes (Not Operational)	13	9.5	0	0

Source: Survey data

The above table show presence of incidence report and other predisposing factors upon occupational hazards. The incidence report of occupational hazards was present about two third of Respondents. Only 20% got PEP treatment but some of them had not satisfied with them. More than two third knew they had protocol for OH. Less than 20% had OH staff with only 10% was operational staff with the rest were nonoperational.

**Table (4.9) Sources of Occupational Hazards by Respondents (n=137)**

<b>Description</b>	<b>Frequency</b>	<b>Percent</b>
<b>Information about OH</b>		
Training	47	34.3
Post-employment workshop	6	4.4
Work round	3	2.2
Pre-employment orientation	3	2.2
Trough poster	37	27.0
media	41	29.9
<b>Get Training</b>		
Injection	6	4.4
HCWM	4	2.9
Both	92	67.2
None	35	25.5
<b>Frequency of Training Within one year</b>		
Once	13	9.5
Twice	10	7.3
Thrice	3	2.2
None	111	81.0
<b>TV Channel about OH</b>		
TV	31	22.6
Radio	6	4.4
Posters	18	13.1
Professional meeting	69	50.4
Others	13	9.5

Source: Survey data

The above table show frequency distribution and percentage of source of information about occupational hazards. Most of the Respondents got information about occupational hazards from training and getting training through TV channel, injection practice and HCWM. But most of them did not get training for more than one year.

**Table (4.10) Level of Knowledge, Attitude and Practice Score of Respondents  
(n=137)**

<b>Description</b>	<b>Frequency (n=137)</b>	<b>Percent</b>
Knowledge		
Good Knowledge	46	33.6
Poor Knowledge	91	66.4
Attitude		
Favorable attitude	115	83.9
Unfavorable attitude	22	16.1
Practice		
Good Practice	69	50.4
Poor Practice	68	49.6

Source: Survey data

Results among the respondents, 50.4 had good practice on safety measures on occupational hazards and 84% had favorable attitude however 33.6% of respondents had good knowledge of safety measures on occupational hazards. The rest had poor knowledge, unfavorable attitude and poor practice.

There are two categories for knowledge, attitude and practice scores. The overall score of knowledge was 32, attitude was 17 and practice was 27. Therefore, the score equal and above of 24, 15 and 19 of knowledge, attitude and practice was used as a cut off point for good knowledge, favorable attitude and good practice scores by Bloom scoring method (According to adopted modified bloom's cut off point).

**Table (4.11) Association between Socio-Demographic Factors and Knowledge of Respondents (n =137)**

Description	Knowledge		P value
	Poor Knowledge	Good Knowledge	
<b>Age</b>			
<40yrs	54(59.3)	32(69.6)	0.24
≥40yrs	37(40.7)	14(30.4)	
<b>Department</b>			
Medical related	24(26.4)	16(34.8)	0.004
Surgical related	23(25.3)	4(8.7)	
OT	17(18.7)	19(41.3)	
Others	27(29.7)	7(15.28)	
<b>Service of the Respondents</b>			
<10yrs	55(60.4)	35(76.1)	0.63
≥10yrs	36(39.6)	11(23.9)	
<b>Education status</b>			
Diploma	73(80.2)	36(78.3)	0.788
Graduated	18(19.8)	10(21.7)	

Source: Survey data

In present study there is association between the current working area with the knowledge level of respondents and no other association between others socio demographic characteristics and knowledge of respondents on safety practice of occupational hazards. Its P value is 0.004 and the association was calculated by Fisher Exact Chi-squared test.

**Table (4.12) Association between Socio-demographic Factors and Attitude of Respondents (n = 137)**

Description	Attitude		P value
	Unfavorable Attitude	Favorable Attitude	
<b>Age</b>			
<40yrs	19(22.1)	67(77.9)	0.012
≥40yrs	3(5.9)	48(94.1)	
<b>Department</b>			
Medical related	7(17.5)	33(82.5)	*
Surgical related	3(11.1)	24(88.9)	
OT	8(22.2)	28(77.8)	
Others	4(11.8)	30(88.2)	
<b>Service of the Respondents</b>			
<10yrs	19(21.1)	71(78.9)	0.026
≥10yrs	3(6.4)	44(93.6)	
<b>Education Status</b>			
Diploma	17(15.6)	92(84.4)	0.77*
Graduated	5(17.9)	23(82.1)	

Source: Survey data

There is no association between socio-demographic characteristics and attitude of respondents on safety measures of occupational hazards.

**Table (4.13) Association between Socio-demographic Factors and Practice of Respondents (n = 137)**

Description	Practice		P value
	Poor Practice	Good Practice	
<b>Age</b>			
<40yrs	36(52.9)	50(72.5)	0.018
≥40yrs	32(47.1)	19(27.5)	
<b>Department</b>			
Medical related	17(25)	23(33.3)	0.006
Surgical related	18(26.5)	9(13.0)	
OT	11(16.2)	25(36.2)	
Others	22(32.4)	12(17.4)	
<b>Service of the Respondents</b>			
<10yrs	44(64.7)	46(66.7)	0.809
≥10yrs	24(35.3)	23(33.3)	
<b>Education Level</b>			
Diploma	59(86.8)	50(72.5)	0.038
Graduated	9(13.2)	19(27.5)	

Source: Survey data

There is no association between others socio demographic characteristics and safety practice of respondents against occupational hazards except department of the respondents now they are working. Its P value is 0.006 and the association was calculated by Fisher Exact Chi-squared test.

**Table (4.14) Association between Knowledge and Attitude of Respondents****(n = 137)**

Description	Attitude		P value
	Unfavorable Attitude	Favorable Attitude	
Knowledge	13(14.3)	78(85.7)	0.427
Poor Knowledge	9(19.6)	37(80.4)	
Good Knowledge			

Source: Survey data

There was no statistically significant association between knowledge and attitude of respondents on safety measures of occupational hazards.

**Table (4.15) Association between Knowledge and Practice of Respondents****(n = 137)**

Description	Practice		P value
	Poor Practice	Good Practice	
Knowledge	61(67.0)	30(33.0)	0.000
Poor Knowledge	7(15.2)	39(84.8)	
Good Knowledge			

Source: Survey data

There was statistically significant association between knowledge and practice of respondents on safety measures of occupational hazards. The good knowledge demonstrated by respondents was at variance with practice. The respondents who had good knowledge were followed safety measures of occupational hazards more and vice versa. Its P value is 0.000 and the association was calculated by Fisher Exact Chi-squared test.

## **CHAPTER V**

### **CONCLUSION**

#### **5.1 Findings**

This study was the cross-sectional descriptive study. The study was focused on the awareness of occupational hazards and the safety practices against occupational hazards among nurses in Yangon General Hospital. There were 137 respondents who are sister, staff nurses and trained nurses and had at least two years' experience and had willingness to answer the questionnaires from various wards and OPD by self-administered questionnaire.

In this study, most of the respondents were between 20 and 29 years old Buddhist female nurses. This is because the inclusion criteria of this study was the nurses who were sisters, staff nurses and trained nurses who had at least two years' experience and has willingness to answer the questionnaire from various wards and OPD. The number of respondents were not equally distributed because some of the wards and OPD were not opened during my studied period due to spread of corona virus infection. And the data was collected from the staff of all wards and OPD who were involved in inclusion criteria.

More than 60% of respondents had 2-9 years services experience (90 respondents) and only 2.2 percent (3 respondents) is between 35-39 years of service. The rest of respondents have service-years between 10-19 and 20-29 years of service respectively.

On answering the types of occupational hazards, not all the respondents knew exactly all types of occupational hazards well. Although awareness of occupational hazards and safety issues alone was not enough to ensure the occupational safety measures, hospital workers needed to have good knowledge about occupational hazards and practice to follow safety measures.

On answering awareness on occupational hazards and safety practices question, health care workers were aware of, and recognized variety of occupational hazards, such as physical hazards (74.5 %), chemical hazards (78.1%), biological

hazards (94.9 %), mechanical hazards (76.6 %) and ergonomic hazards (6.6 %) and psychological hazards (8.0 %). Less than 10% knew ergonomic and psychological occupational hazards.

Only one respondent answered the needle prick is not an occupational hazard who worked in medical ward with eighteen years experiences. The rest replied that early arrival at work is not an occupational hazard.

The preventive measures of the respondents were examined in this study. It revealed that all respondents were awareness for mask and goggles during clinical procedures was practiced. Although all the respondents noticed the awareness and followed the precaution about personal protective measures, some of them neglect prophylactic treatment and/or procedures following exposures and practice incorrect body positioning during clinical procedures. The safety measures of use of PPEs, effective disposal control and sharp related injuries are reported as controlled measures by all the respondents.

In addition, all respondent safely disposed sharps and injection needles while 97.1% of respondents had been fully immunized against Hepatitis B virus and ATT as at the time of the study. Only one respondent chose the HBV infection was not a source of occupational hazard. The respondents who chose chicken pox were 47.8% and who chose malaria were 51.8% respectively.

The question about “Job Aids”, the respondents answered that only 16.1% had job aid in their working area and the rest said that there was no working job aid to do and don't to reduce the risk of occupational hazards.

The study data showed half of respondents faced with occupational hazards within one year and only 2.9% answered that they never exposed to occupational hazards. The presence of incidence report when they encountered upon occupational hazards about two third of the respondents. One fifth of them treated with PEP but among them only 17% satisfied with that treatment. This may be due to the side effects of the drugs.

Most of them answered that information obtained in their work place was adequate but only half of them notified there was linked various occupational hazards. The pre-employment orientation modules and mode of delivery should be strategically reviewed to strengthen positive staff awareness on occupational safety and the use of standard operation procedures by health care workers. The commonest

source of knowledge of occupational hazards identified by this study was training (34.3%) and from media (29.9%).

Although most of the respondents got information about occupational hazards were mainly from training and media and they answered having both injection and HCWM training, more than 80% answered, did not get training within one year. Half of the respondents prefer to message about OH from professional meeting. More than two third knew they had protocol for OH. Less than 20% had OH staff with only 10% was operational staff with the rest were nonoperational.

Among respondents, only 33.6% had good knowledge, but 83.9% respondents had favorable attitude and 50.4% had good practice. The respondents' department now they are working and age categories were significantly associated with safety practice of respondents.

The respondents who had good knowledge were followed safety measures of occupational hazards more and vice versa. Although there was statistically significant association between knowledge and practice of respondents on safety measures of occupational hazards, no statistically significant associations between knowledge and attitude, knowledge and practice, attitude and practice of respondents on safety measures of occupational hazards. The good knowledge demonstrated by respondents was good at safety practice, therefore, measures aimed at promoting safety practices to reduce occupational hazards.

## **5.2 Suggestions**

The awareness of occupational hazards among nurses and safety practices among nurses which influence the health, well-being and quality of work life for health workers lead to higher knowledge level. It creates practice to promote the health and well-being of healthcare worker as it is vital to the healthcare system.

The availability of standard operating procedure guidelines and job aids should be accessible in working environment as occupational safety measures. Otherwise, occupational injuries and infections had exposed to health care workers. YGH and all the hospitals mainly focuses on staff involvement so that need to create protocol as regards to the occupational hazards and training of the health care staff for continuous improvement.

Routine training and safety precaution should be mandatory to health care workers on occupational hazards and safety practices. Full immunization against vaccine preventable, contagious diseases should take for all health care workers. Timely documentation of all cases of exposure to occupational hazards should note and strengthen for immediate response for getting the post exposure prophylaxis of health care workers to occupational hazards.

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**APPENDIX**  
**Questionnaire form (English)**  
**Yangon General Hospital**

Questionnaires for Awareness of Occupational Hazards and Safety Practices among Nurses at Yangon General Hospital

Nurses Register No. \_\_\_\_\_

ID \_\_\_\_\_

Date \_\_\_\_\_

**Section A: (Socio–Demographic Data of Participants)**

1. Age (as at last birthday): \_\_\_\_\_
2. Gender:  
(a). Male ( ) (b). Female ( )
3. Religion:  
(a). Buddhism ( ) (b). Christianity ( ) (c). Islam ( )  
(d). Hindu ( ) (e). Others ( )
4. Marital Status:  
(a). Single ( ) (b). Married ( )  
(c). Divorced/Separated ( ) (d).Widow/widower ( )
5. Current Department: \_\_\_\_\_
6. Years of working experience: \_\_\_\_\_
7. Highest educational qualification:  
(a). Nursing Diploma ( )  
(b). BnSc (Regular/ Bridge Nursing) ( )  
(c). MnSc. (Nursing) ( )  
(d). PhD (Nursing) ( )  
(e). Others ( )

**Section B: (Knowledge, Awareness and Perception)**

**Instruction:** *please, tick the appropriate options*

8. Do you know about occupational hazards?  
(a). Yes ( ) (b). No ( )

9. Which one of the following is **NOT** an occupational hazard in this hospital?
- (a). Noise ( ) (b). Needle stick injuries ( )  
(c). Early arrival at work ( )  
(d). Body contamination with patients' body fluids ( )
10. Which one of the following is **NOT** an occupational infection in this hospital?
- (a). HBV ( ) (b). HIV ( )  
(c). Chicken pox ( ) (d). Malaria ( )
11. The **MOST** likely source of occupational infections is one of the following:
- (a). Air-borne ( ) (b). Feces and urine ( )  
(c). Blood and body fluids ( ) (d). Body contact ( )
12. During which of the following activities is a needle stick injury **MOST** likely to occur?
- (a). Recapping ( )  
(b). Transporting to the sharp's disposal safety box ( )  
(c). Handling equipment before use ( )  
(d). Handling equipment after disposal ( )
13. Which of the following violates the Standard Precautions?
- (a) Aspirating for blood before intramuscular injections ( )  
(b). Recapping needles after use ( )  
(c). Leaving needles attached to syringes after use ( )
14. Hand washing is good to prevent occupational cross infection after procedures
- (a). Yes ( ) (b). No ( ) (c). Don't know ( )
15. What type(s) of occupational hazards are you aware of? (*you must answer all types or not*)
- (a). Physical ( ) (b). Chemical ( )  
(c). Biological ( ) (d). Ergonomic ( )  
(e). Mechanical ( ) (f). Psychosocial ( )

**I. Awareness/practice of safety precautions**

16. Are you aware of safety precautions against occupational hazards?
- (a). Yes ( ) (b). No ( )

If yes, which of the following precautions are you aware of and which do you practice?

Precautions	Awareness		Use/Practice	
	Yes	No	Yes	No
17. Hand washing with bactericidal agent				
18. Barrier methods:				
19. Gloves				
20. Gowns (apron)				
21. Caps				
22. Masks (goggles)				
23. Environmental control e.g. effective waste handling				
24. Safe disposal of sharps				
25. Complete immunization against:				
i. Hepatitis B				
ii. Tetanus				
26. Prophylactic treatment and/or procedures following exposures				
27. Correct body posture during procedures				

28. Do you have job aids (e.g. instructions) stating procedure and safety precautions on your job?

(a). Yes (    )    (b). No (    )

29. How often do you comply with safety precautions?

(a). Always (    )    (b). Often (    )  
(c). Sometimes (    )    (d). Never (    )

30. If **NOT** “always”, why?

(a). Makes me feel uncomfortable (    )  
(b). Compliance wastes time (    )  
(c). Unavailability of safety kits (    )

31. Why is it important to comply with safety precautions?

(a). Because it’s the hospital policy (    )  
(b). For personal and patients’ safety (    )

(c). Others (Please specify): \_\_\_\_\_

**Perception of occupational hazards**

32. Do you think you are at risk of occupational hazards?

(a). Yes ( ) (b). No ( )

33. If yes, to what degree

(a). High ( ) (b). Medium ( ) (c). Low ( )

Do the following constitute occupational hazards to you? *Please tick as appropriate.*

<b>Description</b>	<b>1. YES</b>	<b>2. NO</b>
34. Needle Prick		
35. Body contact with retroviral positive patients		
36. Exposure to radiation		
37. Assault from patient		
38. Direct contact with patient's body fluid		
39. Assault from co-workers		
40. Recapping of needle after use		
41. Weekly night shifts		

**Section C: (Attitude towards Hazards/Safety Practices)**

**Instruction:** *Please, tick as appropriate*

<b>Description</b>	<b>Strongly agree</b>	<b>Agree</b>	<b>Undecided</b>	<b>Disagree</b>	<b>Strongly disagree</b>
42. Occupational hazard is an issue that should be taken seriously and given prompt attention in the hospital					
43. Prevention of occupational hazards is a joint responsibility of the hospital management and the staff					
44. Paying extra attention to occupational hazard is a burden on me?					
45. Training of staff and provision of personal protective equipment is necessary to reduce the risk of exposure to occupational hazard					
46. Aprons and face masks should be worn in procedures where splash/spill of blood is likely					
47. Gloves should always be worn when administering injections, starting IVs and drawing blood					
48. Hands should be properly washed after each contact with a patient					
49. Used needles should NEVER be recapped					

<b>Description</b>	<b>Strongly agree</b>	<b>Agree</b>	<b>Undecided</b>	<b>Disagree</b>	<b>Strongly disagree</b>
50. Sharps should be disposed in sharps' boxes					
51. Disposal boxes should be located within a few feet of where you practice					
52. HBV, Measles, Mumps, Rubella and Influenza vaccines should be received by all health workers					
53. Prolonged standing should be avoided by all health workers					
54. All exposures to occupational hazards should be reported to and appropriately documented by appropriate authorities					
55. Adequate staffing of hospitals is a way of reducing occupational hazards					
56. There should be provision of incentives for adherence to universal safety precautions					
57. Punitive actions should be taken against violators of safety practices					
58. Exposure and Control policies should be regularly reviewed by the hospital management					

**Section D: (Risk and Predisposing Factors)**

**1. Risk**

How many times have you had occupational hazard conditions in the LAST TWO MONTHS? *(Please tick as appropriate).*

<b>Hazard</b>	<b>Once</b>	<b>Two times</b>	<b>Three times</b>	<b>More than three times</b>	<b>Never</b>
59. Needle pricks					
60. Latex Allergies					
61. Constant exposure to radiation					
62. Direct contact with body fluids(blood, urine, etc)					
63. Trips, slips and falls					
64. Heavy lifting e.g. patients, equipment					
65. Chemical spill					
66. Assaults from patient					
67. Assaults from co workers					
68. Assaults from patient's relative					
69. Work overload					
70. Sleepless nights					
71. Poorly ventilated working environment					
72. Anesthetic gases					
73. Fire outbreak					

74. When was the last time that you had exposure to an occupational hazard in this hospital?

- (a). Within the last two months ( )
- (b). Within two to six months ( )
- (c). Within six to 12 months ( )
- (d). > 1 year ( )

75. When you were exposed, did you report the last incidence to the appropriate section in the hospital?

- (a). Yes ( ) (b). No ( ) *[If No, skip 80 and 81]*

76. Did you receive any post-exposure treatment?

(a). Yes ( ) (b). No ( ) [If No, skip 81]

77. Were you satisfied with the post exposure treatment?

(a). Yes ( ) (b). No ( )

**II. Predisposing factors for occupational hazards in your workplace**

**INSTRUCTION:** (Please tick as appropriate)

<b>Factors</b>	<b>Agree</b>	<b>Disagree</b>	<b>Not sure</b>
78. Inadequate hand washing facility			
79. Lack of awareness about safety practices in health care settings			
80. Lack of commitment on the part of management to invest in infection control programs			
81. Individuals negligence and carelessness			
82. Lack of adequate protective aids and equipment			
83. Shortage of staff			
84. Prolonged standing			
85. Inadequate knowledge of usage of modern facilities			

**SECTION E: (MEASURES AGAINST OCCUPATIONAL HAZARDS)**

**INSTRUCTION:** (Please tick as appropriate)

86. Where did you get your information on occupational hazards?

(a). During my training ( )

(b). Post-employment professional workshop ( )

(c). Ward rounds/Clinics ( )

(d). pre-employment orientation ( )

(e). Through posters and handbills in the hospital ( )

(f). Media ( )

(g). Others (Please, specify) \_\_\_\_\_

87. Do you consider the information adequate?

(a). Yes ( ) (b). No ( )

88. Have you been trained on occupational hazards and prevention strategies?
- (a). Yes, on injection safety only ( )
- (b). Yes, on HCWM only ( )
- (c). Yes, on injection safety and HCWM ( )
- (d). On safety practices in hospitals ( )
- (e). No ( )
89. How many times have you attended trainings on occupational hazard exposure and preventive strategies in the last 12 months?
- (a). Once ( ) (b). Twice ( ) (c). Thrice ( )
- (d). More than three times ( ) (e). None ( )
90. Have you heard/seen any communication on various types of occupational hazards in the last one month?
- (a). Yes ( ) (b). No ( )
91. Which of these channels do you prefer for messages about occupational hazard messages?
- (a). TV ( ) (b). Radio ( ) (c). Posters ( )
- (d). Professional meetings ( )
- (e). Others (Please specify) \_\_\_\_\_
92. Do you know about any protocols that are in place to deal with occupational hazards in this hospital?
- (a). Yes ( ) (b). No ( )
93. If Yes, mention those protocols:
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
94. In this hospital, is there a designated unit that manages staff occupational hazard and exposure?
- (a). Yes and operational ( ) (b). Yes but not operational ( )
- (c). No ( )
95. If yes, do you consider its coverage adequate?
- (a). Yes ( ) (b). No ( )