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Assessment of Occupational Safety at Al-Shifa Medical Complex

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Assessment of Occupational Safety at Al-Shifa Medical Complex

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Dedication

To my precious and valuable father, who demonstrated greatest faithfulness and endless love.

To my beloved mother, who has always been full of kindness, love and loyalty.

To soul of my uncle Ali "The martyr of exile", who inspired in me the spirit of courage and challenge.

To my lovely wife for her patience, encouragement and endless support.

To my children: Maryam, Abdullah and Hamza.

To my brothers, sisters and family, who encouraged and supported me.

To the healthcare workers, the spring of humanity, tender and sacrifice.

To my precious country, Palestine, as a small contribution to the sea of sacrifices offered to gain its liberation.

To everyone who contributed to make this study a reality.

Shehada Rezeq Al-Ajrami

Declaration

I certify that this entire thesis submitted for the Degree of Master, is the result of my own work, except where otherwise acknowledged, and that this study (or any part of the same) has not been submitted for a higher degree or qualification to any other university or institution.

Signed:

Shehada Rezeq Al-Ajrami

..../ .... / ....

Acknowledgment

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Abstract

Occupational Safety at healthcare sector has been identified as an essential issue for the health organizations, patients and health care workers. Little is known about occupational safety issues at the Ministry of Health-Gaza.

The study employed a descriptive, analytical cross sectional design with a triangulated approach (quantitative and qualitative). Self-administered questionnaire, key informant interviews and observational checklist according to the Occupational and Safety Health Administration were used for data collection. A proportional stratified systematic random sampling was used from healthcare workers working at the complex who conclude the target population. Of the 370 workers selected, 350 responded and completed the questionnaires, with a response rate of 94.5%. The overall reliability coefficient (Cronbach's Alpha) for the study questionnaire was 0.93 which is acceptable. Statistical Package for the Social Sciences Program has been used for data analysis.

The study revealed that the different dimensions of occupational safety had different mean percentages with an average score of 55.6% reflecting moderate perceptions of healthcare workers towards the current status of occupational safety. Healthcare workers' compliance with the prevention tools and safety procedures dimension had the highest percentage with 71.13%. Identification of workplace hazards and accidents and availability of prevention means dimensions. had moderate percentages with 67.5% and 54.7% respectively. Meanwhile, related factors of workplace hazards and accidents dimension had a mean score of 49%. Availability of occupational safety rules and guideline and their activation and development dimensions had low percentages with 46.3% and 49.2% respectively. In addition, top management commitment to safety issues and safety training programs had low percentages with 46.7% and 43.1% which elicited the lowest percentage dimension.

Furthermore, the study results agreed on that, the current occupational safety means and measurements at the complex are available to some extent but not sufficient and not applicable as required. They were met Occupational Safety and Health Administration standards to some extent in the main three hospitals as well as the special surgery building was elicited the better followed by the surgery building, while the obstetric building had the lowest status.

Furthermore, the results showed that the main occupational hazards and diseases to witch healthcare workers exposed were infectious respiratory and skin transmitted diseases according to 49.7% , back pain and musculoskeletal disorders according to 30.8% , needle stick injuries and blood transmitted diseases as reported 28.8% , work overload and violence as agreed 24.2%, varicose veins as claimed 12% , electrical hazards according to10% , carcinogenic hazards as reported 5.7% and vision problems according to 4.2% of the participants.

The main factors beyond these hazards were lack of specialized safety department or committee ;lack of prevention tools and safety procedures; lack of compliance to safety guidelines and regulations application; scarcity of employees training programs; lack of protection methods and lack of occupational safety knowledge among the employees.

Moreover, the findings revealed that respondents with younger age and fewer years of experience had higher occupational safety scores than their counterparts of older age and longer experience years. Also, there were variations in the overall perception in reference to workplace towards surgical hospital. The nurses had higher mean scores than other professional categories. Furthermore, the respondents with lower educational level perceive occupational safety more than those with higher ones. Therefore, the single respondents and those who work shifts had higher scores than married respondents and those who work only morning shifts. On the other hand, the results showed that no statistical differences were found in overall occupational safety status perceptions in reference to age and weekly working hours.

The status of occupational safety is moderate and still needs a lot of efforts to enhance the effective management and successful practicing of safety issues in Al-Shifa Medical Complex by increasing attention and awareness at all levels to promote and improve the current status.

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List of abbreviations

ANOVA	Analysis of Variance
BOHS	Basic Occupational Health Services
CDC	Centers for Disease Control and Prevention's
CD	Civil Defense
EAP	Emergency Action Plan
EU-OSHA	European Union- Occupational Safety and Health Administration
FPP	Fire Prevention Plan
GPA	Global Plan of Action
GS	Gaza Strip
HCWs	Health Care Workers
HRDD	Human Resources Development Department
ILO	International Labor Organization
IOM	Institute of Medicine
ITC-ILO	International Training Center- International Labor Organization
JILOC	Joint International Labor Organization Committee
LOS	length of stay
LSD	Least Significant Difference
EQA	Environment Quality Authority
MOH	Ministry Of Health
MOI-CD	Ministry of Interior- Civil Defense
MOL	Ministry Of Labor
MSDS	Material Safety Data Sheets
NGOs	Non-Governmental Organizations
NIOSH	National Institute of Occupational Health and Safety

OHS	Occupational Health and Safety
OHSMS	Occupational Health and Safety Management System
OPD	Out Patient Department
OS	Occupational Safety
OSH	Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
OSHS	Occupational Safety and Health Standards
PASSIA	Palestinian Academic Society for the Study of International Affairs
PCBS	Palestinian Central Bureau of Statistics
PDCA	Plan-Do-Check-Act
PHC	Palestinian Health Care
PHCS	Palestinian Health Care System
PMMS	Palestinian Military Medical Services
PMOM	Palestinian Ministry of Manpower
PNGO	Palestinian Non-Governmental Organizations
PPE	Personal Protective Equipment
SMS	Safety Management System
SPSS	Statistical Package of Social Science
STEL	Short Time Exposure Level
TWA	Time Weighted Average and
UNRWA	United Nations Relief and Works Agency for Refugees of Palestine in the Near East
WB	West Bank
WHO	World Health Organization
WHS	Workplace Health and Safety

Chapter 1

1. Introduction

1.1 Research background

The right to health services and safety at work is a basic human right. People spent one-third of their adult life at work, contributing actively to the development and wellbeing of themselves, their families and societies. Work may impact on health positively or adversely (WHO, 2001).

Occupational safety and health (OSH) were commonly referred to occupational health and safety (OHS) or workplace of health and safety (WHS) that was an area concern with the safety, health and welfare of people engaged in employment. The goals of occupational safety and health programs included fostering a safe and healthy work environment. OSH may also protect co-workers, family members, employers, customers, and many others who might be affected by the workplace environment (Abdulhameed, & Sirajo, 2015).

The World Health Organization (WHO) defined occupational health (OH) as it deals with all aspects of health and safety in the workplace and had a strong focus on primary prevention of hazards. Health had been defined as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. In addition, occupational health was a multidisciplinary field of healthcare concerned with enabling an individual to undertake their occupation in the way that caused least harm to their health (WHO, 2003).

Globally according to the International Labor Organization Training Center, workplaces were responsible for more than 2.3 million deaths per year, of which 350,000 were fatal accidents and nearly 2 million were due to work-related diseases (ITC-ILO, 2015).

Nationally, particularly in the Gaza Strip according to the Palestinian Ministry of Labor the work-related injuries continues to increase as a result of lack of attention to safety and health issues which amounted in end of 2015 to nearly 131 work accidents, approximately 48 % of the total of these incidents had been concentrated on in the construction sector and 20 % of them in the manufacturing sector as well according to Ministry of Labor. The main causes of work-related injuries were problems lies in the failure to follow occupational safety and health procedures relating to work conditions in a lot of economic establishments, as a result of the lack of professional awareness in safety procedures of the workers, lack of cooperation work between employers and workers, lack of workers

compliance to use personal protection tools as they became available, in addition to lack of media in promoting the concepts of occupational safety and health in the Palestinian society, as well as lack of cooperation between relevant institutions in the promotion of occupational safety and health procedures (MOL, 2016).

Hence the interest in occupational safety and health had increased and had enacted laws and regulations and held local and international conferences successive aimed to protect rights in the work, such as the International Convention (Safety, health and professional Convention) No. (155) of 1981, which aimed at preventing accidents of health and injuries resulting from work and reduced the risks associated with the work environment.

Occupational health should aim at: (a) the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations; (b) the prevention amongst workers of departures from health caused by their work conditions; (c) the protection of workers in their employment from risks resulting from factors adverse to health; (d) the placing and maintenance of the worker in an occupational environment adapted to his physiological and psychological capabilities; and, (e) to summarize, the adaptation of work to man and of each man to his job (ILO, 2001).

Furthermore, since 1950, the International Labor Organization (ILO) and the World Health Organization (WHO) had shared a common definition of occupational health. It was adopted by the Joint ILO/WHO Committee on occupational health at its first session in 1950 and revised at its twelfth session in 1995. The definition reads: "The main focus in occupational health was on three different objectives: (a) the maintenance and promotion of workers' health and working capacity; (b) the improvement of working environment and work to become conducive to safety and health and (c) development of work organizations and work cultures in a direction which supported health and safety at work and in doing so also promoted a positive social climate and smooth operation and may enhance productivity of the undertaking".

Moreover, the Constitution of the WHO, the WHO global strategy on health for all and the ILO Conventions on occupational safety and health and on occupational health services stipulated the fundamental right of each worker to the highest attainable standard of health. To achieve this objective, the WHO global strategy on occupational health for all endorsed by the World Health Assembly in 1996 stipulated that access to occupational health services should be ensured for all workers of the world irrespective of age, sex, nationality, occupation, type of employment, or size or location of the workplace.

Additionally, in 2007, the World Health Assembly endorsed the WHO Global Plan of Action on Workers' Health (GPA) (2008-2017) and urged member states to improve the performance of and access to occupational health services and to work toward full coverage of all workers to basic occupational health services for the primary prevention of occupational disease and injury.

Furthermore, nationally in Palestine regarding occupational safety and health issues the Palestinian National Authority had endorsed many laws and regulations such as: the Palestinian Labour Law No. (7) for the year (2000) section four articles (90-92); the Palestinian Public Health Law No. (20) for the year (2004) chapter five articles (33-35), and the Palestinian Environmental Low No.(7) for the year 1999 article (20).

Considering the hospitals, they were considered as large, organizationally complex and system driven institutions employing large numbers of workers from different professional streams. They are known as the most hazardous workplaces and their workers might exposed to a wide range of physical, chemical, biological, ergonomically and psychological hazards. Thus occupational health and safety issues relating to the personal safety and protection of its workers were a very important environmental health concern for hospitals. Therefore hospitals also played an integral role in community protection through wider public health issues including injury and illness prevention, health surveillance and disease notification, and disaster management. Additionally, over and above their core business of acute health care for inpatients, hospitals were also concerned with the safety and protection of those in patients with respect to nosocomial infection control, evacuation plans for internal emergencies, food preparation by the hospital kitchen. Finally, hospitals were also concerned with protection of the environment through their waste management strategy, and in particular, the collection and disposal of contaminated waste (Sadleir, 2001).

Palestine, particularily in Gaza, limited published studies were found to touch the issues of occupational safety. Some studies were focused on the patients safety. Because of the importance of occupational safety, this study addresses this important issue. The researcher conducted this study to assess the occupational safety status at the biggest Gaza governmental medical complex and to explore the different factors which influence the occupational safety status.

1.2 Study Problem

Economically, morally, and legally occupational safety and health had become an important issue. Occupational safety and health was concerned with preserving and protecting human and facility resources in the workplace and involved helping people by preventing them from being injured or becoming ill due to hazards in their workplaces (Friend, 2010).

Based on interviews with Staff Doctor, Infection Control Officer and many employees of different occupations at Al-Shifa Medical Complex in Gaza Strip which genuinely was the largest hospital among the hospitals functioning within the Palestinian Authority Territory. It was in effect accredited as the central complex in the Gaza Strip with about 746 beds serving patients from across the Gaza Governorate and other governorates (MOH, 2013). Also it was certainly considered as a referral complex for a number of hospitals in the Gaza Strip and the only public medical complex in the Gaza Strip to be acknowledged as the best public one which offered secondary, tertiary and specialized services and provided emergency services to the majority of injured people. The complex had a total of 2037 staff members.

The researcher obviously found that many of the occupational injuries were almost not recorded; scale of violations of the rules and standards of occupational safety, lack of occupational safety tools and measurements for protection and prevention of employees, inadequate employees knowledge, awareness, skills and training programs regarding occupational and safety standards. Therefore there were deficiency of occupational injuries, accidents and related diseases reporting, documentation and medical records, as well as absence of occupational safety policy, regulations and guidelines implementation by top management. That was in addition to lack of occupational health and safety management system and limiting it to the Staff Doctor and Quality Development and Infection Control Office. All of that lead to the importance of this study which is aimed to assess the current situation of occupational safety at Al-Shifa Medical Complex with purpose to promote, foster and improve to become more suitable, healthier and safer working environment, which would allow healthcare providers to perform their duties of healthcare services provision with high performance, effectiveness, efficiency and quality, which would reflect positively on the care of patients and would affect the community at large positively.

1.3 Justification

The importance of studying the process of estimating the economic value of the human resource in any productive unit must receive attention and concrete methods and must be followed by wider application in all hospitals to come up with an accurate picture of the value of human capital. In addition to that, the return of investment in training, education and experience indicates the importance of this study as: limited studies of occupational safety and health for public health facilities in the Gaza Strip; lack of information and statistics of occupational accidents and related diseases at MOH, Gaza Strip; shortage of manpower that increased the employee's workload and working hours and shortage of infrastructure resources. Therefore that was to enrich the researcher knowledge about occupational safety and health and adding new scientific addition to the Palestinian and Arab library; to contribute on employees' awareness and knowledge of occupational safety rules; how to avoid occupational hazards and their prevention and thus reduce the losses both physical and human in the hospitals. That was in addition to importance of the study results for hospitals management that would take development of the safety and occupational health rules and procedures and to make sure that occupational safety and health rules, procedures, polices, regulations, and measurements were applicable; thus the study would help the Palestinian society in all occupational safety precautions, rules and procedures to be followed in the work environment in order to create a secure environment and risk-free environment in all areas.

1.4 Study objectives

1.4.1 Overall objective:

- The overall objective of this study is to assess the occupational safety at Al-Shifa Medical Complex with aim to foster, promote and improve to secure safety work environment.

1.4.2 Specific objectives:

- To appraise the occupational safety policy, regulations, guidelines and protocols and their activation and development.

- To assess the commitment of the complex top management to occupational safety issues.

- To identify the occupational risks, hazards, accidents and related diseases among healthcare workers at the complex and the factors beyond these hazards and diseases.

- To examine occupational safety means and measurements availability at the complex and to which extent they meet the OSHA standards.

- To determine healthcare workers compliance with occupational safety practices and to which extent they were trained to use safety means and measurements.

- To suggest recommendations for healthcare decision makers on how to promote, enhance and improve the occupational safety status at the health facilities.

1.5 Research Questions

1. What is the current status of occupational safety at Al-Shifa Medical Complex.

2. How do the healthcare workers perceive and report occupational safety related issues at the complex departments?

3. Are there applicable occupational safety policy, guidelines and protocols?

4. Is there activation and a development of occupational safety policy, guidelines and protocols?

5. To which extent is the complex top management committed to occupational safety issues?

6. What are the main occupational risks that healthcare workers exposed to?

7. What are the main occupational hazards and diseases that the healthcare workers are exposed to?

8. What are the main factors beyond related occupational hazards and diseases among healthcare workers?

9. Are there available occupational safety means and measurements? Eventually to which extent do they meet with OSHA standards?

10. To which extent is the compliance level of healthcare workers to occupational safety means and measurements?

11. Are there any applicable occupational safety and health training programs?

12. What are the organizational factors that affected occupational safety?

13. What are the personal factors that affected occupational safety?

14. Are there differences in the perception of occupational safety in reference to personal characteristics e.g. (age, gender, marital status, educational level)?

15. Are there differences in the perception of occupational safety in reference to work related characteristics, e.g. (profession, work place, experience years, daily work arrangement and weekly work hours)?

16. What are the suggested recommendations and actions needed to enhance and improve the occupational safety status at health facilities?

1.6 Context of the Study:

This study was conducted at Al-Shifa Medical Complex, which is the biggest governmental hospital of MOH in the Gaza Strip, Palestine. Thus the researcher tends to present some factual background information related to the geographical and demographic contexts of Gaza strip. In addition to that, information about the health care system in the Gaza Strip will be presented also including staff categories within the system as this study was carried out at governmental hospital that is directly related to MOH care system.

1.6.1 Demography and Population:

Palestine, currently under occupation, is located on the east coast of the Mediterranean Sea, west of Jordan and to the south of Lebanon. The entire area of Palestine is about 27000 sq. kilometers. Nowadays the historical Palestine became separated into two areas geographically: The West Bank and the Gaza Strip (PASSIA, 2009).

The Gaza Strip is a narrow zone of land, located in the southwest of Palestine, the Strip borders Egypt on the southwest and the Israeli occupation state from the south, east and north (Annex 1). It is 45 kilometers long and 6-12 kilometers wide, with an area of 365 square kilometers. The Gaza Strip has suffered a lot from recurrent occupations (MOH, 2014a). It is divided into five districts; North, Gaza, Mid-zone, KhanYounis and Rafah. There are four towns, eight refugees' camps and fourteen villages (MOH, 2013). According to the Palestinian Bureau of Statistics (PCBS), the total number of the

Palestinian population residing in the GS in the end of 2015 is around 1.850 million with younger generation of 42.8% aged up to 14 years and population density in the GS was 5,070 inhabitants per one square kilometer (PCBS, 2016). The Palestinian population in the GS has one of the highest fertility rates in the region 4.5, compared to 3.7 in the West Bank (WB), 3.5 in Egypt, 2.2 in Lebanon, 3.1 in Syria and 2.8 in Israel (MOH, 2015). The crude birth rate in the GS in 2015 was 36.3/1000 population (MOH, 2015) and the population growth rate was 3.4 %. Nevertheless, the crude death rate was 3.4/1000 population (PCBS, 2016).

Such high population density, high growth rate, and young generation increase the burden on the Palestinian Health Care System (Hamad, 2011). This in turn requires careful planning from policy makers to invest this high percentage of young population to develop a strong economy rather than leaving them for unplanned and unclear future with possible aggravated unemployment and high poverty levels. Thus the importance of being an efficient health care system is here more important than elsewhere (Hamad, 2011).

1.6.2 Palestinian Healthcare System (PHCS):

The Palestinian health care system mainly composes of five main providers; the Governmental (MOH), the Non-Governmental Organizations (NGOs), the United Nations Relief and Work Agency for the Refugees of Palestine in the Near East (UNRWA), the Palestinian Military Medical Services (PMMS) and the private sector. The MOH is the main healthcare provider and serves as a regulatory body for the Palestinian healthcare system; it provides primary, secondary and tertiary services for the whole population. It also purchases advanced medical services from the neighboring countries and from other private and NGOs healthcare facilities. Since 1994 MOH took over the responsibilities of public health services and has accepted the huge requirements for human resource development. Therefore, the Human Resources Development Department (HRDD) was established and major projects were launched for this purpose, including the investment in human resources development, which had been considered by the MOH as the most significant challenge for the Palestinian people. It largely provides both primary and secondary health services and purchases tertiary services from private providers domestically and abroad. In addition it is responsible for the supervision, regulation, licensure and control of the whole health services in Palestine. The overall health level of

the Palestinian population is vehemently considered as relatively good, particularly due to the strong performance on most basic public health and PHC functions (PNGO, 2009). According to MOH report in 2014 only (5.5%) of all deaths were due to infectious diseases. Meanwhile, the leading causes of death substantially have chronic conditions, namely heart diseases (25.1%), malignant neoplasm (13%), cerebrovascular conditions (8.8%), perinatal conditions (7.3%) and accidents accounted for (6.4%) of the deaths (MOH, 2014b).

1.6.3 Hospitals in Gaza Strip:

In the Gaza Strip there are 31 operating hospitals: 13 governmental and the other 18 are managed by NGOs and the PMMS distributed as 15 in Gaza, 6 in the north, 5 in Khanunis, 3 in Rafah and 2 in middle zone. The total capacity beds are 2895: of them 2037 governmental managed by the MOH; 710 by the NGOs and 148 by the PMMS. Around 74 % of the beds belong to general hospitals, 19 % to specialized hospitals, 4 % to delivery and 3 % to rehabilitation services (MOH, 2014c). The bed occupancy rate at governmental hospitals is 88% with an average length of stay (LOS) 3.0 day. At NGOs hospitals the occupancy rate is 28 %, LOS is 1.3 day, while at PMMS occupancy rate 14.5 %, LOS is 0.9 day. According to the MOH work force (2014) report, there are 13,899 employees working at the health sector, 65.2 % out of them (9061) are working in MOH distributed as: 1958 (63.8 %) are nurses, 1392 are physicians, 1508 are assistant medical professionals, 237 are pharmacists, while Administrators, clerks, workers and other non-medical staff constitute the rest of total number with 2679 (MOH, 2014). The current ratio of health workforce at MOH is 0.7 Physician's per bed, 0.06 Pharmacists' per bed, 0.8 Nurses ratio per bed.

1.6.4 Al-Shifa Medical Complex:

Al-Shifa Medical Complex is the largest public medical complex among the hospitals functioning within the Palestinian Authority territory, it is accredited as the central governmental complex in the Gaza Strip with about 746 beds serving patients from across the Gaza City province and neighboring provinces. The complex is located in the Gaza City and is considered as a referral one for a number of hospitals in the Gaza Strip. It is the only public complex in the Gaza Strip to be acknowledged as the best public. It is

considered as a tertiary and highly specialized, composed of three hospitals: surgical, medical, and gynecological and contains 35 medical departments. It has a total of 2037 working employees distributed as: 670 (32.9%) are nurses, 570 (28%) are medical professionals included physicians, pharmacists and assistant medical professionals, paramedics are 189 (9.3%), while Administrators, clerks, workers are 306 (15%) and other non-medical staff including engineering and maintenance staff, cleaning workers, food workers and transport and ambulance officers constitute 302 (14.8%) according to Al-Shifa Medical Complex-Staff Affairs Department, (2016). The complex is also the main teaching hospital for Palestinian Board Program, Islamic University, Al-Azhar University, faculty of health science and other related faculties (MOH, 2014*).*

1.7 Operational definitions:

Occupational Health:

The occupational health (OH**)** as defined by the WHO deals with all aspects of health and safety in the workplace and has a strong focus on primary prevention of hazards (WHO, 2000).

Occupational Safety:

Occupational Safety (OS) is defined as the health and wellbeing of people employed in a work environment (ILO, 2003).

Occupational Safety and Health (OSH):

Occupational Safety and Health (OHS) is commonly referred workplace health and safety (WHS) is a cross-disciplinary area concerned with protecting the safety, health and welfare of people certainly engaged in work or employment (ILO, 2003).

Occupational Safety and Health Standards (OSHS):

Are standards or regulations created to provide workers with a safe working environment and is an essential part of a new framework to cultivate good safety habits in all individuals at the workplace from top management to the last worker. It extraordinarily requires every person at the workplace to take reasonably practicable steps to ensure the safety and health of every workplace worker (MOM, 2006).

Safety management system:

Safety management system is the harmony of organizational systematic processes that are needed in order to ensure and develop patient safety. In which a practical identification of roles, tasks and responsibilities is made (Macchi, et al. 2011).

Safety training:

Safety training is defined as the knowledge of safety given to employees in order for them to work safely and with no danger to their wellbeing (Law, Chan & Pun, 2006).

Overall perception of safety:

This reflects the general perceptions about safety and includes 4 items about general safety.

Hospital:

Hospital is a place prepared to receive patients, to stay in it for more than one day with purpose of diagnosis and treatment, delivery, rehabilitation or nursing care (MOH, 2013).

Small Hospital:

A small hospital is a hospital that has up to 100 beds, which applies to many hospitals in the Gaza Strip (MOH, 2013).

Large Hospital:

A Large hospital is a hospital that has more than 100 beds; witch applies to the European Gaza Hospital, Al-Aqsa Hospital and Al-Nasr Pediatric Hospital (MOH, 2013).

Medical Compound (Complex):

Medical compounds are hospitals that include more than one specialized hospital, which applies to the Al-Shifa and the Nasser complexes in the Gaza Strip. (MOH, 2013).

Chapter 2

Literature review

For the purpose of making any meaningful and realistic conclusion on the data drawn from the study, it is important that a closer look is taken at similar works done on occupational health and safety assessment and review some of the literature relevant to the study, in order for comparison, confirmation and differences to be accounted for. Due to this, this chapter is meant to quite significantly contain the conceptual framework and review of various literatures considered to be relevant to the study.

2.1 Conceptual framework:

The proposed conceptual framework attempted to define the composition of the important variables of occupational safety at hospitals and meanwhile proposed its relationship with dependent variable. The proposed conceptual framework serves were available as the scope and focus of the current study.

Occupational safety is about workers attitudes, knowledge, training, practices, compliance and management commitment. On other hand we talk about working environment conditions related to the organization. As a hospital is a system that includes series of activities and actions in a constant coordination, involve a group of people, the culture of an organization is a set of values, ethics and attitudes according to which its members tend to think act and relate to each other. As well as the occupational safety becomes a very important issue at the hospitals to prevent and reduce the hazards not only to employees, but also to their families, patients and community at large, so it should be accessed through measuring some of its dimensions to sustain and build on the strong dimensions and promote and enhance the weak ones, taking in consideration the factors that affect the safety at the hospital.

The following paragraphs demonstrate the main including hospital related dimensions, working environment related dimensions and one staff related dimensions which may affect the overall occupational safety status and the employee's perceptions about safety.

A. Hospital related dimensions

- **Top management commitment**

It refers to the application of the hospital top management to the rules and regulations that reflects their persuasion with the safety requirements. It is one of the substantial roles of

building an effective occupational safety management system witch encourage the employees toward providing well safe practices and services. This includes: creating of clear written OS policy; providing technical, material resources and administrative efforts, working on an assessment for the work risks and work-related injuries effective medical record. In addition, establishing of job description of every job; employee's involvement in planning; follow-up the application of plans and programs of occupational safety; comply with OS laws and regulations and laws of compensation and insurance for workers in the event of exposure to accidents or work injuries.

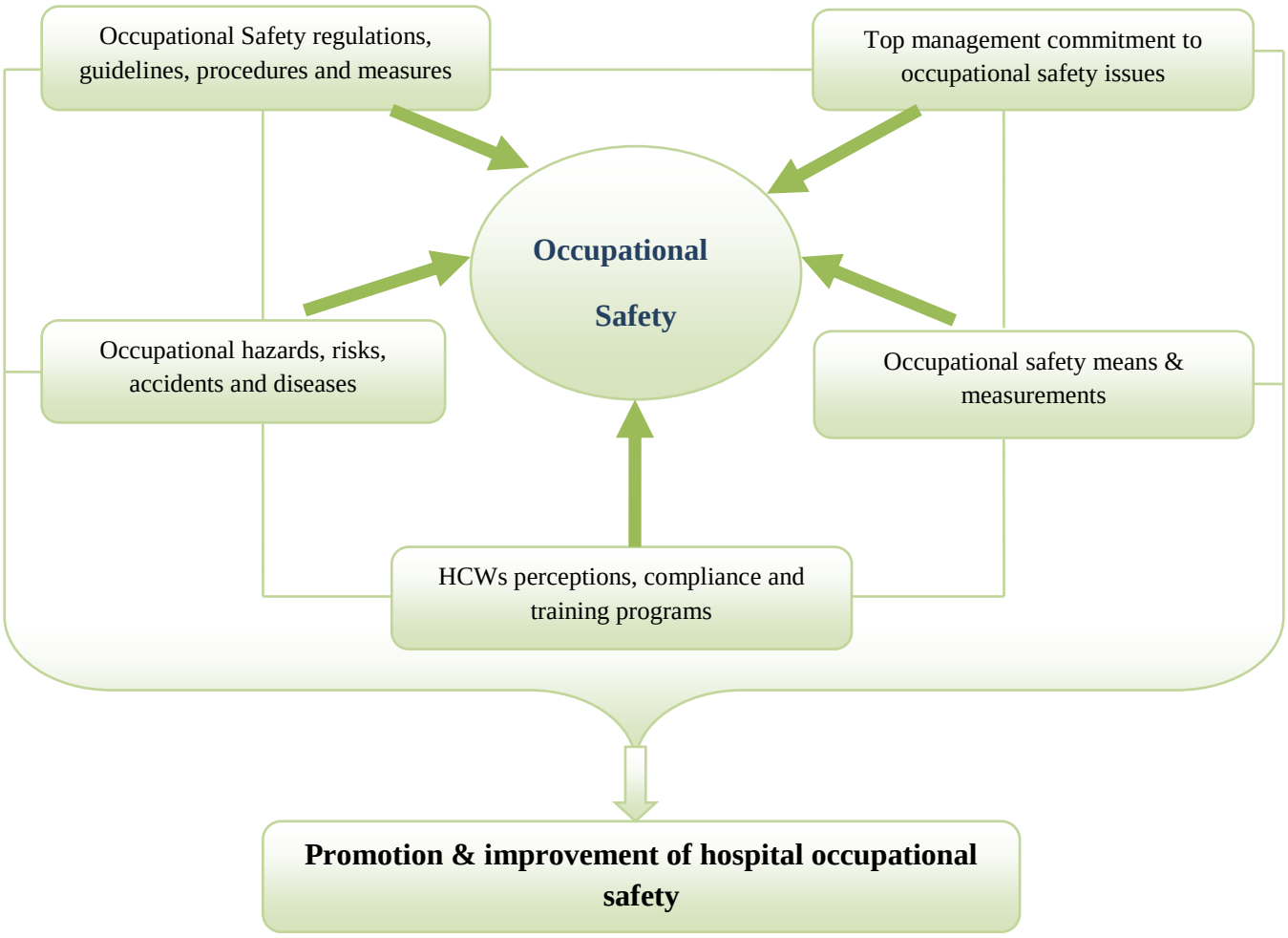

Figure (2.1) Conceptual Framework of Occupational Safety Assessment (Self-developed)

- **Occupational safety regulations:**

Are principles or rules (with or without the coercive power of law) employed in controlling, directing, or managing an activity, organization, or system. In law they are rules based on and meant to carry out a specific piece of legislation (such as for the protection of environment). Regulations are enforced usually by a regulatory agency formed or mandated to carry out the purpose or provisions of legislation. Also called regulatory requirement(Business Dictionary, 2016).

- **Occupational safety rules:**

Are authoritative statements of what to do or not to do in a specific situation, issued by an appropriate person or body. They clarify, demarcate, or interpret a law or policy. In addition, they are statements that establishes a principle or standard, and serves as a norm for guiding or mandating action or conduct (Business Dictionary, 2016).

- **Occupational safety measures:**

Occupational safety measures are activities and precautions taken to improve safety and reduce risk related to human health (Business Dictionary, 2016).

- **Occupational safety guidelines:**

Occupational safety guidelines are interpretive documents relating to specific sections of the act or the regulation which are intended to assist in the application and interpretation of these many requirements (Business Dictionary, 2016).

- **Occupational safety procedures:**

Are a fixed, step-by-step sequence of activities or course of action (with definite start and end points) that must be followed in the same order to correctly perform a task. Repetitive procedures are called routines (Business Dictionary, 2016).

B. Work environment related dimensions

- **Work environment equipment:**

This include availability of prevention tools and occupational safety measurements including: proper light, ventilation, heat, furniture, fire extinguishers, exit routes, elevators, alarm system, electrical fillings, radiation safety, safe medical devices, sterile tools and personal protective equipment. These preventive tools and methods reduce the work-related injuries and accidents and prevent the employees of associated risks and hazards.

- **Occupational safety risk factors:**

Is the chance or probability that a person will be harmed or experience an adverse health effect if exposed to a hazard. It may also apply to situations with property or equipment loss. These include: directly dealing with patients and visitors; using sharp tools and instruments; standing for long time;; handling heavy objects, dealing with a solid objects, fumes, gases, liquids, radiations and dusts, working in inadequate temperature and a very noisy environment and working in holidays for long hours. These risk factors leads to many hazards and work-related illnesses and diseases(Thomas, et al,. 2000).

- **Occupational hazards:**

Occupational hazard is considered as any source of potential damage, harm or adverse health effects on something or someone under certain conditions at work. Basically, a hazard can cause harm or adverse effects (to individuals as health effects or to organizations as property or equipment losses. Occupational hazards include risk of accident and of contracting occupational diseases (OSHA, 2013).

- **Occupational diseases:**

Occupational disease is any disease contracted primarily as a result of an exposure to risk factors arising from work activity. Work-related diseases" have multiple causes, where factors in the work environment may play a role, together with other risk factors, in the development of such diseases (EU-OSHA, 2007).

- **The factors of work-related hazards and diseases:**

Are related factors to which the work-related hazards and diseases among the employees are attributed such as: the lack of management commitment and support to occupational safety issues; the lack of occupational safety specialized effective department or committee; the lack of prevention tools and occupational safety measures; the lack of compliance to the occupational safety laws, rules and regulations; the scarcity of staff training courses on the use of the means of prevention and occupational safety procedures and the lack of knowledge among workers about means of prevention and occupational safety procedures.

C. **Staff related dimensions**

- **Employees compliance:**

Compliance is defined as something that refers to the extent to which health care workers follow the rules, regulations and recommendations of health care providers and occupational health hazards and risks prevention and control measures.

It includes: the use of personal protection equipment; follow the occupational safety rules, procedures and guidelines; use the prevention tools and methods; safely dispose medical wastes and safely wash and disinfect hands. This leads to the employee's protection and prevention from the work-related hazards and diseases.

- **Employees training:**

Safety training is defined as the knowledge of safety given to employees in order for them to work safely and with no danger to their wellbeing. In fact the information alone in the field of prevention and occupational safety are not enough to carry the workers to comply with it because the knowledge itself is rigid power and not the driving one. It cannot be converted into actions and practices unless they turned on motivation of psychological attitudes and creating safety culture, to make workers feel the importance of proper application (Law, Chan & Pun, 2006).

Characteristics affecting the perception of occupational safety

It refers to how the hospital employees recognize the safety of the introduced services. All of the previous dimensions will be affected by their perception, which means that variations will occur. So what seems good to one of the employees may seem acceptable or bad to another. It varied due to subcultures among the hospital staff, which mean different safety concerns. This dispersion occurs in the case of different background about the issue. Also, this variation affected by two main factors:

Hospital characteristics

It includes: top management commitment to occupational safety issues, occupational safety rules, guidelines and regulations availability and implementation, prevention tools and occupational safety means and measurements availability, hospital size and workplace department.

Staffs' working characteristics

It includes: age, marital status, weekly working hours, years of experience, profession category, daily work arrangement, sick leaves exhaustion and exposure to work risks and hazards.

2.2 The Occupational safety comprehensive and modern concept:

Occupational safety concept as stated by Qteishat et al., (2003) means maintaining key production elements as follows: human inside and outside the institution; raw and producing materials; equipment and production tools and surrounding environment of water, air and dust.

2.3Top 10 safety golden rules:

Foley, (2013) suggested a set of key criteria is calling the "Top 10 Golden Rules of Safety" as follows: The design and activation of the safety mechanism is automatic and will not interfere with normal operating procedures and processes; the device is intuitive and requires no additional steps for use compared with equivalent standard or conventional devices; the non-sterile contaminated, sharp will render safe prior to removal or exposure to the environment.

In addition to that activation of the safety mechanism does not require the healthcare worker to undertake any additional steps during normal process/protocols providing patient care; activation of the safety mechanism will not create additional occupational hazards (such as aerosolization, splatter, or exposure to blood or other potentially infectious materials).

Furthermore, activation of the safety mechanism does not cause additional discomfort or harm to the patient; the device will be ergonomically designed for comfort, allowing for automatic handed use during all stages of the patient procedure; the safer engineering control is in effect available in sizes and iterations appropriate for all areas of use relevant to the patient care needs; disposal of the safety device will not increase waste disposal volumes but should incorporate designs to reduce waste as well as the used safety device will enormously provide convenient disposal and mitigate any risk for reuse or re exposure of the non-sterile sharp.

He concluded that making the safety and health of healthcare personnel a priority will not only keep workers safe, but will also ultimately keep patients safe and afford them the best care possible. By advocating for a safer work environment, the likelihood of preventable injuries to both patients and staff will be obviously decreased. This culture of safety within a healthcare setting allowed personnel to perform their duties without fear of injury or incident, thus allowing patients to feel more at ease and care for (Foley, 2013).

2.4 Principles of occupational health and safety

Several definitions of occupational health and safety and occupational health services had been produced by professional bodies, international organizations such as World Health Organization (WHO), International Labor Organization (ILO) and national bodies and authorities. If one summarizes those definitions, occupational health is considered to be multidisciplinary activity aiming at protection and promotion of the health of workers by preventing and controlling occupational diseases and accidents and by eliminating occupational factors and conditions hazardous to health and safety at work; development and promotion of healthy and safe work, work environments and work organizations; enhancement of physical, mental and social well-being of workers and support for the development and maintenance of their working capacity, as well as professional and social development at work and **e**nablement of workers to conduct socially and economically productive lives and to contribute positively to sustainable development.

2.5 Occupational safety and health policy on national and international level:

According to International Labor Organization (ILO) guidelines on occupational safety and health management systems, the key strategy principles of international and national occupational health and safety policies are: Avoidance of hazards (primary prevention); safe technology; optimization of working conditions; integration of production and health and safety activities; government's responsibility, authority and competence in the development and control of working conditions; primary responsibility of the employer for health and safety at the workplace; recognition of employees' own interest in occupational health and safety; cooperation and collaboration on an equal basis by employers and workers; employees right to participate in decisions concerning one's own work; their right to know principle of transparency and continuous follow-up and development of occupational health and safety (ILO-OSH, 2001).

2.6 Occupational safety and health policy at organizational level:

According to ILO, (2001) guidelines on occupational safety and health management systems, the employer in consultation with workers and their representatives, should set out in writing an occupational safety and health policy, which should be specific to the organization and appropriate to its size and the nature of its activities; concise, clearly written, dated and made effective by the signature or endorsement of the employer or the

most senior accountable person in the organization; communicated and readily accessible to all persons at their place of work; reviewed for continuing suitability; and made available to relevant external interested parties, as appropriate.

In addition, the policy should include, as a minimum, the following key principles and objectives to which the organization is committed: protecting the safety and health of all members of the organization by preventing work-related injuries, ill health, diseases and incidents; complying with relevant OSH national laws and regulations, voluntary programs; collective agreements on OSH and other requirements to which the organization subscribes; ensuring that workers and their representatives are consulted and encouraged to participate actively in all elements of the OSH management system; and continually improving the performance of the OSH management system.

Furthermore, El Hamzoui, (2011) stated that the implementation of such principles genuinely requires appropriate legal provisions, administrative enforcement and service systems for occupational safety and health and occupational health services. Some national and international industries had adopted a strategy setting zero risk as an objective in the work environment. Though not totally achievable such a strategy had stimulated programs and actions for planning and designing the work environment and working practices according to the best available technology and principles and carrying out production according to good practices, operation and maintenance which had led to substantial reduction of hazardous exposures at work, elimination or decrease in occupational injuries and diseases, and saving of costs by reduction of disturbed production and costs of sickness. He concluded that such experiences certainly demonstrated that a safe and healthy work environment can be planned, constructed, organized and maintained if the best occupational health and safety standards are applied.

2.7 Importance of occupational safety and health:

The importance of occupational safety and health as stated by Abbas, (2003) stems from that it reduce labor costs as well as a safety work environment management avoids a lot of costs both physical and moral that includes the compensation to employees, their families, or the cost of downtime. Also, the occupational safety and health provide a healthy, low-risk work environment as well as the organization management was responsible for providing the appropriate work place to reduce the risks that lead to harm employees during their work. This responsibility has become increasingly important in light of

technological advances and the administration work to minimize the psychological effects resulting from occupational accidents and diseases. The accidents not only affecting the physical aspects of the work, but its implications extend to workers feelings within the organization as well as to the visitors. In addition it creates an appropriate labor system by providing employment systems through the provision of protective devices and equipment and the use of statutory medical records for any injuries, accidents and diseases. Moreover, it strengths the humanitarian relations between management and employees by creating a good reputation of the organization towards competitors as this reputation would eventually result in the polarization of efficient individuals and retained the best talents.

2.8 Achievement of occupational safety and health objectives:

Al Thiyab, (2006), and Abu Sheikha, (2010) suggested some ways to achieve occupational safety objectives through improving the physical working environment by improvements of the construction of lighting, sound and ventilation systems and proper temperature degrees; establishment of security and technical safety systems, including technical warning and extinguishing systems, as well as the means and tools of personal protection equipment; inspection and control relating to discovering professional errors and try to control and take the procedures and regulations necessary to address these errors. In addition to that, studies and research which must be carried out continuously to know the reasons for the occurrence of accidents and the effectiveness of safety systems, whether in technical, psychological or statistical studies.

Furthermore the training programs at all levels of the organization, focusing on new employees to strengthen their knowledge of safe work methods and their knowledge of the importance to safety means and procedures compliance to protect them from the hazards and occupational choice including the selection of the human element in order to obtain a safe workplace free from hazards with application of the rule "the right person in right place".

2.9 Occupational health and safety laws, regulations, guidelines and instructions:

2.9.1 ILO instructions and regulations:

The international labor organization (ILO) in its general conference No 155 in 1981, endorsed the convention of occupational safety and health.

Article No 4: states that each member shall in the light of national conditions and practice, and in consultation with the most representative organizations of employers and workers,

formulate, implement and periodically review a coherent national policy on occupational safety, occupational health and the working environment as well as the aim of the policy should prevent accidents and injuries linked with or occurring in the course of work by minimizing, so far as reasonably practicable the causes of hazards inherent in the working environment.

Article No 5: states that the policy should take into account the following main spheres of action so far as affecting occupational safety and health and the working environment including design, testing, choice, substitution, installation, arrangement, use and maintenance of the material elements or work (workplace, working environment, tools, machinery and equipment, chemical, physical and biological substances, agents and work processes); relationships between the material elements of work and the persons who carry out or supervise the work and the adoption of machinery, equipment, working time, organization of work and work processes to the physical and mental capacities of the workers; training, including necessary further training, qualifications and motivations of persons involved in one capacity or another in achievement of adequate levels of safety and health; communication and co-operation at the levels of the working groups and undertaking all other a propitiate levels including the national level and the protection of the workers and their representatives from disciplinary measures as a result of actions properly taken by them in conformity with the policy referred to article 4 of this convention.

2.9.2 International occupational safety and health acts:

One of the most important OSH acts is the OSHA act of the year 1970. It applies to most employers from manufacturing and constructions to retail and service organizations. There are many OSHA requirements to which employers must adhere: fire protection, electricity, sanitation, air quality, machine use, maintenance, repair, posting of notices and warnings, reporting of accidents and illnesses, maintaining written compliance programs and employee training.

2.9.3 Occupational safety and health standards (OSHS):

According to the Occupational Safety and Health Administration (OSHA), the occupational safety and health standard means a standard which required conditions, or the adoption of use of one or more practices, means, methods, operations, or processes,

reasonably necessary or appropriate to provide safe or healthful employment and places of employment (OSHA, 2004).

The aim of the occupational and safety health standards objectives as stated by Ali, (2001) are to improve working environment and working conditions in order to ensure and maintain the working capacity of employees as well as to prevent occupational accidents and diseases and to eliminate other hazards to the physical and mental health from work and working environment.

The OSHA was created within the United States of America department of labor to: encourage employees and employers to reduce workplace hazards to implement new or improve existing safety and health programs; provide for research in OSH to develop innovative ways to dealing with OSH problems; establish separate but dependent responsibilities and rights for employers and employees for the achievement of better safety and health conditions; maintain a reporting and record keeping system to monitor job related injuries and illnesses; establish training programs to increase the number and competence of occupational safety and health personnel; develop mandatory job safety and health standards and enforce them effectively and provide for development, analysis, evaluation and approval of OSH programs (Friend, 2007).

2.9.4 National occupational safety and health acts:

A. The Palestinian Labor Law No 7 of the year 2000 in chapter 5, section 4 regarding Occupational Safety and Health

Article (90): states that the regulations governing the occupational safety and health and work environment should in particular include: personal protection and prevention methods for workers from the work hazards and occupational diseases; the necessary health conditions that should be present at the workplaces; first medical aid means provided for workers at the installation and the periodical medical examination of workers.

Article (91): states that according to the provisions of this Law and the regulations issued according to it, the installation should issue the instructions on occupational safety and health in addition to the list of penalties related to such instructions. Both the instructions and the list shall be approved by the Ministry. Such instructions will be posted on visible locations at the installation.

Article (92): states that no installation will make the worker bear any expenditures or deductions from his/her wage in return for the provision of the conditions related to occupational safety and health.

B. The Palestinian Public Health Law No. (20) for the year (2004) chapter five articles (32 and 34):

Article (32): states that the Ministry will coordinate with the relevant bodies in creating the conditions and monitoring techniques that would ensure safety and occupational health in the working places.

Article (34): states that the Ministry in cooperation with the competent bodies is responsible for determination of the conditions that should be available in the workers who work in crafts and industries that might affect their health; determination of the types of preventive and regular medical tests needed for the workers in the crafts and industries mentioned above and preparation of the occupational diseases list.

C. Palestinian Occupational safety and health standards:

In addition, the Palestinian Ministry of Manpower (PMOM) mentioned standards or regulations created to provide workers with a safe working environment and are an essential part of a new framework to cultivate good safety habits in all individuals at the workplace from top management to the last worker. These standards require every person at the workplace to take reasonably practicable steps to ensure the safety and health of every workplace worker (MOM, 2006).

2.10 Occupational Safety and Health responsible authorities:

2.10.1 International bodies:

A. The International Labor Organization (ILO):

Tahoon, (2006) stated that its responsibilities are: to prepare agreements, legislation and recommendations at the international level; to provide technical assistance to governments and rolled experts, equipment and appliances; to providing assistance to the National Safety Organizations in different countries and management of international centers concerned with safety and occupational health.

B. World Health Organization (WHO)

Its responsibilities are activity in the issuance of the important publications; establishing standards and specifications; necessary decision-making, which is the virtue of the recommendations, which guided various countries and supply of different countries of technical assistance such as equipment, missions and experts (WHO, 2007).

2.10.2 National authorities: **State responsibility**:

Arabiat & Moneer, (2003) stated that play a key role in achieving occupational safety and health through the development of laws, legislation and regulations relating to health and safety, and work on the implementation and development and coordination between the various ministries responsible for the applications and legislation of occupational safety

A. Ministry of Labor (MOL):

Its tasks are the enforcement of the legislations stipulated in the labor law; inspection of different working conditions; to verify the occupational safety applications; establishment of training centers and providing them with training programs and coordination with the other ministries and organizations

B. Ministry of Housing:

Its tasks are issuing ministerial decisions to implement the necessary facilities of engineering requirements and developing the necessary standards to ensure the work from different environmental hazards

C. Environment Quality Authority (EQA) :

Contributes in the general safety from the environment pollution and to choose medical facilities sites away from the environmental hazards

D. Ministry of Interior- Civil Defense (CD):

Its tasks are to provide guidance, rescue and first aid; to hold training courses for workers in ways to avoid work environment hazards; monitoring of private agencies for the application of safety standards in medical facilities; to grant the necessary licenses in accordance with the safe standards and to examine the safety and protective equipment used in hospitals.

E. Ministry of Health (MOH):

It is responsible for the health care of the workers in the hospitals; monitoring and control of safety measures in the hospitals; providing training programs for workers in the hospitals and establishment and development of occupational health and Safety Policy and laws in the hospitals (MOH, 2005)

F. Independent authorities: Workers Association:

Have amongst their responsibilities: preserving the health and life workers rights; examination of workplaces to ensure their suitability for workers and auditing and reviewing of labor laws and legislations.

2.11 Hospital interior bodies responsibilities:

According to Canadian center for occupational health and safety basic OHS program elements, (2005) health and safety is the joint responsibility of management and workers. Management is accountable for non-compliance to health and safety legislation. Responsibility may be defined as an individual's obligation to carry out assigned duties. Authority implies the right to make decisions and the power to direct others. Responsibility and authority can be delegated to subordinates, giving them the right to act for superiors. It is important to note that, while some responsibilities can be delegated, the superior remains accountable for seeing that they are carried out. Individual responsibilities apply to every employee in the workplace, including the Chief Executive Officer. All employees will then know exactly what is expected of each individual in health and safety terms

2.11.1 Management responsibilities:

The hospital management is responsible for providing a safe and healthful workplace; establishing and maintaining a health and safety program; ensuring workers are trained or certified, as required; reporting accidents/incidents and cases of occupational disease to the appropriate authority; providing medical and first aid facilities; ensuring personal protective equipment is available; providing workers with health and safety information; supporting supervisors in their health and safety activities as well as evaluating health and safety performance of supervisors.

2.11.2 Workers responsibilities:

Workers are responsible for using personal protection and safety equipment as required by

the employer; following safe work procedures; knowing and complying with all regulations; reporting any injury or illness immediately; reporting unsafe acts and unsafe conditions and participating in joint health and safety committees or as the representative.

2.11.3 Occupational safety and health unit:

Nseirat, (2008) and Tahoon, (2006) stated that the occupational safety and health unit responsibilities are cooperate with specialists and experts in the design and implementation of the construction in the hospital; develop an annual plan for occupational health and safety programs; develop OSH training programs for workers; periodic inspections of all work places; accidents review, recording and reporting. In addition, prepare reports in case of the emergence of any diseases in collaboration with the top management of the hospital; follow-up on and provide the fire protection means and their validity; secure work environment before doing any danger manipulation. Furthermore, make sure of the workers commitment to use the means of personal protection at work; spread awareness and educate workers about occupational safety through signs, leaflets and brochures and precede local, regional and international occupational safety research reports and keep with its development to keep it updated.

2.10.4 Safety committees:

Regulations relating to safety representatives include obligations regarding the establishment and operation of safety committees at the workplace. The overall objective of a safety committee is the promotion of co-operation between employers and employees in investigating, developing and carrying out measures to ensure the health and safety of the employees at work.

Cole, (2002) identifies key functions of safety committees. These include studying trends in accidents with the view to making suggestions for corrective actions; examining safety reports and making proposals for avoiding accidents; examining and discussing reports from safety representatives; making proposals for new or revised safety procedures; acting as a link between the organization and the enforcement agency and monitoring and evaluating the organization's safety policies, and making proposals for changes, it necessary.

Michael, (2006) also states that employees frequently participate in safety planning through safety committees, often composed of workers from a variety of levels and departments. A safety committee generally meets at regular scheduled times and has specific

responsibilities for conducting safety reviews, and makes recommendations for changes necessary to avoid future accidents.

2.11.5 Occupational Health and Safety Officer:

Occupational health and safety officer coordinated health and safety systems in an organization. He identifies hazards, assesses risks to health and safety; puts appropriate safety controls in place and provides advice about accident prevention and occupational health to management and employees; promote occupational health and safety within an organization and develop safer and healthier ways of working conditions; ensure that workplaces conform to organizational procedures and safety standards; work with engineers and other professionals to ensure the safety of worksites and work practices. In addition he must ensure personal protective equipment (such as hearing protection, dust masks, safety glasses, and footwear), is being used in workplaces according to regulations; ensure dangerous materials are correctly stored; identify and test work areas for potential accident and health hazards, such as toxic fumes and explosive gas-air mixtures, and implement appropriate control measures; ensure an organization is aware of, and complies with all legislation relating to its duty of care, workplace activities and the use of its plant, equipment and substances record and report hazards, accidents, injuries and health issues within the workplace. Furthermore he assist with the investigation of accidents and unsafe working conditions and study possible causes and recommend remedial action; conduct training sessions for management, supervisors and workers on health and safety practices and legislation Coordinate emergency procedures, firefighting and first aid crews; communicate frequently with management to report on the status of occupational health and safety programs and develop occupational health and safety systems, including policies, procedures and manuals (Dodson, 2015).

2.12 Occupational Health and Safety Management System (OHSMS):

El-Hamzoui, (2011) stated that an Occupational Health and safety Management system is a framework that allows an organization to consistently identify and control its health and safety risks, reduce the potential for accidents, help achieve compliance with health and safety legislation and continually improve its performance.

Furthermore, according to OSHA roadmap for hospitals, (2013) a safety and health management system is a proven, systematic approach used by employers and employees, working together to finding and correcting workplace hazards before injuries or illnesses occurs. It provides an overarching framework for planning, implementing, evaluating, and

improving all of a hospital's workplace safety and health management efforts. It integrates and strengthens, rather than replaces, hazard-specific programs such as those covering blood borne pathogen protection, safe patient handling, and workplace violence prevention. The safety and health management system encompasses all workplace hazards, not just those covered by OSHA standards.

The foundation of all safety and health management systems is the Plan-Do-Check-Act (PDCA) cycle, popularized by W. Edwards Deming and used by many employers to manage their other business processes, such as product quality and environmental protection. All management systems are built on these fundamental concepts of planning, understanding the processes at your workplace, making adjustments where necessary, and continually evaluating outcomes. A safety and health management system incorporates basic PDCA methods within a broader set of core elements.

2.12.1 Core elements of effective occupational health and safety management:

The core elements of effective occupational health and safety management are the following:

- Management leadership: The managers at all levels of the organization demonstrate their commitment to improved safety and health, communicate their commitment, document performance, make safety and health a top priority, establish goals and objectives, provide adequate resources and support.
- Employee's participation: The employees must be involved in all aspects of the safety and health management system such as setting goals, identifying and reporting hazards, investigating incidents, and tracking progress. They are encouraged to communicate openly with management and report safety and health concerns. Barriers to participation (e.g., language, lack of information, or disincentives) are removed.
- Hazard identification and assessment: The procedures are put in place to continually identify workplace hazards and evaluate risks. An initial assessment of existing hazards and control measures is followed by periodic reassessments to identify new hazards and monitor the effectiveness of prevention and control measures.
- Hazard prevention and control: The processes, procedures, and programs are created and implemented to eliminate or control workplace hazards and achieve safety and health goals and objectives

- Education and training: All employees are provided education or training to carry out their responsibilities under the safety and health management system. In addition they are trained to recognize workplace hazards and trained in the corresponding control measures.
- System evaluation and improvement: The processes are established to monitor safety and health management system performance, verify implementation, identify deficiencies and opportunities for improvement, and take necessary actions to improve the safety and health management system and overall safety and health performance (OSHA, 2013).

2.12.2 Advantages of implementing an occupational health and safety management system:

El-Hamzoui, (2011) stated the following advantages of OHSMS:

- A safer workplace: An occupational and health safety management system enables the organization to identify hazards, assess risks and place the necessary risk control measures in place to prevent accidents.
- Moral: Implementing an Occupational Health and Safety Management system shows a clear commitment to the safety of the organization staff and can contribute to a more motivated, efficient and productive workforce.
- Reduced costs: Fewer accidents mean less expensive downtime for any organization. Besides the Occupational Health and Safety Management system improves the insurance liability ruling
- Training: An Occupational Health and Safety Management system highlights whether or not the employees in any organization are competent for the task they are performing, which impacts in training and teamwork.
- Monitoring: The regular assessment process will help in continually monitor and improve the Health and Safety performance
- Integration**:** The safety management system can be easily integrated with other management systems**.**
- Stakeholders' confidence**:** An independently assessed Safety management system tells to the organization stakeholders that the organization itself has met a number of legal and regulatory requirements, giving stokeholds confidence in the organization (El-Hamzoui, 2011).

2.13 Top management commitment to occupational safety issues:

Mearns et al. (2003) noted some common themes of safety management practices: management commitment to safety; safety communication; health and safety objectives;

training needs; rewarding performance and worker involvement. They also significantly maintained the associations between safety management, safety climate, and safety culture. Safety climate is considered to be the precise indicator of overall safety culture while safety management practices display the safety culture of top management and as a result, good safety management practices are reflected in enhanced safety climate of all employees. The terms "culture" and "climate" have been used interchangeably in the literature to reveal employees' attitudes towards safety (Glendon & Stanton, 2000; HSE, 2002). HSE, (2002) defined safety climate as the attitudes in relation to safety within an organization. Hale, (1997) described safety culture as "the attitudes, beliefs, and perceptions shared by natural groups as defining norms and values, which determine how they react in relation to risks and risk control systems".

Besides leadership style, Marsh et al. (1995) noted that management commitment plays a vital role in all aspects of safety intervention. Management commitment to safety indicates the extent to which the organization's top management demonstrates positive and supportive safety attitudes towards their employees' safety.

Salon, (2001) stated that effective safety management requires an organizational commitment to safe working conditions. But more importantly, well designed and managed safety programs can pay dividends for associated costs such as worker's compensation and possible fines. Furthermore, accidents and other safety concerns usually decline as a result of management efforts emphasizing safety (Salon, 2001). Robert and John, (2004) stated that at the heart of safety management is an organizational commitment to a comprehensive safety effort. This effort should be coordinated from the top level of management to include all members of the organization. It should also be reflected in managerial actions.

2.14 Administrative procedures to improve the occupational safety level:

Al Rosan, et al, (2009) suggested the following administrative procedures to improve the occupational safety level. These procedures include providing a specialized staff of occupational safety; monitor the implementation of safety instructions and reward

employees and supervisors who are committed to safety procedures and application of security rules; provide workshops and training courses on occupational safety; install signboards and warning shots in the various work sites; do periodic rounds to make sure that employees comply with occupational safety procedures and rules; follow-up work injuries in various locations and preparation of periodic reports; investigation of work-related injuries in various locations to determine their causes and limit their incidence and provide safety equipment and tools.

2.15 Basic occupational health services (BOHS):

Rantanen, (2005) stated that the Basic Occupational Health Services (BOHS) are an application of the primary health care principles in the occupational health sector. The BOHS seek to provide occupational health services for all working people in the world regardless of mode of employment, size of workplace or geographic location, that is, according to the principle of universal services provision. These services are most needed in countries and sectors which do not have services at all of which are seriously underserved. It lays stress on the importance of a national strategy and plan of action to incorporate occupational health in all policies.

The concept of BOHS has been developed jointly by the (WHO), (ILO), and International Commission on Occupational Health (ICOH) and has its roots in the 'Alma Ata' declaration (1978) by the WHO. The BOHS principles were first discussed at the WHO/ILO Joint Committee of Occupational Health in 2003. The BOHS has become a central piece of global occupational health services development plans of the WHO and ILO. The WHO, with its collaborating centers in occupational health, the ILO, ICOH and other international organizations, work for the BOHS. The BOHS aim at protection of health at work; promotion of health, wellbeing, work ability and prevention of occupational diseases and accidents.

Activities of BOHS are surveillance of work environment and risk assessment; (b) health surveillance; advice on preventive and control measures; health education, health promotion and promotion of work ability; maintaining preparedness for first aid and participation in emergency preparedness and diagnosis of occupational diseases and record keeping (Rantanen, 2005).

According to Encyclopedia Britannica. (2009) the actual occupational health services are essentially preventive in nature and summarized as follows:

- Job placement**:** People with certain preexisting medical conditions may be at a disadvantage in some jobs. A pre-employment health questionnaire or medical examination can be of great value in such cases by determining job unsuitability before training time and expense have been incurred. Job suitability may also need to be regularly monitored in order to assure employee health and ability.
- Safety training**:** An occupational health service has a responsibility to keep all employees informed about hazards in the workplace. The measures taken to protect employee health should be thoroughly explained so that workers understand the necessity of complying with such unpleasant restrictions as the wearing of protective clothing and face masks. First aid facilities should be organized and employees instructed about first aid procedures in case of accidental injuries or other emergencies.
- Supervision of high-risk groups: Exposure levels considered safe for a young male worker may be hazardous for a pregnant woman (the fetus, especially during the first three months of development, is particularly sensitive to environmental toxic agents). Pregnant women, as well as such other vulnerable groups as the very young, the elderly, and the disabled, therefore require appropriate medical surveillance and advice about specific precautionary measures they can take.
- Control of recognized hazards: A complex system of environmental and biological monitoring has been developed for the control of known hazards at work. Occupational health practice is concerned with monitoring the concentration of toxic substances in the environment, determining safe exposure levels, suggesting procedures to limit worker exposure, and monitoring workers for signs of overexposure.
- Identification of unrecognized hazards**:** Occupational health services can play a major role in the detection of new health hazards of all types. Clinical observation and study may reveal a causal relationship between patterns of sickness or mortality in groups of workers and their occupational exposure.
- Treatment: Quick, on-site treatment of work injuries and poisonings can prevent complications and aid recovery. Such treatment can also be economically beneficial by saving traveling and waiting time. Furthermore, physicians and nurses who are unfamiliar with their patients' working conditions may keep workers with minor

injuries away from work longer than necessary. An occupational treatment service offers opportunities for specialized counseling and health education.

- General Health education and surveillance**:** Occupational health services may have to provide general medical care for workers and their families in developing countries with inadequate community health services. Even when general health care is provided elsewhere, an occupational health service can offer an effective and often economically advantageous program of health education and counseling. By advising employees on such topics as smoking, alcohol or drug abuse, exercise, and diet, the occupational health service can improve worker health and efficiency and reduce illness and absenteeism.

2.16 Maintaining a healthy safety environment:

Robert, & John, (2004) stated that employers can prevent some accidents by having machines, equipment and work areas so that workers who perform potentially dangerous jobs cannot injure themselves or others; providing safety equipment and guards on machinery; installing emergency switches, installing adequate ventilation, installing safety rails, keeping aisles clear, lighting, heating and air conditioning can all help make work environment safer and designing jobs properly requires consideration of physical setting of a job. The way the work space surrounding a job is utilized can influence the worker's performance of the job itself. Several factors that affect safety have been identified; including size of work area, kinds of materials used, sensory conditions, distance between work areas, and interference from noise and traffic flow. As well as designing safety policies and rules and disciplining violators are important components of safety efforts. Frequently reinforcing the need for safe behavior and supplying feedback on positive safety practices also are effective in improving worker safety. Such efforts must involve employees, supervisors and managers.

2.17 Occupational hazards, accidents, injuries and diseases:

According to AL Aqaila, (2003) the workers at the hospitals are divided into two groups:

A. First group is medical sector workers, divided into: Physicians and their assistants, nurses and paramedics
B. Second group is non-medical sectors workers, divided into: engineering, regulatory, administrative and public services.

Furthermore, he stated that the hospitals are considered one of the most dangerous workplaces on the staff, patients and visitors and contains many types of hazards: physical, biological, chemical and psychological. Some of these hazards may lead to death, but can seriously preventable by following the occupational safety rules and procedures at all levels and categories, providing special occupational safety committees and monitoring plans for the implementation of these rules and requirements to ensure the achievement of occupational safety. In addition, he identified that these risks and hazards leads to occupational related diseases and not literally a professional occupational disease but they can be named occupational disease arbitrary. In general it can be differentiated between occupational diseases and work-related injuries from their origin and occurrence and their legal and medical destination, but the situation is different in the medical sector because of an anonymous accident and unknown time and essential medical and legal work injury destination.

Occupational disease:

Occupational disease is any illness associated with a particular occupation or industry. Such diseases result from a variety of biological, chemical, physical, and psychological factors that are present in the work environment or are otherwise encountered in the course of employment. Occupational medicine is concerned with the effect of all kinds of work on health and the effect of health on a worker's ability and efficiency. Occupational diseases are essentially preventable and can be ascribed to faulty working conditions. The control of occupational health hazards decreases the incidence of work-related diseases and accidents and improves the health and morale of the work force, leading to decreased absenteeism and increased worker efficiency. In most cases the moral and economic benefits far outweigh the costs of eliminating occupational hazards (Encyclopedia Britannica, 2009).

The ten leading work-related diseases and injuries were proposed by the NIOSH to be controlled. These diseases and injuries are occupational lung diseases, musculoskeletal injuries, occupational cancers (other than lung), amputations, fractures, eye loss, lacerations, and traumatic deaths, cardiovascular diseases, disorders of reproduction, neurotoxic disorders, noise induced loss of hearing, dermatologic conditions, and psychological disorders (NIOSH, 1999).

Occupational Hazard:

There are many definitions for hazard but the more common definition when talking about workplace health and safety is: A hazard is any source of potential damage, harm or adverse health effects on something or someone under certain conditions at work.

Basically, a hazard can cause harm or adverse effects (to individuals as health effects or to organizations as property or equipment losses (OSHA, 2013).

According to the European Union's OSHA, once the hazard is removed or eliminated, the effects may be reversible or irreversible. For example, a hazard may cause an injury that can heal completely (reversible) or result in an untreatable disease (irreversible). (EU-OSHA, 2007).

Furthermore, according to the European Agency for Safety and Health at Work (2009), the main risk factors and health related problems in the healthcare sector include the following:

- Musculoskeletal loads – poor working postures, heavy loads.
- Biological agents – micro-organisms, viruses such as HIV and hepatitis B, C, contaminated blood.
- Chemical substances – including disinfectants, anesthetic gases and antibiotics. They may be harmful to the skin, to the respiratory system or may be carcinogenic.
- Radiological hazards.
- Changing shifts, work rhythms and night work.
- Violence from members of the public.
- Other factors contributing to stress – traumatic situations and factors, the organization of work and relations with colleagues.
- Accidents at work – falls, cuts, needle punctures, electric shocks etc.

2.18 Injury and Illness Prevention Programs:

According to the OSHA 300 log: an injury and illness prevention program is a proactive process to help employers find and fix workplace hazards before workers are hurt. Such programs have been proven to help employers and society reduce the personal, financial and societal costs that injuries, illnesses and fatalities impose. Research demonstrates that such programs are effective, at both the establishment and corporate levels, in transforming workplace culture; leading to reductions in injuries, illnesses and fatalities; lowering workers' compensation and other costs; improving morale and communication; enhancing image and reputation; and improving processes, products and services.
A basic prerequisite for preventing injuries and illnesses is knowledge of the types, location, and underlying reasons for their occurrence in the workplace. A readily available

resource to assist in determining this information is the employer's OSHA 300 log. Most successful injury and illness prevention programs include a similar set of commonsense basic elements: management leadership; worker participation; hazard identification and assessment; hazard prevention and control; education and training and program evaluation and improvement. Each element is important in ensuring the success of the overall program, and the elements are interrelated and interdependent. Since every business is different, the elements must be scaled and adapted to meet the needs of the employer's organization.

Despite the value to employers and workers in terms of injuries prevented and dollars saved, many healthcare institutions have not yet adopted injury and illness prevention programs that unite patient and worker safety. Based on the positive experience of employers with existing programs, OSHA quite immensely believes that injury and illness prevention programs provide the foundation for breakthrough changes in the way employers identify and control hazards, leading to significantly improved overall workplace health and safety environments; improved patient safety; and fewer worker injuries, illnesses and fatalities (OSHA, 2009).

2.19 Essential Protection Methods at the hospitals:

Al Aqaila, (2003) suggested the following essential methods for the protection from hazards at hospitals, these include primary medical examination; periodic medical examination; follow PPE methods through general and personal hygiene by the use of personal protection means and training of employees on safe equipment machines use; implementation of workplace engineering safety; ensure continuous educational methods for the occupational safety instructions application and give workers the necessary preventive vaccines and serums gainful immunity.

2.20 Promotion of occupational safety and employees compliance and commitment:

Byars, & Rue, (2008) suggest the following as things which can be done to thoroughly promote safety and health of the organization. These include making work interesting as well as attempts to make the job interesting are usually quite successful if adding responsibility, challenge, and other similar factors that increase employees' satisfaction. Meanwhile, uninteresting work often leads to boredom, fatigue and stress; establishing a safety committee composed of operative employees and representatives of

management: The safety committee provides means of getting employees directly involved in the operation of the safety programs; feature employees' safety contests by giving prizes to the work groups or employees having the best safety record for a given time period. Contests can also be held to test safety knowledge. Prizes can be awarded periodically to employees who pretty fairly submit good accident prevention ideas; publicize safety statistics through monthly accidents reports should be unequivocally posted. Ideas how accidents can be avoided should be solicited; use bulletins boards throughout the organization as well as pictures, sketches, and cartoons can be effective; encourage employees including supervisors and managers to have high expectations for safety and periodically hold safety training programs and meetings ensuring employees attendance and participation in these meetings as players or instructors roles.

Michael (2006) stated that to encourage employees to work safely, many organizations have used safety contests and have given employees incentives for safe work behavior. Jewelers, clocks, watches and even vacation trips have been given as rewards for good safety records. Unfortunately, some evidence indicates that incentives tend to reinforce understanding and "creative" classifying of accidents. This concern IS about safety incentives that employees and managers do not report accidents and injuries so that they may collect the incentive rewards.

Cacio, (1992) emphasized that, beyond mere compliance, however, companies have a number of options regarding the degree to which they invest in employee safety and health. A motivational poster program e.g. ("think safety") is a token effort that requires minimal expenses. Creation of a safety committee to encourage active employee complaints is more expensive. The highest-cost option immensely includes regular safety training.

Gershon et al., (2000) stated that senior management support for safety programs, absence of workplace barriers to safe work practices, and cleanliness/orderliness of the work site were significantly related to compliance. In addition, both senior management support for safety programs and frequent safety-related feedback/training were significantly related to workplace exposure incidents. Thus the most significant finding in terms of enhancing compliance and reducing exposure incidents was the importance of the perception that senior management was supportive safety program.

According to the Center for Disease Control and Prevention's (CDC) several studies have found organizational factors to be the most significant predictor of safe work behaviors. Studies have shown compliance with standard precautions was increased when workers felt

that their institution had a strong commitment to safety and when institutions targeted interventions at improving organizational support for employee health and safety. Also, safety culture has an important influence on the implementation of training skills and knowledge.

The lack of a safety culture as a contributing factor to HCWs noncompliance with recommended infection control guidance is not a newly recognized problem. The Centers for Disease Control and Prevention's Healthcare Infection Control Practices Advisory Committee has noted that "several hospital-based studies have linked measures of safety culture with both employee adherence to safe practices and reduced exposures to blood and body fluids."[2]They noted that organizational characteristics, including safety culture, influence healthcare personnel adherence to recommended infection control practices and, therefore, are in effect important factors in preventing transmission of infectious agents.

2.21 Occupational safety training:

Training is considered as a systematic development of skills, knowledge, and behavior that employees need to perform their jobs or improve their performance. It is a fundamental and effective instrument in successful achievement of organization‘s goals (Konings and Vanormelingen, 2009). It is an investment in the human resource not a cost. Moreover, it enhances the capabilities of employees in a very effective way by motivating them and improves their growth and their quality of work (Khanfar, 2011). Training is considered one of the most important motivators. Therefore, it has a positive effect on capability, productivity and performance of the employees.

To make benefit from training, the organization needs to determine specific training needs, select appropriate training methods, and evaluate training process (Williams, 2000). Further, training is a key element of improved organizational performance and considered as a major influence on the organizations success (Shaheen et al., 2013). A basic operation in the work of the manager is to develop people and to direct, encourage and train subordinates. Therefore, it should be an integrated part of the organizational strategy.

In Palestinian context, Hamad (2011) described the provided training in MOH maternities as frameless, supplier-driven rather than demand-based, with little follow up, whereas on-the-job training is either lacking or not well structured in most facilities. He suggested that the implemented training programs had failed to improve the quality of services and to

motivate employees. Additionally, most of the facilities do not have clear training system, national training database, or structured programs for investment in human resources (Hamad, 2011). This was supported by the findings of Radwan (2012) who revealed that training in the MOH is limited, not effective and not based on the actual needs. He recommended the importance of establishing an effective training strategy to build the capabilities of the MOH personnel. On the other hand, Shalabi, (2009) showed that the MOH is far away from implementing the learning organization dimensions. Hamada, (2014) in his study concluded that training is not provided adequately on patient safety despite its great values.

Safety training and safety policy are essential determinants to enhance safety performance. Safety training is defined as the knowledge of safety given to employees in order for them to work safely and with no danger to their wellbeing (Law, Chan & Pun, 2006).
Lin and Mills (2001) found that clear policy statements and safety training played an important role in reducing accident rates. Earlier studies discovered the link between safety training and increased safety performance (Huang et al., 2006). Consequently, effective training assists workers to have a sense of belonging and thus, is more accountable for safety in their workplace. In addition, a company objective and communication of the objective to all workers is the crucial aspect of effective health and safety management as lack of communication may hinder employee involvement (Vassie & Lucas, 2001).
Robson, et al., (2012) state that training is regarded as an important component of occupational health and safety (OHS) programs and refers to planned efforts to facilitate the learning of OHS specific competencies. Typically consists of instruction in hazard recognition and control, safe work practices, proper use of PPE and emergency procedures and preventive actions. It also guides workers on where to find additional information about potential hazards, empower workers and managers to become active in making their work and positively affects workers practices.

Goetsh, (2008) stated that considering regulations and legislation of the essential issues, especially those relating to security and occupational safety rules, any organization cannot achieve the success without their implementation. In the other hand, these rules and measures cannot be successful unless employees get training on safe use (Hanafi, 2002), as well as creating motivation, awareness and education of them. These rules and regulations should be summarized in concise phrases written on board or wall posters, or posted in a photo booklet or on leaflets about how to use the tools, equipment and machines,

identification of risky areas, causes of fires and infection, first aid services and warning signals.

Dell, & Wayls, (2002) stated that in fact the information alone in the field of prevention and occupational safety are not enough to carry the workers to comply with it because the knowledge itself is rigid power and not the driving one. It cannot be converted into actions and practices unless they turned on motivation of psychological attitudes and creating safety culture, to make workers feel the importance of proper application. For this purpose they suggested several ways including: (a) lectures; (b) printed leaflets; (c) punishment which includes punitive ways to impose patterns of required behavior and (d) discipline includes corrective and remedial operations to help the workers to change their behavior and improve performance.

Chapter 3

Methodology

This chapter illustrates the methodology used in conducting this study. It includes the study's design and its population domain, period and place. It does also include the sample size, sampling method. It also takes into consideration the ethical and administrative aspects of the study. Further, the data collection methods and instruments are illustrated, in addition to the measures followed to increase scientific rigor, data processing and analysis and finally the limitations of the study.

3.1 Study design

The study is a descriptive, analytical and a cross-sectional one with a triangulated design (quantitative and qualitative). A cross-sectional design was selected as it was judged to be the most appropriate method to fulfill the aim of the study in a limited time. The researcher used three data collection tools to cover the research topic from different perspectives. This enriched the digging for realities and strengthened the scientific rigor of the findings. At first, a self-developed questionnaire was used, which represents one of the most common types of quantitative research. As well, an international observational checklist, according to OSHA standards, was used as a second tool. The third tool was the key informant interviews as a qualitative method.

3.2 Study population

The study was carried out on two population groups, the first population group consisted of all healthcare workers working at Al-Shifa Medical Complex; regardless of their title and position within the study period. The total number of target population which includes all employees working at Al-Shifa Medical Complex was 2037 according to The Staff Affairs Department (Annex 3). The second population group consisted of five key informants; nursing director, administrative director, staff doctor, infection control and quality development officer and maintenance safety officer who represent the perception, opinions and concerns regarding occupational safety status.

3.3 Study Setting

The study was conducted at Al-Shifa Medical Complex which is the biggest governmental

public hospital in Gaza Strip provided secondary, tertiary healthcare services and considered as a referral hospital for specialized healthcare services.

3.4 Study Period

The study was started immediately after getting the university's academic approval of the proposal and after obtaining the ethical approval from the Helsinki committee in August of 2015. Data collection tools were prepared in October 2015 while official MOH directorates were formally contacted to obtain their administrative approvals to start the study. The pilot study was conducted in December 2015. Data collection activities (quantitative part) started till January 2016. Data entry, data cleaning, and finally data analysis were being conducted till the mid of March 2016.

The OSHA observational checklist data was collected with assistance of an infection control and quality development officer till the end of March 2015. Writing the research's report was performed in the following period till April of 2016.

The data collection and analysis (qualitative part) through the key informant interviews were conducted in May of 2016. Finally, writing the research report was completed in June 2016.

3.5 Sample size and sampling process

The sample size was calculated by using the Decision Analyst Statistical Program (Annex2). The calculated sample was (323). The researcher increased the sample to (370) to compensate for non-respondents and to increase the statistical power.

The following parameters were used to calculate the sample

- A maximum acceptable percentage points of error 5%
- A confidence level 95%
- An estimated percentage level 50%
- A total population 2037

The sampling process used in this study was a proportional stratified systematic random sampling approach. The target population of 2037 employees was divided into 5 categories: (1) Medical professions includes: physicians, dentists pharmacists and assistant physicians (2) Nurses, (3) Paramedics, (4) Administrative and regulatory services including

administrators, clerks, security, office boys, hospital porters and patient assistance service workers, (5) Other services including engineering & maintenance, cleaning, food and ambulance transport services. The sample of the 370 participants was divided with a percentage proportionate to the total number of healthcare workers in each of the selected professional categories (Annex 3). A systematic random sampling approach was used in the selection process of participants by selecting every fifth subject in the sample frame of each category. The stratification was done to ensure same opportunities among male and female healthcare workers.

The key informants for the in-depth interviews were selected purposefully after the consultation of the academic supervisor. The total number of interviewees was five. The idea of including this sample is to dig deeply and understand in-depth the perspectives of occupational safety thoroughly. The qualitative component was carried out after the quantitative one in order to explore issues that emerged from the quantitative study.

3.6 Eligibility criteria

3.6.1 Inclusion criteria

Quantitative portion

All employed healthcare workers from the different professional categories who had worked at the complex for at least one year of experience at the study time.

Qualitative portion

Key informants who had managerial positions at the complex for at least two years in those managerial positions at the time of the study**.**

3.6.2 Exclusion criteria

Quantitative portion

Former healthcare workers at the complex who did not work during the data collection period for any reasons e.g. (retirement, turnover, sickness, travelling abroad, vacation...). In addition to that, all new staff with less than one year of employment together with, all volunteers, and students at time of the study were excluded from the study.

Qualitative portion

Key informants with less than two years in their managerial positions were excluded.

3.7 Ethical and administrative considerations

After receiving the study approval from Al- Quds University, an official letter of approval from the Helsinki committee in Gaza was obtained (Annex 4). Additionally, the official MOH directorates were formally contacted to obtain their approvals to conduct the study at Al-Shifa Medical Complex. Formal letter was sent through the university to official MOH directorates mentioning the title of the research study and the name of researcher (Annex 5).

A full explanatory form was attached to each questionnaire and provided to the interviewees. The form included the title of the study, purpose, and other information needed for clarification to subjects. The right to participate or not, confidentiality, anonymity of collected data were completely maintained (Annex 6).

3.8 Study instruments

The researcher used three data collection methods in this study; the first one was a self-administrated questionnaire for the quantitative part, the second was an OSHA observational checklist, meanwhile the third tool was key informant interviews as a the qualitative part.

1. The self developed questionnaire (Annex 7) designed to be clear and free from complex and leading questions. The questionnaire was validated by a group of experts and was subjected to piloting to ensure credibility of answers. The study questionnaire was divided into two parts:

The first part contained characteristic data about the participants which was personal and work related data, including: age, sex, marital status, educational level, nature of work (profession), years of experience, workplace type, weekly working hours, daily work, sick leaves per month related to work and exposure to accidents, injuries or diseases at work (11 questions).

The second part included questions addressing factors influencing occupational safety. It consisted of five domains: (a) availability of occupational safety laws, rules and guidelines and their activation and development (15 items).; (b) top management commitment to occupational safety issues (14 items); (c) workplace hazards and related diseases identification and the factors causing those (19 items in addition to one open question); (d) availability of occupational safety means and measurements (16 items) and (e) employees

compliance and commitment with occupational safety means and their training (17 items). All items used in this part were scored on a five-point Likert scale for degree of agreement ranging as: 5 for 'very big', 4 for 'big', 3 for 'middle', 2 for 'little' and 1 for 'very little'.

2. The second data collection tool was an observational checklist according to OSHA standards (Annex 8). It consisted of 10 dimensions with 75 statements specified to evaluate to witch extent the complex occupational safety means met the OSHA standards. The dimensions are: exit routes (contains 12 statements); emergency action plan and fire prevention plan (contains 11 statements); hazards communication (contains 5 statements); personal protective equipment (contains 5 statements); walking and working surfaces (contains 8 statements); radiation safety (contains 7 statements); electrical safety (contains 9 statements); formaldehyde safety plan (contains 10 statements); compressed gas cylinders (contains 7 statements); ergonomics program (contain one statement)

3. The third data collection method was the key informant interviews where semi-structured, open ended statements were used in this qualitative methodology (Annex 9). Five experts were selected to conduct in-depth interviews to dig beneath the elicited quantitative data of the study, make deep understanding and generate new ideas, and give more evidence towards their perception.

3.9 Pilot study

A pilot study was done before the actual data collection and after the evaluation of the questionnaire by experts. Forty participants were included. This step was taken to examine the participants' responses to the questionnaire, to explore the appropriateness of the study instrument and to allow the researcher the opportunity for training in data collection. This also permitted for further improvements of the study's validity and reliability. Participants of the pilot study were excluded from the actual study sample.

3.10 Response rate

The response rate for this study was 94.5%, where the total number of the respondents was 350 out of 370 healthcare workers. This high percentage of response was achieved due to the healthcare workers' realization of the importance of safety-related issue and their desire to overcome the gaps in their workplaces.

3.11 Data collection

The first part of data (quantitative) was collected by the researcher himself using a self administered questionnaire and consumed about two months. Participants were given complete instructions about the purpose of the study and how they were included in the sample after obtaining the consent to participate. Completing of the questionnaires was conducted during the daily work shifts (morning, evening and night shifts) and the researcher gave the participant enough time to answer the questions and encouraged them to be open honest and virtuous in responding while assuring them that information given will remained confidential and is only to be used for the purpose of the study. During data collection, any vague information was simplified by the researcher himself to ensure exact and real answer by the responder. Filled out questionnaires were revised by the researcher himself to ensure the completion of data before data entry. In average, questionnaire filling took about 30 minutes to be completed.

An OSHA observational checklist data was collected by an infection control and quality development officer and the researcher himself during three rounds at different complex departments to examine to witch extent the current safety means met the OSHA checklist standards.

Key informant interviews were conducted by the researcher himself and consumed about two months. The interviewees were contacted face to face, and the average of time for an interviews was ranged from 45-60 minutes. All interviewees were informed about the purpose and the main features of this study. The interviews were semi-structured and included a series of open-ended questions with follow-up probes. Notes that were taken during the interviews were recorded to allow further capturing of information. The interviews focused on the following domains; current status of occupational safety, Occupational safety rules and guidelines and their development, top management commitment to occupational safety issues, identifying the main factors that affect occupational safety, occupational hazards and related diseases among healthcare workers and factors beyond these hazards, occupational safety means availability, which are the responsible authorities, what is the employees' compliance level towards safety practices and how to improve that, asking about occupational safety training programs and about what could be done to enhance and promote the occupational safety. Interviewees were asked for their feedback and opinions regarding those domains.

3.12 Validity and Reliability

3.12.1 Face validity

The researcher organized the questionnaire in a way that enables the participants to read it easily. The layout of the questionnaire, in addition to its structure and its shape were done in a highly professional manner.

3.12.2 Content validity

Content validity is a subjective estimate of measurement rather than statistical analysis, in order to validate the instrument used. It was done before data collection, by sending the questionnaire with a cover letter to nine experts from different backgrounds; MOH managers, academics and health experts. They were asked to validate the questionnaire in relation to aim of the study and its objectives. Feedback was obtained from seven of the experts (Annex 10). All of the comments of the experts were taken into consideration after the consultation with the supervisor. Other general measures of validity were considered such as standardization of implementation and being meticulous.

The validity of the qualitative key informant interviews data was assured by the following actions: going back to respondents (member check) to make sure that the analyzed data was correctly interpreted and low-inference description by using description phrased very closed to the respondent's accounts.

3.12.3 Reliability

Reliability is a condition for validity; it is about the consistency of the measurement. The statistical test used for internal consistency (reliability) was the Cronbach Alpha coefficient. The overall value of the reliability coefficient was 0.93, which is considered as very good reliability coefficient while that the Split Half Coefficient was 0.91 (Annex 12).

To assure the trustworthiness of the qualitative part in this study, a peer check was done through professional experts to review the analyzed data to assure similar or appropriate meaning among the peers. Then, a member check was done to assure the accuracy and transparency of the transcripts during the interviews. Also, a description of the interviewees' characteristics (location, position) was done (Annex11).

3.13 Data management and analysis

3.13.1 *Quantitative part*

After data collection, the researcher revised the questionnaire, coded it and entered the data into the computer software Statistical Package of Social Science (SPSS) program version 20. Data entry was done day by day to avoid unexpected problems. Data cleaning was done by checking the frequencies of all variables. The questionnaire was analyzed by the quantitative analysis. General frequencies were done to figure the response and missing data for each question. To examine the relationships between independent (categories) and dependent variables (numeric scores), inferential statistical tests were made including an independent t-test and a one-way ANOVA test. The independent t-test was used to compare two means and the one way ANOVA was used to compare more than two means. Differences among variables were regarded as statistically significant when the P value was lower than 0.05.

3.13.2 *Qualitative part*

After completing the analysis of the quantitative data, the collected qualitative data was then analyzed using the coding and thematic analysis approach. The interviews were recorded as audio as well as a written transcript, and data were transcribed professionally to facilitate analysis. All interview transcripts were read many times to get a sense of the data and to review for emerging themes. A coding list was developed and revised as data were reviewed. Data for each code were reviewed and compared to data for other codes. Finally, the researcher identified key themes, grouped responses by theme, then compared and resolved findings.

3.14 Limitations of the study

1. The cross-sectional design of the study had some weakness as it is liable to contextual changes.

2. Limited access to scientific resources as textbooks, articles and journals.

3 Lack of literature about occupational safety in the Gaza Strip.

4. Recurrent electricity cuts limited the access hours to the internet.

5. The difficulties of data collection because of work overload of the researcher and most of the participants.

Chapter 4

Results and Discussion

In this chapter the researcher illustrates the main findings revealed by the analysis of the collected data. The chapter starts by descriptive statistics which demonstrate the socio-demographic and occupational characteristics of the study participants. The concepts of occupational safety and the factors that influence the occupational safety status are presented as well.

4.1 Descriptive analysis

4.1.1 Sociodemographic characteristic variables

Table 4.1: Distribution of responses according to participants socio-demographic characteristics (N=350)

Variable	No.	%
Gender		
Male	241	68.9
Female	109	31.1
Total	**350**	**100.0**
Age groups		
20 to30 years	145	41.4
31 to 40 years	130	37.1
41 to 50 years	56	16.1
51 and above	19	5.4
Total	**350**	**100.0**
Marital status		
Single	86	24.6
Married	264	75.4
Total	**350**	**100.0**
Education level		
Secondary or lower	30	8.6
Diploma	86	24.6
Bachelor	166	47.4
Master or higher	68	19.4
Total	**350**	**100.0**

The total number of distributed questionnaires was 370 while the number of respondents was 350 with a response rate of 94.5%. The distribution of participants according to gender was as follows; 68.9% males and 31.1% females as shown in Table 4.1. The finding is consistent with Elsheikh Khaleel A. (2008) who investigated the availability of prevention tools at Gaza Strip governmental hospitals and their impact on the employees' performance

and found that 67.5% were males and 32.5% were females. This result refers the highly percentage of male staff at the MOH hospitals at the different profession categories at the sample study.

As Table 4.1 indicates, the largest portion of respondents was married (75.4%) while (24.6%) were single. The finding is consistent with Al Jabaly (2015), who investigated nurses working conditions at surgical departments in the Gaza Governorates and found nearly the same result.

Regarding the age, the range of participant's age was from 20 to above 50 years. As seen in Table 4.1 the younger group (20 to 30 years) accounts for the largest portion (41.4%), while (37.1%) of the participants are located in the age group between 31 to 40 years, about (16.1%) aged between 41 to 50 years and (5.4%) of respondents were 51 years or above. As showed the majority of the participants is younger group (20 to 40 years) accounted 78.5% of the sample population. This high percentage of younger HCWs is consistent with the findings of Elsheikh Khaleel A. (2008) who found that the majority of respondent 72% were between 20 and 40 years. Also Radwan (2012), who assessed factors hindering the implementation of quality improvement at the MOH-Gaza, found that 64.2% were up to 40 years. The younger HCWS group represents an opportunity for health care decision makers for their investment and development. In addition, the older group of HCWs has accumulated experience and could provide the younger group.

Moreover, in regards to educational level, the majority of respondents (47.4%) were holding a bachelor degree while, (24.6%) held a diploma degree, at the same time (19.4%) held a master's or higher degree while the remaining (8.6%) attained secondary education or lower. This revealed that about 66.8% of the respondents were highly educated (Bachelor, master or higher). These findings were consistent with Elsheikh Khaleel A. (2008) who found that 69.7% of the healthcare workers were holding a bachelor's or a master's degree or higher but differs from Ashour (2015) findings which showed that 93.4% were highly educated. The high percentage of HCWs educational level will reflect the knowledge, attitudes and practices towards occupational safety concepts and provide opportunities for investment in training programs of occupational safety.

4.1.2 Work-related characteristic variables:

Table 4.2 shows that the majority of the participants of the sample (77.4%) work at the main three hospitals of the complex as follows: (39.4%) at the surgical hospital, (19.4%) at the medical hospital and (18.6%) at the gynecological hospital, while (13.1%) work at outpatient clinics and complex administration and the smallest portion (9.4%) work at other workplaces. Regarding El Saga (2014) study, the surgical department had the highest percentage with 25.7%, administration affairs had 23.7%, and the gynecology department had 15%, while internal medicine had 8.9%. The result of the study revealed that the HCWs at the surgical hospital accounted for the largest portion (39.4%) that may be due to the fact that the medical hospital was destroyed for reconstruction and some medical departments were transferred to Al-Ranteesi hospital (Oncology & Hematology departments). That might led to the vast number of employees working at the surgical departments.

Regarding profession, the study's population was divided into 5 categories namely:
1. Medical professions which include (physicians, dentists, pharmacists and physicians assistants), they cover (26.6%)

2. Nurses was analyzed as separate category due to their special nature of work and work task, they covered the largest portion of the sample (32.9%)

3. Administrative services which includes administrators, clerks, laborers, office boys, hospital porters and security guards covering (15.4 %)

4. Other services including engineering & maintenance workers, cleaning workers, food workers, ambulance & transport officers covering (15.4%)

5. Paramedics which includes (radiology technicians, laboratory technicians, anesthesia technicians and physiotherapists) consists the least group of the sample covering only (9.7%).

This is consistent with the proportional percentage of each category of the target population working at the Al-Shifa Medical Complex. On other hand the nurses at MOH represents the major component (37%) of all health care providers (MOH, 2013).

Table 4.2: Distribution of responses according to participants occupational (work-related) characteristics (N=350)

Variable	No.	%
Work place		
Surgical hospital	138	39.4
Internal Medicine hospital	68	19.4
Gynecology& obstetric hospital	65	18.6
Outpatient clinic and complex administration	46	13.2
Other work places	33	9.4
Total	**350**	**100.0**
Nature of work		
Medical Professions	93	26.6
Nurse	115	32.9
Paramedics	34	9.7
Administrative services	54	15.4
Other services	54	15.4
Total	**350**	**100.0**
Years of experience		
1 and less than 5 years	106	30.3
5 and less than 10 years	123	35.1
10 and less than 15 years	73	20.9
15 years and more	48	13.7
Total	**350**	**100.0**
Weekly working hours		
35 hours	184	52.6
More than 35 hours	166	47.4
Total	**350**	**100.0**
Daily work		
Morning	184	52.6
Shifts (M.E.N.)	166	47.4
Total	**350**	**100.0**
Sick leaves per month related to work		
No	274	78.3
Yes	76	21.7
Total	350	**100.0**
Yes (76=21%) 1-3	59	16.9
4-6	9	2.6
More than 6	8	2.2
Exposure to work accidents or disease		
No	263	75.1
Yes	87	24.9
Total	**350**	**100.0**
Yes (87=24.9%) 1-3	70	20
4-6	15	4.3
More than 6	2	0.6

Furthermore, in regard to work experience years at the complex (35.1%) of participants had five or less than ten years, (30.3%) had more than one or less than five years of experience, (20.9%) had 10 or less than 15 years of experience while (13.7%) had 15 years of experience or above. The study revealed that about two third of the study sample (65.4%) had up to 10 years of work experience while (34.65%) had more than 10 years of work experience. El Saga H, (2014) who investigated patient safety culture at Gaza Governorates hospitals, found that 55.9% of his participants had 6 or more experience years in hospitals and 59.9% had 10 or more years of experience in their professions. Elsheikh Khaleel A. (2008) found that 69.4% had up to 10 years of experience. These results may be due to the political split of 2007 where most of the expert HCWs left their work places at the complex and were replaced by new employees. On other hand, the study indicates a variety of years of experiences in the study sample, where the number of experience years of the participants ranged from more than one year to more than 15 years, which indicate the participants good knowledge about safety issues, thus enriching the study with various perspectives of occupational safety dimensions.

Regarding weekly working hours, (52.6%) were working 35 hours weekly, while (47.4%) were working more than 35 hours weekly. This is similar to the percentages on daily work which revealed that (52.6%) of the participants were working at morning shift only, while (47.4%) were working at different shifts i.e. morning, evening and night. Hamdan and Saleem's (2013) findings revealed that more than 50% had an over-time period, while El-Saga H. (2014) found that (69.5%) were working 20-39 hours weekly and (30.5%) were working more than 39 hours weekly. Al Jabaly A. (2014), who assessed nurses working conditions at surgical departments in the Gaza Governorates, found that (64.7%) were working more than 35 hours weekly while (35.3%) were working 35 hours or less. This may due to fact that the health care provision is continues process and extra over time work may affect the safety status due to stress and overload which indicates more efforts and attention by these HCWs.

In addition, regarding exhaustion of sick leaves related to work among the participants per month revealed that (78.3%) did not take any sick leave, while (21.7%) were taking sick leaves due to occupational causes, from them (16.9%) exhausted 1-3 days leaves monthly, (2.6%) exhausted 4-6 days leaves monthly, while (2.2%) were exhausted more than 6 times monthly, Fig.4.1. This differs from Jouda (2006), who assessed occupational hazards among governmental HCWs in GS and found that (62%) had sick leaves during the last

year of their work, (90.9%) due to non-occupational causes, while (8.6%) due to occupational diseases and injuries, and the remaining (0.5%) of them were due to other causes.

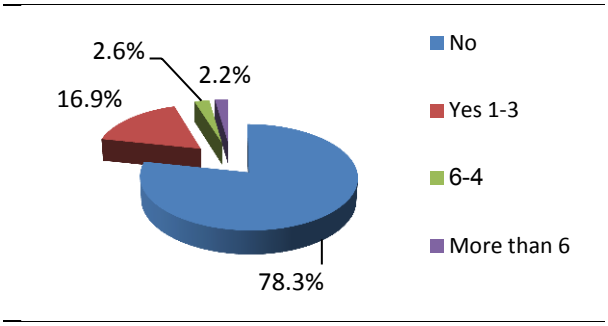

Figure 4.1: Distribution of participants by monthly sick leaves

Moreover, in regards to exposure to work injuries, accidents and related occupational diseases among the participants, (75.1%) were not exposed during the total years of experience, while (24.9%) were exposed to work injuries, accidents or occupational diseases, from them (20%) exposed 1-3 times, while (4.6%) were exposed 4-6 times and the remaining (0.3%) were exposed more than 6 times. Fig.4.2. This is consistent with Jouda (2006) who found that (20%) were exposed to work accident but differs from Skipa F. (2011), who assessed occupational health and safety practices on job performance at the Tetteh Quarshie Memorial hospital, Mampong-Akuapem and found that (8.62%) were exposed to work injury during their total years of experience while 91.38% not exposed.

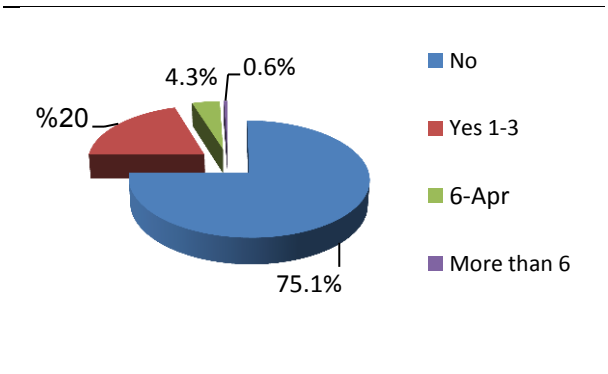

Figure 4.2: distribution of participants by exposure to work accident or related diseases

4.2 Analysis of the second part of the questionnaire:

In this section the researcher presents the analysis of the study instrument-self administrated questionnaire consisting of 81 scale questions. They represent five main domains with four sub-domains which contribute proportionally to the overall scale. All questions were rated against a Likert scale that starts from "1" indicating the least value (Very little) and "5" indicating the highest one (Very big). The average score of each domain was calculated through computing individual responses, then dividing them by the number of questions which build the whole domain.

4.2.1 Overall occupational safety status perception at Al-Shifa Medical Complex:

The following section demonstrates scoring of individual questions, the overall rating of each domain and the total scale scoring. As shown in Table 4.3, the overall occupational status of the study's participants perception elicited a moderate average (mean is 2.78 out of 5, a median of 2.78, a mean percent at 55.6% and SD = 0.47)

4.2.2 Summary of occupational safety domain scores and overall OS status:

As illustrated in Table 4.3: the mean of the total scale and every one of its domain have been calculated from the converted data. Obviously, the mean percent of employees practices commitment and compliance to use the prevention means and occupational safety procedures at the complex domain was the highest (71.13%), with a mean of 3.56 out of 5, a median of 3.50 and ranked (1st) followed by the main factors beyond work-related injuries, accidents and diseases domain with a mean percent of (70.97%), a mean of 3.67, a median of 3.55 and ranked (2nd), while Identification of workplace risk factors, accidents, injuries and work-related illnesses among employees in the complex domain had a mean percent of (67.56%), a mean of 3.38, a median of 3.50 and ranked (3rd), followed by the availability of prevention tools and occupational safety procedures in the complex domain with mean percent (54.79%), a mean of 2.74, a median of 2.69 and ranked (4th). The activation and development of safety rules, regulations and procedures domain had mean percent of (49.29%), a mean of 2.46, a median of 2.50 and ranked (5th), whereas, commitment of complex top management to the occupational issues had mean percent of (47.64%), a mean of 2.34, a median of 2.29 and ranked (6th). The availability of occupational safety rules, laws and regulations at the complex domain had mean percent of (46.36%), a mean of 2.32, a median of 2.38 and ranked (7th), while the least domain score was the extent of staff training on the use of prevention means and occupational safety

procedures at the complex with mean percent (43.17%), a mean of 2.16, a median of 2, and ranked the (8th).

Table 4.3: Summary of occupational safety domains scores and overall OS status

Domain	No of items	Median	Mean (5)	Mean Score%	SD	Rank
1.1Availability of occupational safety rules, laws and regulations						
	8	2.38	2.32	46.36	0.76	7
1.2Activation and development of safety rules, regulations and procedures						
	7	2.50	2.46	49.29	0.80	5
2. Commitment of complex top management to the application of occupational safety policy, rules and regulations						
	14	2.29	2.34	46.74	0.77	6
3.1 Identification of workplace risk factors, accidents, injuries and work-related illnesses among employees in the complex						
	13	3.50	3.38	67.56	0.84	3
3.2 Main factors beyond work-related injuries, accidents and diseases						
	6	3.67	3.55	70.97	0.87	2
4. Availability of prevention tools and occupational safety procedures in the complex						
	16	2.69	2.74	54.79	0.66	4
5.1 Employees practices and compliance to use the prevention tools and occupational safety procedures at the complex						
	8	3.50	3.56	71.13	0.84	1
5.2 The extent of staff training on the use of prevention means and occupational safety procedures at the complex						
	9	2.00	2.16	43.17	0.89	8
Total	**81**	**2.78**	**2.78**	**55.6%**	**0.47**	

The findings revealed that all occupational safety domains had a mean score average ranged from 2.16 to 3.56 out of 5, a mean percent average ranged from 43.17% to 71.17%.

The respondents reported low level of perception regarding availability of occupational safety rules, laws and regulations at the complex with a mean average of 2.32 out of 5 and a mean percent at (46.36%) as illustrated in Table 4.4. All items ranged from 42.46% to 48.74%.

Table 4.4: Distribution of respondent's perception to availability of occupational safety rules, measures and regulations at the complex

Statement	Degree of Agreement					Mean (5)	Mean Score%
	Very Big	Big	Middle	Little	Very Little		
1. National bodies such as (MOL, EQA and CD) provide rules and regulation for safety procedures inside the complex							
No.	9	20	122	118	81	2.31	46.17
%	2.6	5.7	34.9	33.7	23.1		
2. There are national laws (Labor Law, Public Health Low, Environmental Law) to regulate occupational safety procedures within the complex							
No.	6	37	126	116	65	2.44	48.74
%	1.7	10.6	36	33.1	18.6		
3. There is a special management system for occupational safety within the complex							
No.	7	28	125	119	71	2.37	47.49
%	2	8	35.7	34	20.3		
4. There are committees concerned to provide occupational safety regulations, guidelines and protocols							
No.	6	23	119	122	80	2.29	45.89
%	1.7	6.6	34	34.9	22.9		
5. There are mandatory laws and regulations for the occupational safety procedures							
No.	3	22	136	123	66	2.35	47.03
%	0.9	6.3	38.9	35.1	18.9		
6. There are clear guiding signs that show prevention methods and safety procedures inside the complex							
No.	12	36	115	112	75	2.42	48.46
%	3.4	10.3	32.9	32	21.4		
7. There are clear guiding booklets that show prevention methods and safety procedures inside the complex.							
No.	11	24	101	114	100	2.23	44.69
%	3.1	6.9	28.9	32.6	28.6		
8. There are strict disciplinary actions against those who don't follow safety procedures inside the complex							
No.	10	17	96	110	117	2.12	42.46
%	2.9	4.9	27.4	31.4	33.4		
Total		**Mean (5) = 2.32**			**Mean Score = 46.36%**		

About (48.74%) of the participants knew that there are national laws (Labor Law, Public Health law, Environmental Law) to regulate occupational safety procedures within the complex and (47.49%) of the participants, stated that there is a special effective system for occupational safety within the complex. (47.03%) believe that there are mandatory laws and regulations for the procedures of occupational safety. In addition, (46.16%) of

participants stated that there are national bodies such as (MOL, Civil Defense, EQA) providing rules and regulations for safety procedures inside the complex, while (45.49%) were aware of that there are committees concerned to provide occupational safety regulations and guidelines for occupational safety. (48.46%) of the participants confirmed that there are clear guiding signs that show prevention methods and safety procedures inside the complex. Moreover, (44.69%) of the participants knew that there are clear guiding booklets that show prevention methods and safety procedures inside the complex, while (42.46%) expressed that there are strict disciplinary actions against those who don't follow safety procedures inside the complex. This reveals the lack of occupational safety rules, laws, guidelines and regulations at the Al-Shifa complex which coincides with Elsheikh Khaleel A., (2008) who assessed the availability of occupational safety means at the Gaza Strip governmental hospitals and their impact in the employee's performance and found that there was a lack of applicable occupational safety laws, regulations and guidelines at the Gaza Strip governmental hospitals. In addition to that, Jouda (2006) estimated that the health system did not establish any specific guidelines for safe work. This implies for the MOH, being the main responsible health care provider, to establish an OHS management system and committees with regular monitoring and evaluation. Furthermore the external authorities such as MOL, EQA, CD and other OS institutions must take their active roles in the provision, monitoring and auditing of the OS laws, rules, and regulations in the complex.

Considering the analysis of qualitative data, despite most of the interviewees concurred with the view that there were no clear OS policies, regulations and guidelines, all of them confirmed the absence of written OS policies, regulations or guidelines.

"The current occupational safety status at the complex is poor, rather it has been practiced according to the employee's perception and efforts, and therefore, we face difficulties because the practicing of occupational safety is neither organized nor systematic. Clear occupational safety policy and regulations will assist managers and employees to understand the requirements and responsibilities". Nursing Director.

"There are no written occupational safety laws, protocols or guidelines. The current occupational process is not systematic and only limited to the infection control and quality development team efforts. We are in need of an occupational health and safety

management system and special safety committees with clear policy, regulations, guidelines and protocols" Infection Control and Quality Development Officer.

"The current occupational safety status is very bad. There are no written occupational safety laws, protocols or guidelines and no occupational safety standards. This is due to the absence of both an occupational safety management system and occupational safety committees at MOH hospitals". Administrative Director.

"The current occupational safety status at the complex is very poor. There are no occupational safety laws, protocols or guidelines; neither is there an occupational safety management system nor committees. The current occupational safety process is limited to employee's sick leaves and medicine prescriptions by newly established staff clinic since about five months without recourses". Medical Staff Doctor.

"The current occupational safety status at the complex is very bad. There are no clear occupational safety guidelines or regulations. The safety process is limited to one safety officer in engineering and maintenance directorate for safety means inspection, no safety committees or department". Maintenance Safety Officer.

Regarding the activation and development of occupational safety rules, laws and regulations at the complex, respondents reported a low level with the mean average of 2.46 out of 5 and a mean percent at (49.29%). As illustrated in Table 4.5. (46.69%) of the respondents stated that the internal bodies such as (occupational safety committees) activate and develop the rules and regulation of safety procedures inside the complex, while (44.57%) stated that external bodies such as (MOL, CD, EQA) activate and develop the rules and regulation of safety procedures inside the complex.

Additionally, (46.57%) agreed that developing and activating the laws, rules and regulations commensurate with the work requirements at the complex. (58.29%) believed that developing and activating the OS laws, rules and regulations decreases occupational diseases and (55.83%) agreed that developing and activating the OS laws, rules and regulations decreases accidents and work injuries, while (45.20%) stated that the OS rules, regulations and laws in the complex are developed continuously and (47.89%) agreed that the rules, regulations and laws of occupational safety in the complex are developed according to international standards for occupational Safety. The findings revealed the lack of occupational safety rules, regulations and laws activation and development with a low

level (46.36% mean percent) and highlighted the importance of proper activation and development by the responsible authorities such as MOH, MOL, EQA, CD, national and international OSH institutions in so that the current standards would conform to national and international occupational safety standards.

Table (4.5): Distribution of respondents perception about activation and development of occupational safety rules, regulations and procedures

Statement	Degree of Agreement					Mean (5)	Mean Score%
	Very Big	Big	Middle	Little	Very Little		
1. National bodies such as (CD, MOL) activate and develop the rules and regulation of safety procedures inside the complex							
No.	4	26	103	130	87	2.23	44.57
%	1.1	7.4	29.4	37.1	24.9		
2. Internal bodies such as (occupational safety committees) activate and develop the rules and regulation of safety procedures inside the complex							
No.	4	32	114	127	73	2.33	46.69
%	1.1	9.7	32.6	34	22.6		
3. Developing and activating the laws, rules and regulations commensurate with the work requirements in the complex							
No.	7	28	125	119	71	2.37	47.49
%	2	8	35.7	34	20.3		
4. Developing and activating the laws, rules and regulations decreases work accidents and injuries.							
No.	33	68	102	87	60	2.79	55.83
%	9.4	19.4	29.1	24.9	17.1		
5. Developing and activating the laws, rules and regulations decreases occupational diseases							
No.	42	73	101	81	53	2.91	58.29
%	12	20.9	28.9	23.1	15.1		
6. Rules, regulations and laws of occupational safety in the complex are developed according to international standards							
No.	9	30	128	106	77	2.39	47.89
%	2.6	8.6	36.6	30.3	22		
7. Rules and regulations and laws of occupational safety in the complex are developed continuously.							
No.	5	24	110	129	82	2.26	45.20
%	1.4	6.9	31.4	36.9	23.4		
Total		**Mean (5) = 2.46**			**Mean Score = 49.29%**		

Qualitatively, the interviewees were clear that there were very weak sides in the activation and development of occupational safety regulations and guidelines. There was consensus among the interviewees that continues activation and development of occupational safety laws, regulations and guidelines might influence the effective practicing of safety and will decrease the work accidents, injuries and occupational diseases.

"There are neither internal nor national authorities concerned with activation and development of occupational safety laws, protocols or guidelines. There are no clear occupational safety standards. Occupational safety laws, protocols and guidelines

development will increase the employee's knowledge and practices and decrease work accidents and injuries which would reflects as an improvement of the current occupational process". Infection Control and Quality Development Officer.

"No authorities are looking for the occupational safety development neither from MOH nor other. The continues development of occupational safety guidelines and procedures will improve the overall safety status as well as the employees, employees', patients', visitors' and community's safety". Nursing Director

"The main internal responsible body for the development and activation of occupational safety laws, regulations and procedures is the MOH, in addition to external bodies as MOL, EQA, CD and other OS institutions. Those must take their active roles in auditing and monitoring the occupational safety at the complex". Administrative Director.

Regarding perception of participants to the complex top management commitment to occupational safety issues and the application of occupational safety policy, rules and regulations as shown in Table 4.6, is low level with a mean average of 2.34 out of 5 and mean percent at (46.74%). All items of this domain ranged between (44.11% and 51.14 %.). 48.86% stated that there is a clear OS policy, while 46.29% thought that there is an assessment of the professional work risks by the complex top management and 44.57% that the HCWs are involved in this process. In addition 47.37% believed that there are qualified persons and expertise in the top management to work on the development of occupational safety systems, while 45.83% indicated that the complex top management makes administrative efforts to apply the rules and procedures of occupational safety, 44.11% showed that the top management provides technical and material resources for the application of occupational safety procedures while 46.51% responded that the complex top management works on and follows-up the application of plans and programs of occupational safety. Furthermore 51.14% agreed on that the complex top management complies with the Palestinian occupational safety regulations and laws such as (Labor law, Public Health law), 48.06% stated that the complex top management is interested in research and scientific studies related to the development of occupational safety procedures while 46.36% stated that the complex top management takes disciplinary procedures against workers who don't comply to occupational safety procedures. According to 47.20% of the participants there is a job description for each post that includes procedures of occupational safety related to the job to let the employee be aware of.

Table 4.6: Distribution of respondents perception to complex top management commitment to the OS issues, policy, rules & regulations application (N=350)

Statement	Degree of Agreement					Mean (5)	Mean Score%
	Very Big	Big	Middle	Little	Very Little		
1.There is a clear policy for occupational safety by the complex top management							
No.	6	37	128	114	65	2.44	48.86
%	1.7	10.6	36.6	32.6	18.6		
2. There is professional work risk assessment of the complex top management							
No.	4	33	106	133	74	2.31	46.29
%	1.1	9.4	30.3	38	21.1		
3. Employees are involved in the process of risk assessment and the development of OS procedures							
No.	6	24	101	132	87	2.23	44.57
%	1.7	6.9	28.9	37.7	24.9		
4. The complex top management makes administrative efforts to apply the rules and procedures of OS.							
No.	3	28	111	134	74	2.29	45.83
%	0.9	8	31.7	38.3	21.1		
5. The complex top management provides technical and material resources for the application of occupational safety procedures							
No.	3	21	103	139	84	2.2	44.11
%	0.9	6	29.4	39.7	24		
6. The complex top management works on and follows-up the application of plans and programs of OS.							
No.	5	26	114	138	67	2.33	46.51
%	1.4	7.4	32.6	39.4	19.1		
7. There are qualified persons and expertise in the top management to work on the development of OS.							
No.	9	32	110	127	72	2.37	47.37
%	2.6	9.1	31.4	36.3	20.6		
8. The complex top management is interested in research and scientific studies related to the development of occupational safety procedures							
No.	6	35	130	102	77	2.4	48.06
%	1.7	10	37.1	29.1	22		
9. There is a job description for each post that includes procedures of occupational safety related the job to let the employee be aware of.							
No.	7	38	110	114	81	2.36	47.20
%	2	10.9	31.4	32.6	23.1		
10. There is an effective medical record for workers pertaining to work-related accidents, injuries and illnesses							
No.	12	38	118	105	77	2.44	48.74
%	2	10.9	31.4	32.6	23.1		
11. The complex top management comply with the regulations and laws of the Palestinian occupational safety (Labor Act, Public Health Act)							
No.	13	40	129	115	53	2.56	51.14
%	3.7	11.4	36.9	32.9	15.1		
12. External bodies follow up the compliance of the top management to occupational safety rules and regulations							
No.	6	29	99	137	79	2.27	45.49
%	1.7	8.3	28.3	39.1	22.6		
13. The complex top management takes disciplinary procedures against workers who don't comply to occupational safety procedures							
No.	9	27	101	142	71	2.32	46.34
%	2.6	7.7	28.9	40.6	20.3		
14. The complex top management comply to laws that include the principle of compensation and insurance for workers in the event of exposure to accidents or work injuries							
No.	7	25	96	125	97	2.2	44.21
%	2	7.1	27.4	35.7	27.7		
Total	**Mean (5) = 2.34**				**Mean Score = 46.74%**		

At the same time that 48.74% stated that there is an effective medical record for workers pertaining to accidents and work-related injuries and illnesses related to the profession, 44.21% agreed with that the complex top management complies to laws that include the principle of compensation and insurance for workers in the event of exposure to accidents or work injuries and 45.29% agreed that national bodies follow up the compliance of the top management to occupational safety rules and regulations. The findings of this domain demonstrated that the commitment of the complex top management to OS issues and the application of occupational safety rules, regulations, laws and guidelines is low with a mean 2.34 out of 5 and a mean percent at (46.74%) which is congruent with Jouda, (2006) who found that there is no follow up or monitoring of the safety instructions or regular check up in the MOH. In addition Al Habeel W. & Ayesh A. (2011) who evaluated effectiveness of occupational safety and health measures in the scientific laboratories in the Palestinian universities in the Gaza Strip found a moderate degree of universities top management commitment to OS with a mean of 3.09 and a mean percent at 61.71%. The complex top management represent the main employer is responsible for creating safe workplace environments. The poor OS commitment of the complex top management might lead to less emphasis being placed on OS activities in the workplace. This implies more interest and to concern with workplace safety procedures and full support and commitment of the complex top management which is extremely vital in order to ensure a strong and an effective OHS management system which plays an important role in articulating worker concerns, identifying potential hazards, educating HCWs and improving work practices to ensure safe work environments.

Qualitatively, all key informants agreed that the role of top management commitment towards safety policy, regulations, rules and procedures application is very important. Most of them believed that the current role of top management commitment towards safety policy, regulations, rules and procedures application is weak and not effective due to limitation of financial, material and technical resources.

"I believe that the top management's commitment is consider the corner stone of the management. It has a highly important managerial responsibility. Without follow up and monitoring there is no organizational success". Nursing Director.

"I agree that without top management commitment and follow up of managerial tasks the organization will be destroyed and the system will go away. The top management must have an effective role in safety measurements application." Administrative Manager.

"The top management's commitment, following up, monitoring and support of organizational conditions is very important for all. The employees must involve in the organizational programs and plans including occupational safety. The top management must provide all recourses to achieve organizational goals." Infection Control and Quality Development Officer.

In regard to main risk factors of different workplace hazards, accidents and work related diseases to witch HCWs exposed during their daily work. as shown in Table 4.7 the mean average of this domain was a moderate one at 3.38 out of 5 and a mean percent at (67.56%).

The vast majority of respondents (83.54%) demonstrated that they sometimes work on holidays and (83.54%) put on protective cloths or equipment, followed by (78.97%) that stand for long times, (78.23%) reported that they directly dealing with patients and contact persons, (73.54%) work in a very noisy environment, (69.60%) handle electrical equipment and sets. (66.34%) use sharp tools and machines while (65.37%) deal with solid or moist objects, (66.1%) of the participants says that their job requires attention and clear focus. Furthermore, (60.17%) work in hot temperatures, extreme cold or moisture, (58.68%) deal with fumes, gases, radiation, dust and liquids and (57.54%) carry heavy weights.

These risk factors lead to many hazards, accidents and work related diseases among the HCWs as illustrated in Table 4.8. The main hazards were air-borne (respiratory) and skin transmitted infectious diseases as stated by (49.7%) of the participants. The main exposed category of them were nurses (21.4%), followed by physicians (13.7%), paramedical (4.3%), administrative services (3.7%), food services (2%), engineering & maintenance services and cleaning services (1.7%) for each category and the smallest category was ambulance & transport services workers (1.1%). This is related to the fact that HCWs daily work needs to deal directly with patients and contact persons witch increase person to person transmission of infections.

Table 4.7: Distribution of respondents perception to identify workplace risk factors of accidents, injuries and work-related illnesses among HCWs in the complex N= (350)

Statement	Degree of Agreement					Mean (5)	Mean Score%
	Very Big	Big	Middle	Little	Very Little		
1. Stand for long times							
No.	145	99	66	23	17		
%	41.4	28.3	18.9	6.6	4.9	3.95	78.97
2. Carry heavy weights							
No.	51	57	104	74	64		
%	14.6	16.3	29.7	21.1	18.3	2.88	57.54
3. Handle electrical equipment and sets							
No.	87	102	84	46	31		
%	24.9	29.1	24	13.1	8.9	3.48	69.60
4. Deal with a solid or moist objects							
No.	68	101	79	61	41		
%	19.4	28.9	22.6	17.4	11.7	3.27	65.37
5. Use sharp tools and machines							
No.	101	83	53	52	61		
%	28.9	23.7	15.1	14.9	17.4	3.32	66.34
6. Deal with fumes, gases, radiation, dust and liquids							
No.	28.9	23.7	15.1	14.9	17.4		
%	69	75	61	57	88	3.32	66.34
7. Work in hot temperatures, extreme cold or moisture.							
No.	52	84	92	59	63		
%	14.9	24	26.3	16.9	18	3.01	60.17
8. Work in a very noisy environment							
No.	117	99	65	42	27		
%	33.4	28.3	18.6	12	7.7	3.68	73.54
9. Directly deal with patients and contact persons.							
No.	158	88	50	23	31		
%	45.1	25.1	14.3	6.6	8.9	3.91	78.23
10. Work for long hours (many shifts)							
No.	100	77	50	47	76		
%	28.6	22	14.3	13.4	21.7	3.22	64.46
11. My job requires attention and clear focus							
No.	93	78	77	45	57		
%	26.6	22.3	22	12.9	16.3	3.3	66.10
12. Sometimes I work on holidays							
No.	192	76	44	28	10		
%	54.9	21.7	12.6	8	2.9	4.18	83.54
13. Put on protective cloths or equipment							
No.	58	88	2.78	1.35	55.6		
%	12.6	19.7	26	16.6	25.1	4.18	83.54
Total		**Mean (5) = 3.38**			**Mean Score = 67.56%**		

The second hazard category to witch employees exposed to was back pain and musculoskeletal disorders represented (30.8%), distributed among profession categories as follows: nurses (10.6%), physicians (6.3%), administrative services (6%), cleaning services (3.7%), paramedical (3.4%) and least portion food services (0.8%). This differs from

Jouda, (2006) who found that complaints from back pain and Musculoskeletal disorders were the highest and main complain for all types of HCWs work.

Table 4.8: Distribution of hazards & work related diseases among respondents (N350)

Occupational hazards & Diseases		Profession Category								Total
		Nurse	Physician	Paramedical	Admin Services	Cleaning Services	Eng. & M. Services	Food Services	Ambulance Services	
Infectious Diseases (Respiratory & Skin transmitted)	N	75	48	15	13	6	6	7	4	174
	%	21.4	13.7	4.3	3.7	1.7	1.7	2	1.1	49.7
Back Pain & Musculoskeletal Disorders	N	37	22	12	21	13	3	0	0	108
	%	10.6	6.3	3.4	6	3.7	0.8	0	0	30.8
Needle Stick injury & Blood borne infectious diseases	N	50	20	14	0	17	0	0	0	101
	%	14.2	5.7	4	0	4.9	0	0	0	28.8
Work overload, Stress & Violence	N	38	22	9	10	4	0	0	2	85
	%	10.8	6.2	2.5	2.8	1.1	0	0	0.8	24.2
Varicose Veins	N	17	8	7	0	6	0	4	0	42
	%	4.9	2.3	2	0	1.7	0	1.1	0	12
Electrical Hazards	N	10	15	3	0	0	7	0	0	35
	%	2.8	4.2	0.8	0	0	2.2	0	0	10
Carcinogenic Hazards	N	3	10	7	0	0	0	0	0	20
	%	0.8	2.9	2	0	0	0	0	0	5.7
Vision Problems	N	0	5	0	10	0	0	0	0	15
	%	0	1.4	0	2.8	0	0	0	0	4.2

The third hazard category was needle stick injury and related blood borne transmitted diseases such as HIV, HBV, HCV. That category of hazard faced (28.8%) of the population study. From them the highest profession category was nurses (14.2%) followed by physician (5.7%), cleaning services (4.9%) and paramedical (4%). This is mainly due to frequent and direct dealing with patients and the frequent use of sharp tools and instruments witch got a positive response of (65.37%) in Table 4.7. Elsous A. et al (2016)

assessed needle stick injuries among nurses at Al Shifa Medical Complex and found that approximately 54.1% of nurses reported to have at least one needle stick injury within the least 6 months and the highest rate was in the gynecological/obstetric hospital with very few of them seeking consultation or having reported the incidents to the Infection Prevention and Control Office and none of them had been through the post exposure prophylaxis protocol. They recommended employer mandated vaccination policy to improve vaccination coverage.

The fourth hazard category was work overload, stress and violence which accounted for (24.8%). The nurses cover the largest portion (10.8%), followed by physicians (6.2%), admin services (2.8%), paramedical (2.5%), cleaning and ambulance services (1.1%, 0.8% respectively). This may be due to that HCWs work in a very noisy environment (73.54%) work many shifts for long hours (64.46%) and sometimes work in holidays (83.54%) accordingly.

The fifth hazard category was varicose veins (12%) distributed as follows: nurses (4.9%), physicians (2.3%), paramedical (2%), cleaning and food services (1.1% and 1.1% respectively). This may be due to HCWs standing for long times during their work according to (78.97%) of the participants.

The electrical hazards among the HCWs was (10%) distributed as follows: physicians (4.2%), nurses (2.8%), engineering & maintenance services (2.2%) and paramedical (0.8%) which is related to use of electrical tools and equipment according to (69.60%) of the participants.

Carcinogenic hazards were (5.7%) among HCWs. (2.9%) for physicians, (2%) for paramedical and (0.8%) for nurses which may be due to the exposure to radiations and carcinogenic agents according to (58.86%) of the participants.
The vision problems were (4.2%), (2.8%) for admin services and (1.4%) for physicians.
According to the International Labor Organization (ILO) over 160 million workers fall ill due to workplace hazards and exposures, while more than 1 million workers have died as a result of occupational diseases (ILO, 2009).

Qualitatively, the interviews revealed that the different HCWs with different tasks at the complex may daily expose to many occupational hazards and related diseases. Some of these hazards may lead to absenteeism, work leave or death which reflects negatively on

the employee's health conditions, their families, organization and community at large. All key informants reported that most of these occupational hazards are preventable by insuring safety work conditions and the establishing of an occupational safety and health management system.

"I believe that the complex is full of different hazards and risk factors to witch healthcare workers are exposed daily. Some of these hazards may be dangerous on their life while they provide medical care to their patients. I think that the main occupational hazards and related diseases are: Air-borne Infections, needle stick injuries, low back pain and work overload" Nursing Director

"I firmly believe that the main hazardous workplace is the hospital. The hazards are everywhere. In addition to Health Care Workers patients and visitors can be exposed. Most of these hazards can be preventable if there is an applicable occupational safety management system with safety measurements, prevention tools and staff compliance. Health care workers with different professions during health care provision may be expose to life threading hazards. The main hazards are: Blood-borne diseases as HBV, HCV, mainly due to needle sick injuries as well as last study conducted by the Infection Control Office Team that revealed that 70% of nurses were exposed to Needle Stick Injuries (Elsous A. et al,.2016). Other hazards are: Direct transmitted infection by the patient's fluids, musculoskeletal disorders, falling down with accidents or fractures, work stress & psychological problems and the exposure to radiations, fumes, gases and dust which leads to respiratory problems." Infection Control and Quality Development Officer.

"I think that every one working at the hospital can expose to hazards. The main occupational hazards are: Needle Stick Injuries and Medical Waste Contamination especially among cleaning services workers, Musculoskeletal disorders, Falling Down and Work Overload and Stress." Administrative Manager.

"From my experience I agree that everybody who work or visit the hospital may be exposed to hazards. The different HCWs are being exposed to different hazards according to their work tasks. The most sick leaves were taken by maintenance services workers and physiotherapists meanwhile professions with the least use of sick leaves were physicians and nurses. The main causes were: Respiratory infectious diseases (the most percentage), musculoskeletal disorders, renal colic and some chronic diseases such as:

Diabetes Mellitus, Hypertension and cardiac problems (about 30-40 employees)."Medical Staff Doctor.

"The main hazards to which employees are exposed to are: Infectious diseases, musculoskeletal disorders, work overload and psychological problems." Maintenance Safety Officer.

The researcher found that the mentioned occupational hazards and related diseases among HCWs in Table 4.8 were due to many organizational factors illustrated in Table 4.9.

Table 4.9: Distribution of respondents to main attributed factors of occupational hazards and related diseases among HCWs:

Statement	Degree of Agreement					Mean (5)	Mean Score%
	Very Big	Big	Middle	Little	Very Little		
1. Lack of compliance to occupational safety laws, rules and regulations because they are not applicable							
No.	82	101	115	40	12	2.43	48.6
%	23.4	28.9	32.9	11.4	3.4		
2. lack of a specialized effective department or committee for occupational safety in the complex							
No.	97	114	96	33	10	2.27	45.4
%	27.7	32.6	27.4	9.4	2.9		
3 Lack of prevention tools and occupational safety measures in the complex							
No.	91	117	86	42	14	2.35	47.0
%	26	33.4	24.6	12	4		
4.The workers don't use protection tools and don't follow occupational safety procedures because their lack							
No.	52	117	105	63	13	2.62	52.4
%	14.9	33.4	30	18	3.7		
5.The scarcity of staff training courses on the use of the means of prevention and occupational safety procedures at the complex							
No.	94	106	80	51	19	2.41	48.2
%	26.9	30.3	22.9	14.6	5.4		
6. Lack of knowledge among workers about prevention means and occupational safety procedures at the complex							
No.	59	113	100	55	23	2.63	52.6
%	16.9	32.3	28.6	15.7	6.6		
Total		**Mean = 2.45**			**Mean Score = 49%**		

The mean average of this sub domain was 2.45 out of 5 with mean percent of (49%). The main attributed factor was the Lack of knowledge among workers about prevention means and occupational safety procedures at the complex as got (52.6%) of the participants. (52.4%) of the workers don't use protection tools and don't follow occupational safety procedures because of their lack followed by lack of compliance to OS laws rules and regulations because they are not applicable as agreed on by (48.6%). In addition (48.2%) claimed scarcity of staff training courses on the use of the means of prevention and

occupational safety procedures at the complex and (47%) of the respondents reported lack of prevention tools and occupational safety measures in the complex while (45.4%) stated lack of a specialized effective department or committee for occupational safety in the complex. These findings demonstrated the main causes of occupational accidents, hazards and diseases among HCWs. This is consistent with Skipa F. (2011) who found that the main causes beyond work accidents were non provision of necessary protective clothing and equipment, ignorance on health and safety matters, failure to follow instructions on the use of tools and equipment and lack of adequate training on health and safety. These factors are a result of the absence of an OHS management system or a committee concerned with the OS issues This implies that the top complex management should establish and implement those due to their highly importance not only for the employees, but for the patients and community's safety.

By analyzing the qualitative data, there was a consensus among the key informants about the related factors beyond demonstrated occupational hazards and related diseases to which health care workers exposed to. Furthermore new themes were involved to represent who is responsible for such hazards and how we can prevent them. There was a consensus among the key informants that the responsibility is shared between the employees and their organization.

"I think that the main factors of occupational hazards and diseases are: no specialized occupational safety and health committee or department, no clear written safety regulations or guidelines, no safety disciplinary measures, insufficient safety means especially person protective equipment, lack of employees knowledge, absence of safety training programs, employees compliance to some extent. I believe that if the management provides sufficient safety prevention tools, means, measurement and regulations, monitoring, following up and concerning with occupational safety issues, safety training programs for the employees, the employee's compliance will increase and then we can prevent and control the hazards which will improve the current occupational safety status dramatically as a goal." Infection Control and Quality Development Officer.

"The main factors of occupational hazards are related to that there is no monitoring or following up by top management, no specific occupational health and safety department or committees, no occupational safety disciplinary regulations or measurements, lack of occupational safety means especially personal protective

equipment, no occupational safety training programs excluding infection prevention control and to some extent employees compliance with infection control protocols(70%). I believe that the safety is the responsibility of all. We can improve the current occupational status and prevent the hazards by risk assessment of workplace hazards and the establishment of an occupational safety and health management system and a specific occupational health and safety department or committees with collaboration between management and employees." Nursing Director.

"I think that the safety is a task of everyone. The occupational hazards are related to: lack of administrative and financial recourses, no applicable occupational safety regulations or guidelines, lack of occupational safety means and no safety employees' awareness or training programs. To prevent occupational hazards the management must provide safety regulations, means and procedures with continues monitoring and follow up, employees training on how to deal with safety and employees motivation to increase their compliance and performance with safety issues. In this way we can improve the current occupational safety status." Medical Staff Doctor.

Regarding availability of prevention tools and occupational safety means and procedures at the complex according to participants perception the researcher found that the mean score of this domain was (2.74) out of 5 with an average of (49.38% to 62.17%) and a mean percent of (54.79%) which revealed a moderate level. As shown in Table 4.10 according to (62.17%) of the participants the electrical fillings are safe to use, (61.17%) felt that the used tools are sterilized well, while half of participants (50.23%) claimed that personal safety equipment (coats - gloves- muzzles -shoes – fire blankets - face mask) are available. Moreover (50.29%) stated that the preventive methods are sufficiently available. (51.54%) believed that the preventive methods of work accidents and injuries are available and (53.49%) agreed with that the preventive vaccines against infectious diseases are available. Meanwhile (56.34%) showed that the tools and devices are well-arranged and do not hinder work, (56.69%) claimed that the devices did not cause physical harm, (52.34%), (50.37%) agreed that the medical devices and equipment are available and operate safely and are maintained on a regular basis and there are written instructions for how to use devices and medical equipment accordingly.

Table 4.10: Distribution of respondents perception to the availability of prevention tools and occupational safety procedures in the complex (N=350)

Statement	Degree of Agreement					Mean (5)	Mean Score%
	Very Big	Big	Middle	Little	Very Little		
1. The complex is equipped with (lighting - ventilation – heating- furniture) which are suitable for your job							
No.	24	60	165	67	34	2.92	58.46
%	6.9	17.1	47.1	19.1	9.7		
2.There are posters and warning signs of occupational safety for the employees in a clear and visible places							
No.	10	34	122	136	48	2.49	49.83
%	2.9	9.7	34.9	38.9	13.7		
3. Personal safety equipments (coats - gloves- muzzles -shoes – fire blankets - face mask) are available							
No.	12	39	134	96	69	2.51	50.23
%	3.4	11.1	38.3	27.4	19.7		
4. Alarm systems are available in sufficient numbers in appropriate places within the complex							
No.	10	51	123	114	52	2.58	51.60
%	2.9	14.6	35.1	32.6	14.9		
5. Different fire extinguishers are available, fixed in place, visible to all persons and good to use and are regularly maintained							
No.	22	99	125	80	24	3.04	60.86
%	6.3	28.3	35.7	22.9	6.9		
6. Emergency exits are available in sufficient numbers and its locations are accessible							
No.	17	51	146	94	42	2.73	54.69
%	4.9	14.6	41.7	26.9	12		
7. Elevators are available and work properly							
No.	14	59	157	87	33	2.81	56.23
%	4	16.9	44.9	24.9	9.4		
8. The electrical fillings are safe to use							
No.	27	91	144	69	19	3.11	62.17
%	7.7	26	41.1	19.7	5.4		
9. Tools used are sterilized well							
No.	18	102	141	64	25	3.07	61.37
%	5.1	29.1	40.3	18.3	7.1		
10. Tools and devices are well-arranged and do not hinder work							
No.	9	69	153	87	32	2.82	56.34
%	2.6	19.7	43.7	24.9	9.1		
11. Tools and devices available do not cause physical harm.							
No.	19	59	149	91	32	2.83	56.69
%	5.4	16.9	42.6	26	9.1		
12. Preventive methods are sufficiently available							
No.	9	39	133	111	58	2.51	50.29
%	2.6	11.1	38	31.7	16.6		
13. Preventive vaccines against infectious diseases are available							
No.	14	55	137	91	53	2.67	53.49
%	4	15.7	39.1	26	15.1		
14. Preventive methods of work accidents and injuries are available							
No.	12	37	143	107	51	2.58	51.54
%	3.4	10.6	40.9	30.6	14.6		
15. Medical devices and equipment are available and operate safely and are maintained on a regular basis							
No.	11	47	141	99	52	2.62	52.34
%	3.1	13.4	40.3	28.3	14.9		
16. Written instructions for how to use devices and medical equipment are available							
No.	10	43	127	112	58	2.53	50.57
%	2.9	12.3	36.3	32	16.6		
Total		**Mean (5) = 2.74**			**Mean Score = 54.79%**		

In addition, (58.46%) reported that the complex is equipped with (lighting - ventilation – heating- furniture) which are suitable for their job, (60.86%) that different fire extinguishers are available in the sections, fixed in place visible to all persons, good to use and are regularly maintained by specialists, while (51.60%) showed that the alarm systems are available in sufficient numbers and in appropriate places within the complex and according to (49.83%) who agreed on that there are posters and warning signs of occupational safety for the employees in a clear and visible places

The findings revealed that the prevention tools and occupational safety procedures in the complex are available to some extent but not sufficient as required with the mean of 2.74 out of 5 and a mean percent at 54.79%. This is congruent with El Sheikh Khaleel, (2008) who found that the occupational safety means were not available enough at the MOH Gaza Strip hospitals (mean percent 64.87%). In addition, it is consistent with Al Khateeb (2006) who assessed availability of personal protection tools in West Bank hospitals and found lack of these tools. This may be due to insufficient attention from the top management to safety issues, lack of material and financial resources and the lack of occupational safety committees.

Qualitatively, it is clear that the majority of the interviewees agreed upon that there are insufficient occupational safety means and prevention tools at the complex. Moreover the key informants believed that the complex's top management exerted efforts to maintain occupational safety means and prevention tools but faced many constrains due to lack of resources.

"I think that the available safety prevention tools and methods at the complex are insufficient especially some certain personal protective equipment. This increases work hazards and accidents and affects negatively overall the occupational status. More efforts must be excreted for this to change by everyone." *Infection Control and Quality Development Officer*

"The occupational safety means and prevention tools at the complex are available to some extent but not enough. I believe that the availability of prevention tools and safety means will affect positively the safety occupational status. It is the employer's managerial responsibility." *Nursing Director.*

"The occupational safety means and prevention tools are limited. Providing enough occupational safety means and prevention tools is a managerial task. Their availability will help in the improvement of safety status in the work place."Administrative Director.

"There is a lack of occupational safety means at the complex which leads to more work accidents. Top management must provide suitable safety tools to promote the safety status." Staff Doctor.

"The current safety means and procedures are not enough present. The complex top management should take more attention to safety issues. Lack of safety means and tools increase work accidents." Maintenance Safety Officer.

In regard to employee's compliance and commitment to use the available occupational safety prevention tools, means and procedures at the complex as Table 4.11 shows that, the mean score of this sub domain was 3.56 out of 5 with an average of items (61.03% to 76.46%) and a mean percent of 71.13% which revealed a good level. The vast majority of participants stated that they always wash their hands and disinfect them in a safe way and always put on the work uniform (76.46% and 76.17% respectively), (75.20%) reported that they always use sterilized instruments and (73.03%) reported that they always dispose medical wastes safely. According to (70.23%) that they always follow occupational safety rules and regulations, (70.69%) always use the methods of prevention and occupational safety procedures at the complex because they protect them against the risks of diseases, (66.23%) always use these methods of prevention because of the safety rules and regulations while (61.03%) always use these methods of prevention and safety procedures because of the disciplinary actions. The findings revealed strong compliance and commitment level of the HCWs to use the available prevention tools and follow the occupational safety methods and procedures despite their lack as described above with a mean percent of (71.13%) which is to some extent congruent with El Sheikh Khaleel (2008), how found a moderate level of employees compliance to the use of protection means at the MOH Gaza hospitals(mean percent (57.21%). In addition it is consistent with Lugah V, et al, (2010) who found that the participants were most knowledgeable about personal protective equipment (PPE) with a mean score of (72%.) This result of significant employees compliance mainly related to fact that they believe that the use of OS protection

tools and procedures prevent them, their families and patients from work hazards, accidents, injuries and diseases.

Table 4.11: Distribution of respondents to employees compliance and commitment to use the prevention means and occupational safety procedures at the complex (N=350)

Statement	Degree of Agreement					Mean (5)	Mean Score%
	Very Big	Big	Middle	Little	Very Little		
1. I always put on the work uniform							
No.	127	98	77	27	21	3.81	76.17
%	36.3	28	22	7.7	6		
2. I always wash my hands and disinfect them in a safe way							
No.	109	122	78	30	11	3.82	76.46
%	31.1	34.9	22.3	8.6	3.1		
3. I always use sterilized instruments							
No.	92	129	93	25	11	3.76	75.20
%	26.3	36.9	26.6	7.1	3.1		
4. I always dispose medical wastes safe							
No.	84	125	95	27	19	3.65	73.03
%	24	35.7	27.1	7.7	5.4		
5. I always follow occupational safety rules and regulations							
No.	57	126	118	37	12	3.51	70.23
%	16.3	36	33.7	10.6	3.4		
6. I always use the methods of prevention and occupational safety procedures in the complex because they protect against the risks of disease							
No.	62	121	122	32	13	3.53	70.69
%	17.7	34.6	34.9	9.1	3.7		
7. I always use the methods of prevention and occupational safety procedures in the complex because the mandatory rules and regulations							
No.	47	108	125	47	23	3.31	66.23
%	13.4	30.9	35.7	13.4	6.6		
8. I always use the methods of prevention and occupational safety procedures in the complex because the disciplinary actions							
No.	39	89	111	73	38	3.05	61.03
%	11.1	25.4	31.7	20.9	10.9		
Total		**Mean (5) = 3.56**			**Mean Score = 71.13%**		

By analyzing the qualitative data there was consensus among the key informants upon strong employee's compliance to prevention tools and safety means use at the complex ranged from 70-80% especially at closed workplaces such as the intensive care unit, emergency departments and operation rooms. At the same time, they related the high importance of employee's compliance to organizational success. They agreed that the strong employee's compliance mainly related to their fear and attention of workplace hazards and related diseases.

"I believe that employee's compliance is very important in every workplace, without it any organization loses a lot. The management must know how to motivate their employees to comply." Nursing Director.

"If there is no employee's compliance to guidelines and protocols the organization will go to destruction. The successful organization must deal with their employees as partners. The management must create the compliance by moral and financial incentives." Infection Control and Quality Development Officer.

"Employees compliance to regulations and procedures is not only the employee's responsibility but also a managerial task. There is no success without good compliance." Administrative Director.

Regarding extent of staff training on use of occupational safety prevention means and procedures at the complex as shown in Table 4.12 the total mean score of this domain was 2.16 out of 5 with an average ranging between (39.71% to 48.46%) and a mean percent of (43.17%) which is very low. About 48.46% of the participants claimed that there is a specialized department or committee for occupational safety in the complex, (45.14%) stated that MOH provides training courses for occupational safety in the complex and (44%) that MOL, CD provides training courses for occupational safety in the complex. Additionally, (41.26%) reported that there is training in ways of dealing with occupational safety devices in the complex and only (39.71%) that received training on evacuation and emergency plan in the complex. Regarding methods of training (43.37%) agreed that there is training on the use of means of prevention and occupational safety procedures through pamphlets and lectures, (42.63%) said that there is training through pamphlets and lectures. Moreover (42.11%) stated that they participate in local seminars and conferences and 41.83% claimed that they participate in international seminars and conferences on occupational safety. The findings revealed a significant lack of OS training programs (mean percent 43.17%) which is consistent with Hamada, (2014) in his study concluded that training is not provided adequately on patient safety despite its great values. In addition to Skipa F. (2011) who found that the management has no definite time schedules for safety training. Poor OS training programs reflects negatively on employee's performance, satisfaction and productivity while the investment in training programs enriches the employee's knowledge, attitude, practices and compliance to the use of OS tools and procedures which enable them to prevent workplace accidents, injuries, hazards

and diseases and to save their health, families, patients, organizations and community. Lugah V, et al, (2010) stated that training enables workers not only to perform their jobs, but also to protect their lives and health, as well as that of their co-workers. This implies from the key health care managers to make more efforts on OS training programs implementation at all levels with aim to improve HCWs working conditions, sustain safe work environment, and inculcating a healthy and safety work culture.

Table 4.12: Distribution of respondents to the extent of staff training on the use of prevention means and occupational safety procedures at the complex (N=350)

Statement	Degree of Agreement					Mean (5)	Mean Score%
	Very Big	Big	Middle	Little	Very Little		
1.There is a specialized department, committee or team for occupational safety in the complex							
No.	12	38	119	98	83	2.42	48.46
%	3.4	10.9	34	28	23.7		
2.The internal authorities (MOH) provides training courses for occupational safety in the complex							
No.	10	25	111	103	101	2.26	45.14
%	2.9	7.1	31.7	29.4	28.9		
3.The external authorities (MOL, CD, or IOs) provides training courses for occupational safety in the complex							
No.	12	20	96	120	102	2.2	44
%	3.4	5.7	27.4	34.3	29.1		
4.Employees receive training on evacuation and emergency plan in the complex							
No.	12	17	61	124	136	1.99	39.71
%	3.4	4.9	17.4	35.4	38.9		
5.There is a training on ways of dealing with occupational safety devices in complex							
No.	9	18	75	132	116	2.06	41.26
%	2.6	5.1	21.4	37.7	33.1		
6.There is a training on the use of means of prevention and occupational safety procedures through pamphlets and lectures							
No.	11	22	84	131	102	2.17	43.37
%	3.1	6.3	24	37.4	29.1		
7.Training in the use of prevention means and occupational safety procedures through practical methods and workshops							
No.	15	12	85	130	108	2.13	42.63
%	4.3	3.4	24.3	37.1	30.9		
8.The employees participate in local seminars and conferences on occupational safety (MOL, CD, NGOs)							
No.	9	19	85	124	113	2.11	42.11
%	2.6	5.4	24.3	35.4	32.3		
9.The employees participate in international seminars and conferences on occupational safety (WHO, ILO)							
No.	8	18	92	112	120	2.09	41.83
%	2.3	5.1	26.3	32	34.3		
Total		**Mean (5) = 2.16**			**Mean Score = 43.17%**		

Qualitatively, the key informants agreed with the fact that there are no suitable occupational safety training programs from the MOH or other responsible authorities except for the infection control office efforts. There was a consensus among the interviewees about the high importance and need of safety training programs to build a safety culture.

"Training is an essential task for organizational goals achievement. It is very important incentive. Continuous training will improve the employees' skills, performance and productivity." Nursing Director.

"Training is a main need for the employees, without it, they cannot comply with guidelines and protocols. It creates employees knowledge, attitudes and practices, prevent work accidents and diseases." Infection Control and Quality Development Officer.

"If the organization attempts to succeed must provide training. It is important for both the employees and the organization. It prevents the employees from workplace hazards and also protects the organization from costs." Administrative Director.

"Trained employees do better. They know well what to do. Their practices and attitudes are accumulate knowledge and their performance will be better." Staff Doctor.

"Without training on safety means there is no safety. It is an organization responsibility. The management must provide safety training programs to promote the current safety status." Maintenance Safety Officer.

4.3 Observational checklist analysis:

The observational checklist, according to the Occupational Safety and Health Administration (OSHA) standards was applied at the surgical building, specialized surgery building and obstetric building including all their departments in addition to the central sterilization department, the histopathology department and central oxygen station by both the infection control and quality development officer and the researcher with the aim to examine to which extent current safety standards meet OSHA standards. It must be mentioned that the medical hospital during this stage of data collection was completely destroyed for rebuilding. Medical departments were transferred to the special surgery building and two departments to Al-Ranteesi hospital (the oncology & hematology departments).

The results showed that the OSHA standards according to the observational checklist were met to some extent with different degrees in the three buildings. Regarding the current available occupational safety means and measurements at the complex three buildings meet the PPE standards with a very high scores (100%), the EAP and FPP standards were met with a very low scores (36.3%) in each building, meanwhile they did not meet the

OSHA standards regarding hazard communication, formaldehyde safety plan, ergonomics programs and compressed gas cylinders. In other hand the special surgery building met the OSHA standards with good scores regarding electrical safety (88%), walking and working surfaces (75%), exit routes (75%) and radiation safety (71.4%) as illustrated in (Annex 8).

Furthermore the surgery building met the OSHA standards with a good scores regarding electrical safety (77%), walking and working surfaces (75%), a moderate scores (58%) regarding exit routes, while it had a low scores (42.8%) regarding radiation safety.

Meanwhile, the obstetric building met the OSHA standards with good scores (77%) regarding electrical safety, a moderate scores (50%) regarding walking and working surfaces, while a very low scores regarding the exit routes.

Regarding exit routes the findings revealed that the OSHA checklist standards are met at the surgical building with moderate level (58%), at the special surgical building with good level up to (75%), while with poor level (33.3%) at the obstetric building as the following:
At the surgical building the exit routes are available, clear with obstruction of some exit routes. The route dimensions are compliant, the two exit routes are far away from each other with clear visible guiding signs and easily differentiated exit door.

On the other hand, the exit routes are not well illuminated, not regularly maintained to make sure that there are no obstructions. Exit discharge is not an open space and exit doors are locked and are not side hinged and opens to the inside of the exit route.
At the special surgical building, the exit routes are available, clear; with compliant dimensions, without obstruction. Two exit routes are far away from each other with clearly visible guiding signs, well illuminated and with easily differentiated exit door. However, the exit discharge is not an open space and the exit door is locked and is not side hinged and opens to the inside of the exit route. At the obstetric building, the exit routes are available, clear with obstruction at some exit routes, the route dimensions are not compliant, and two exit routes are far away from each other without clear visible guiding signs. Although, the exit routes are not well illuminated, not regularly maintained to make sure there are no obstruction, exit discharge is not an open space and the exit door is easily differentiated but is locked and not side hinged and opens to inside of the exit route.

In regards to Emergency Action Plan (EAP) and Fire Prevention Plan (FPP) the findings revealed that the OSHA checklist standards at the three buildings are met with poor level

(36.36%) for each building as follows: The alarm system is available and functional, there are available portable fire extinguishers which are properly mounted and distributed. On the other hand, there is no fire brigade, no monthly visual inspection, no annual maintenance of fire extinguishers, no available copy of the emergency action plan for all employees, no available copy of fire prevention plan accessible in the workplace, no annual review and update of the plans and no regular training for employees to apply emergency actions.

In addition, regarding hazards communication; the findings revealed that the OSHA checklist standards are not met at the three buildings as the following: The communication program is not available, the hazardous materials are not properly labeled, the Material Safety Data Sheets (MSDS) for all hazardous chemicals in the work place are not available with the lack of review and updating of MSDS. Spill response is also not included in the communication program

Meanwhile, regarding personal protective equipment (PPE); the findings revealed that the OSHA checklist standards at the three buildings are met with excellent level as following: PPE (gloves – goggles - aprons -masks -footwear) are available without cost and are maintained. They are used by at risk employees, avoided if damaged and there is training on how to use them.

Furthermore, in regard to walking and working surfaces the OSHA checklist standards are met at the surgery and special surgery building with good level (75%) for each, while with moderate level (50%) at the obstetric building as in the following: The stairs are installed between 30 and 50 degrees on the horizontal level and have a uniform riser height and tread depth requirements are met at the surgical and the special surgery buildings, while they are not met at the obstetric building. The height of the stair railings is between 30 and 34 inches (76-86cm), the fixed stairs are not less than 22 inches wide (55.88cm). The slip resistant treads and vertical clearance above any stairs is at least 7 feet (213.36cm) requirements are met at the three buildings, while portable ladders are not available at the three buildings.

Regarding electricity safety according to the OSHA checklist; standards are met at the surgery and the obstetric buildings with good level (77.7%) for each and at the special surgery building with very good level (88.8%) as follows: The electrical control rooms are adequately illuminated, the electrical boxes are labeled with voltage, the minimum height

in the electrical control room is 6 feet (182.88cm), 3 inches (7.62cm), the entrance to rooms containing live parts are marked with warning signs and have restricted access, the panel boards are kept in a dry area with a dead front, the switch keys in the panel boards are marked "ON" and "OFF" at the three buildings. While all boxes do not have covers except for those at the special surgery building . The flexible cords are not used according to the OSHA standards at the three buildings.

Moreover, regarding radiation safety; according to the OSHA checklist, standards are met at the radiology departments, at the surgery and the special surgery buildings with good level (71.4%) at the special surgery building and 42.8% at the surgery building as the following:

The personal protective equipment, as lead aprons, are available and properly stored, hazard signs on the radiology doors are present are met at the both buildings. The standard operating procedures (SPOs) are available and workers trained on them and the workers in the radiology department have personal dosimeters are not met at the surgery building, while there is no environmental monitoring of radiation leaks and pregnant workers do not have a leave with full payment in the both buildings.

Meanwhile, in regard to the formaldehyde safety plan according to the OSHA checklist, the standards are not met as shown in the following: The formaldehyde safety plan is not available, there is no environmental monitoring, no records for monitoring levels, no personal dosimeters, the PPE for formaldehyde are not available. There is also no workers' training on the use of PPE for formaldehyde, no medical surveillance program for workers exposed to formaldehyde, at or above, action level. In addition, there is no "danger" sign at areas where airborne formaldehyde levels exceed Time Weighted Average (TWA) and Short Time Exposure Level (STEL). There is also no spill response for formaldehyde.

Additionally regarding compressed gas cylinders according to the OSHA checklist; the standards are not met as illustrated in the following: The compressed gas cylinders are not labeled, not stored properly (i.e. not chained, upright, cap, safe place), not moved properly (i.e. dragged and rolled) with no regular inspection. In addition, the employer is not providing a complete hazard communication plan, the facility does not provide a record for work related injuries and the employees cannot access this record.

As well as regarding ergonomics' programs according to the OSHA checklist; standards are not met at the same time as that the complex does not apply ergonomics according to the OSHA standards.

The findings confirm that the current OS means and measurements at the complex are not sufficient with deficiencies in the provision of some instruments, equipment and devices that must be provided. This indicates a strong need for their provision, development and improvement to meet with international safety standards to achieve safety working environment.

4.4 Inferential analysis:

In this section the researcher discusses the differences in the overall occupational status in reference to independent variables. The independent variables were socio-demographic and occupational characteristic variables.

4.4.1 Differences in overall occupational safety scores in reference to sociodemographic characteristics

To examine the differences in perception about the overall occupational safety status in reference to gender, a t-test was conducted. Table 4.14 shows that male group elicited higher mean scores than females about the overall occupational safety status but the differences did not reach the significant level (p=0.458). This implies that male and female HCWs have similar perceptions about occupational safety. Such finding is consistent with Jouda, (2006) who found no statistical significance in occupational awareness and gender (p=0.539). This finding revealed that gender does not affect the occupational safety perception.

This could be attributed to the fact that male and female HCWs have the same working conditions at the same work environment.

Additionally, to examine differences in perceptions about overall occupational status in reference to age of the participants, an ANOVA test was conducted. The test shows high statistical significant differences between the age groups in perceiving the overall occupational safety status (p=0.01), as the respondents with younger age perceive the occupational safety more than those of older age (Table 4.14). An LSD test Annex (14) shows that participants from the age of 20 to 30 years had higher mean scores than the

participants of the age of 31 to 40 with statistical significant differences (P= 0.008). Also participants from the age of 20 to 30 had higher mean scores than the participants who are 41 to 50 years old with strong statistical significant differences (p=0.000). Furthermore, there is statistically significant differences between participants aged 51 years and above and those aged 41 to 50 in favor towards the older group (p=0.034). This implies that the different age groups have different perceptions which affect the overall occupational safety status. The findings could be explained through the fact that the majority of the HCWs working at the complex are younger (78.5%) aged up to 40 years.

Table 4.14: Differences in the overall occupational safety scores in reference to socio-demographic characteristics

Independent Variables		N	Mean	SD	Factor	Value	Sig
Gender	Male	241	2.80	.46	t	0.79	0.458
	Female	109	2.76	.49			
Age group	20 to 30	145	2.8828	.46306	F	5.68	0.01
	31 to 40	130	2.7341	.45554			
	41 to 50	56	2.6096	.46045			
	51 and above	19	2.8687	.43425			
Education level	Secondary education or lower	30	2.9222	.51583	F	3.91	0.009
	Diploma	86	2.8946	.51830			
	Bachelor	166	2.7328	.41345			
	Master or higher	68	2.7035	.47358			
Marital status	Single	86	2.9080	.45547	t	2.88	0.004
	Married	264	2.7424	.46502			

Moreover, to examine the differences in perception about the overall occupational safety status in reference to marital status test was used. Table 4.14 shows that single HCWs had higher mean scores than the married ones' about overall occupational safety status with a high statistical significant level (p=0.004). This indicates that the HCWs have different perceptions about occupational safety and marital status affects the occupational safety

perception. This is different with Hamada, (2014) who found no statistically significant difference in overall safety scores in reference to marital status (p=0.973).

Furthermore, to examine the differences in perceptions about the overall occupational status in reference to educational level of the participants, an ANOVA test was conducted. The test shows highly statistical significant differences between different groups in perceiving the overall occupational safety status (p= 0.009), as the respondents with lower educational level perceive the occupational safety more than those of higher education (Table 4.14). An LSD test, Annex (14) shows the statistical significant deference between participants with secondary education or less and those holding a bachelor's degree in favor towards those of secondary school education (p=0.039). There was a statistical significant deference between participants with secondary education or less and those holding master's degrees or higher in favor towards those of secondary school education (p=0.031). Furthermore the test shows a statistical significant deference between participants holding diploma degrees and those holding bachelor's degrees in favor towards those holding diploma degrees (p=0.009). There was a statistical significant deference between participants with diploma and those holding master's degrees or higher in favor towards those of diploma degrees (p=0.011), while no significant deference was shown between other groups. This is consistent with Jouda, (2006) who found that there was strong statistical significance between the educational level and the ergonomically knowledge and practices (p=0.002). The findings revealed that the educational level positively affects the overall occupational safety status and could be explained through the fact that education and knowledge of HCWs will improve the occupational safety status.

4.4.2 Differences in overall occupational safety scores in reference to work-related characteristics

To examine differences in perceptions about the overall status of occupational safety in reference to work place, an ANOVA test was conducted. The test shows highly statistical significance differences between the respondents working in the different work places at the complex in perceiving the overall occupational safety status (p= 0.000). An LSD test, Annex (14) showed that there were statistical significant differences in perceptions between the participants from the surgical hospital, OPD, complex administration and other workplaces in favor towards the surgical hospital (P= 0.013, 0.01 respectively). Also there was statistical significant differences in perceptions between the participants from the

internal medicine hospital and OPD, complex administration and other workplaces in favor towards the internal medicine hospital (p=0.03, 0.00 respectively).

Table 4.15: Differences in the overall occupational safety scores in reference to work-related characteristics

Independent Variables		N	Mean	SD	Factor	Value	Sig
Work place	Surgical hospital	138	2.8234	.49685	F	5.217	0.000
	Internal Medicine hospital	68	2.8934	.49570			
	Genecology & Obstetric hospital	65	2.8199	.39559			
	Outpatient clinic and complex administration	46	2.6286	.40929			
	Other work places	33	2.5301	.35776			
Nature of work	Physician	93	2.7480	.47295	F	4.599	0.001
	Nurse	115	2.9223	.43405			
	Paramedical	34	2.6537	.44010			
	Administrative services	54	2.6566	.48503			
	Other services	54	2.7622	.46834			
Years of experience	1 and less than 5	106	2.8670	.51200	F	2.519	0.058
	5 and less than 10	123	2.7925	.44399			
	10 and less than 15	73	2.7145	.44748			
	15 years and more	48	2.6780	.42928			
Weekly Working Hours	35 hours	184	2.7738	.47053	t	0.391	0.696
	More than 35 hours	166	2.7934	.46537			
Daily work arrangement	Morning	184	2.7166	.48045	t	2.83	0.005
	Shifts (M.E.N.)	166	2.8568	.44261			

Furthermore, there were statistical significant differences in perceptions between the participants from the gynecological hospital and OPD, complex administration and other

workplaces in favor towards the gynecological hospital (p=0.030, 0.003) while there was on differences between other groups. The results show that the respondents working in the surgical, internal medicine and gynecological hospitals perceive the occupational safety more than the respondents working in the OPD, complex administration and other workplaces (Table 4.15). This implies that the difference at the different complex workplaces affects the perception of occupational safety. Such finding was consistent with El Sagga (2014) study; which revealed a statistical significant difference in the overall safety scores in reference to hospitals' departments (p=0.027). The possible explanation of this result of the study could be attributed to the different HCWs' specific tasks and to the different workplaces hazards

A one-way ANOVA test was used to examine the differences in perceptions about the overall occupational safety in reference to nature of work, Table 4.15 shows high statistically significant differences between the different professions at the complex in reference to the overall occupational safety status (P=0.001). An LSD test, Annex (14) showed that there was a statistical significant difference in perceptions between the nurses and the other different professions, namely; Physicians, paramedics, administrators and other services in favor towards nurses (p=0007, 0.002, 0.00 and 0.035 respectively) while there was no significant deference between the other professions. This is different from Jouda, (2006) findings, who found that there was no statistical significance between ergonomically standards` application and the nature of work (p=0222). This implies that the perception difference of the different professions affects the occupational safety. The possible explanation of this study result could be attributed to the fact that the nurses accounted for 32.9% of the total of study participants with different nursing tasks. They provide medical care frequently and closely to the patients. That makes them have more attention to workplace hazards while other remaining professions have the same level of awareness compared to each other.

Furthermore, to examine differences in perceptions about the overall occupational safety status in reference to years of experience of the participants, an ANOVA test was conducted. The test shows high statistical significant differences between the groups regarding years of experience in perceiving the overall occupational safety status (p= 0.058), as the respondents with less years of experience perceive the occupational safety better than those with longer work experience, (Table 4.15). The LSD test, Annex (14) shows that participants with less than 5 years of experience had higher mean scores than

the participants who had 10 or less than 15 years of experience and those who had 15 or more years of experience with statistical significant differences (P= 0.032, 0.020 respectively). While, there is no statistically significant differences between the other groups. The results show that the number of experience years affects the occupational safety perception. This is consistent with Ahmed H. (2015) findings, who found a strong statistical significant difference of nurses overall delegation perception in reference to the number of experience years (p=0.000). Such findings could be explained through the fact that less experienced HCWs group are new employees, not oriented well to occupational safety. It also could be explained with that those HCWs might not have been through occupational safety training programs or occupational safety orientation programs. That resulted because the majority of the more experienced group left their work due to the internal split of 2007.

To examine the differences in perception of the overall occupational safety status in reference to the daily work arrangement; an independent t-test was conducted. Table 4.15 shows that the participants who work shifts (morning, evening and night) had higher mean scores than participants who work only morning shifts with high statistical significant difference (p=0005). This implies that different working shifts affect the occupational safety perception. Such finding could be explained by the fact that working in shifts increases work stress, tension, exposure to accidents, hazards, emotional and social problems.

An-independent t-test was conducted to examine the differences in perception about the overall occupational safety status in reference to the weekly working hours. Table 4.15 shows that the participants who work more than 35 hours weekly elicited higher mean scores than those working up to 35 hours, but these variations were not statistically significant (p=0.391). This implies that weekly working hours do not affect the perception of the overall occupational status which revealed that HCWs have a similar perception towards occupational safety regardless of weekly working hours.

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Chapter 5

Conclusion and Recommendation

5.1 Conclusion

Occupational safety is a cornerstone of any organization to protect their employees and clients from workplace hazards, to sustain safe work environment and achieve its goals. In order to provide better health care services, healthcare workers must be work safely without risks and hazards to provide exceptional services. The study is the first aiming to assess the occupational safety status at Al-Shifa medical complex to explore the reality of occupational safety and reflect employee's perceptions about this very important issue. This study might provide guidance to the health decision makers in order to improve the safety at healthcare facilities workplaces and health care quality development to the best of patients' interests.

The study utilized a descriptive, analytical cross sectional design with a triangulated approach. A proportional stratified systematic randomized sampling was used. Both self-administered questionnaire and observational checklist according to OSHA standards were used as a data collection tools for quantitative part. Also, a key informant interviews were used for the qualitative part of data. High response rate of 94.5% ensured high validity of the study findings. Other measures such as the experts' validation and piloting were used to assure the questionnaire validity. The reliability reached the accepted level, as the Cronbach Alpha coefficient was 0.93.

The total number of the study population was 2037 and the study sample was 370 with highly accepted response rate (94.5%). In consistency with the general gender distribution in hospitals 68.9% of respondents were male and 75.4% were married. A promising demographic were found as 78.5% of respondents were aged up to 40 years and about two thirds were highly educated (holding Bachelor, master degree or above). Nurses had the main portion of the sample 32.9%, medical professions had 26.6%, administrative and other services had the same portion of 15.4% for each and the least group was paramedics consist 9.7%. More than two thirds of respondents were working at main three hospitals; meanwhile a considerable portion had long work experience as two thirds had work experience up to 10 years.

The study results revealed that the overall status of occupational safety has a moderate level of (55.6%), reflecting a moderate perception of sampled healthcare workers towards the status of occupational safety which considered as an important conducive factor for promotion and improvement of occupational safety.

The study results showed that occupational safety affected by a variety of organizational factors. About half of participants had negative perception towards top management commitment and support of occupational safety issues because its lack as well as they believed that it is the core element and the heart of the organization management system to success. About half of participants reported lack of follow up and monitoring of occupational safety issues by external regulatory and oversight authorities such as ministry of labor and workers association.

About half of participants reported that no clear, concise, written and applicable specific occupational safety policy, guidelines, regulations and protocols in addition to lack of occupational safety management system, specific safety committees, work risk assessment, effective medical record for work accidents, employees involvement, job description and disciplinary actions against non committed workers which considered as an important factors that play key roles witch enhance occupational safety status.

Findings showed that the majority of respondents had strongly positive attitudes, practices and commitment towards occupational safety; most of them have the desire to provide health care services at safe environment. These responses could reflect the strong willingness and readiness of employees to get more important tasks throughout their workplace to develop and grow their profession in particular their safety skills. As well as the majority of respondents showed strong compliance and commitment towards practicing and using available prevention tools and occupational safety means.

less than half of the respondents claimed that they were received training on occupational safety means, tools and procedures use which reflects negatively on their performance, satisfaction and productivity.

The findings revealed that about half of participants were working more than 35 hours weekly. About (21.7%) of participants were taken up to 6 times sick leaves monthly related to their work tasks and about one quarter (24.9%) were exposed up to 6 times to work accidents during their experience years. In other hand less than half of participants claimed

that the top management complies with laws that include the principle of compensation and insurance for workers in the event of exposure to accidents or work injuries.

About two third of participants reported that they were exposed to different types of workplace risks and hazards during their daily work as well as the majority of respondents 83.54% work on holidays, three quarters directly deal with patients and contact persons and stand for long time, two third of them work at many shifts and use sharp tools and instruments. Furthermore, the findings revealed that the major workplace hazards and related diseases to witch respondent exposed to were: (1) infectious respiratory and skin transmitted diseases as reported about half of participants (49.7%) especially between nurses 21.4% and medical professions 13.7%, (2) musculoskeletal disorders as mentioned about one third of respondents (30.8) especially between nurses 10.6% and medical professions 6.3%, (3) needle stick injurers and blood borne transmitted diseases according to more than one quarter of respondents (28.8%) especially between nurses 14.2% and medical professions 5.7%, (4) work overload and violence according to about one quarter (24.4%), of them 10.8% were nurses and 6.2% medical professions, (5) varicose veins were about 12%, (6) electrical hazards were 10%, (7) carcinogenic hazards were 5.7% mainly affected medical professions with about 2.9% and (8) vision problems were 4.2% mainly affected administrators with 2.8%. This implies from everybody at the all levels in the health care facilities to concern and pay more attention to safety issues.

The study results revealed that the main attributed factors beyond these work-related hazards and diseases among the healthcare workers were: (1) The lack of a specialized effective department or committee for occupational safety in the complex; (2) The lack of prevention tools and occupational safety measures in the complex; (3) Scarcity of staff training courses on the use of the means of prevention and occupational safety procedures at the complex; (4) lack of compliance to OS laws rules and regulations because they are not applicable; (5) The workers don't use protection tools and don't follow occupational safety procedures because of their lack as claimed (67.54%) and (6) The lack of knowledge among workers about prevention means and occupational safety procedures at the complex. This is highly indicated from everyone to work on, address and improve these factors to achieve safe workplace environment.

The results of the OSHA observational checklist agreed on that, the current OS means and measurements at the complex are available to some extent but not sufficient and not applicable as required. They were met to some extent with different degrees in the three

buildings as well as the specialized surgery building was elicited the better status, followed by the surgery building, while the obstetric building had the worst status. The current available occupational safety means and measurements at the complex three buildings were met the PPE standards with a very high scores (100%), the EAP and FPP standards were met with a very low scores (36.3%) for each building, meanwhile they did not met at all the OSHA standards regarding formaldehyde safety plan, ergonomics programs and compressed gas cylinders. This indicates highly need of their provision, development, improvement and standardization to comply with the international safety standards, as well as to help the employees to protect themselves, their patients and visitors from the occupational hazards and diseases with aim to achieve safety working environment.

The findings showed that respondents with younger age and fewer years of experience had higher occupational safety scores than their counterparts of older age and longer experience with statistically significant differences. Also, findings showed variations in the overall perception of occupational safety in reference to workplace towards surgical hospital departments. In addition to that, the nurses had higher mean scores than other professional categories with statistically significant differences. Furthermore, the respondents with lower educational level perceive occupational safety more than those with higher ones with statistically significant differences. Moreover, the single (not married) respondents and those who work shifts (M.E.N.) had higher occupational safety scores than married respondents and those who work only morning shifts with statistically significant differences. On the other hand, the results showed that no statistical differences were found in overall occupational safety status perceptions in reference to age and weekly working hours. In contrary, no statistically significant differences in relation to gender and weekly working hours.

The researcher conducted in-depth interviews with five health key informants. Semi structural questions were used to aid the researcher to reveal information and responses that were not covered by the questionnaire. The interviewees reported the influencing factors of occupational safety similarly as elicited by the quantitative data.

5.2 Recommendations

Based on the study finding the researcher would provide useful recommendations as outlined below. Health strategic planners, policy and decision makers, health facilities

managers, professionals and researchers need to consider these recommendations and intensively work to address them.

5.2.1 General recommendations:

1. Gradually, establishing of occupational safety and health management system at the health facilities.
2. Adoption of occupational safety and health standards at the health care facilities to comply with international safety standards.
3. The national authorities must take their roles for safety regulation, monitoring and inspection at the health facilities.

5.2.2 Specific recommendations:

6 Establishment and activation of occupational safety and health units, departments, committees and teams at health facilities as soon as possible.

7 Formulation and application of safety policies, protocols, guidelines, regulations and evidence based practices as mandatory to guarantee safety practices and commitment at all levels of health facilities.

8 Provision of training programs and courses for healthcare workers and managers about the occupational safety concepts, principles, processes and management.

9 Encourage staff participation and involvement in the safety planning process as this may enhance staff commitment.

10 Activation and development of medical record and accident reporting systems at the health facilities.

11 Activation of laws that include the principle of compensation and insurance for workers in the event of exposure to accidents or work injuries.

5.3 Recommendations for further studies:

The researcher would recommend conducting further research studies covering the following areas:

1. Evaluation of occupational safety and health management system at health facilities.
2. In depth research for integrating occupational and patient safety.
3. Specific studies for each of occupational safety domains separately especially the weakest domains and how to improve it.
4. The effectiveness of occupational safety management system on health facilities.
5. Action research on how to improve safety status at health facilities
6. The relationships between of effective occupational safety management system and employees performance
7. Occupational safety culture among health care managers.
8. Evaluation of workplace hazards and accidents at health facilities.

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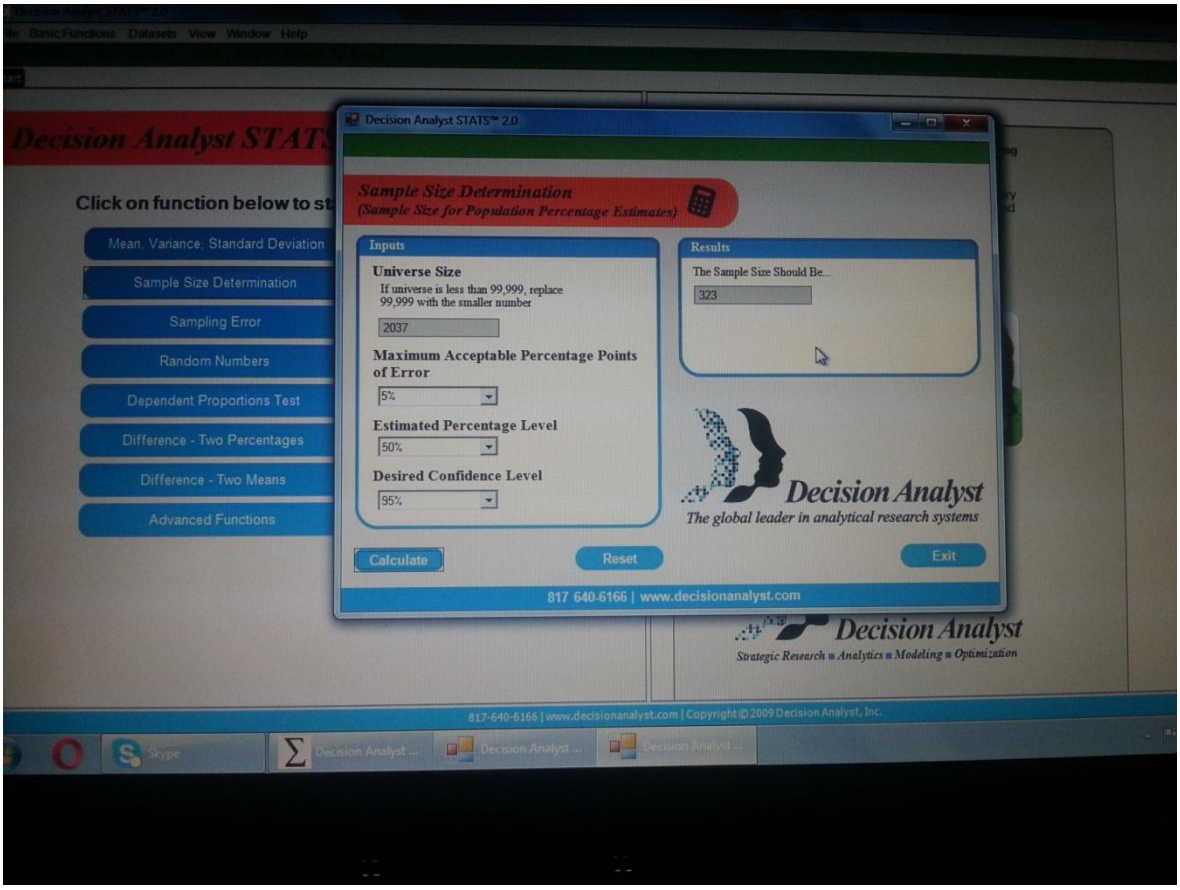
Annexes

Annex (1): Location Map of Gaza Strip

Al Seraj.net

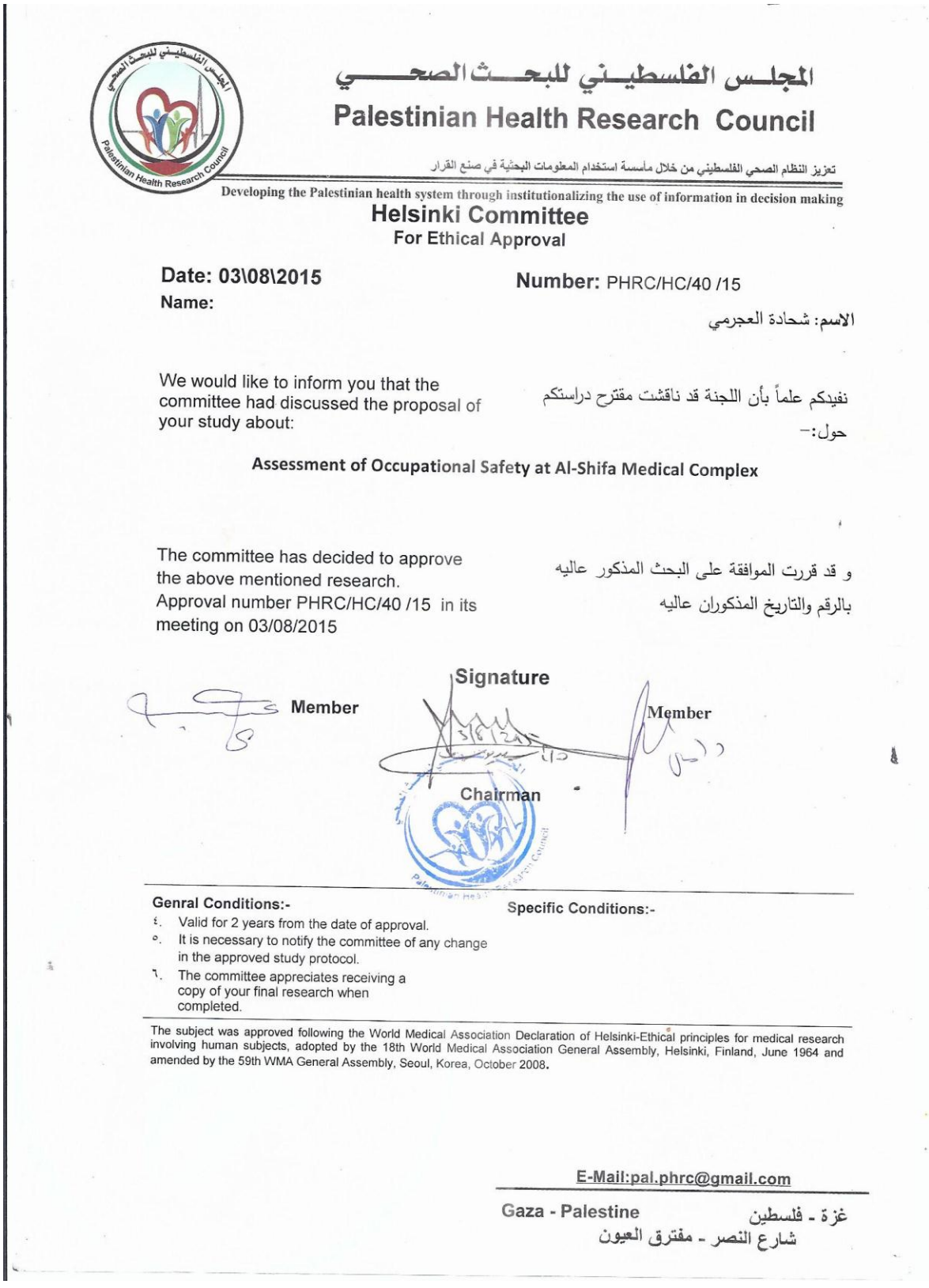
Annex (2): Sample size calculation



Annex (3): **Sample size and percentage**

Population Category	Total Target Population	Proportionate percentage	Target Sample	Respondent Sample
Nurses	670	32.9%	121	115
Medical Professions	570	28%	104	93
Administrative Services	302	14.8%	55	54
Paramedics	189	9.3%	34	34
Other Services	306	15%	56	54
Total	**2037**	**100%**	**370**	**350**

Annex (4): Ethical approval from Helsinki committee –Gaza governorate



المجلس الفلسطيني للبحث الصحي

Palestinian Health Research Council

تعزيز النظام الصحي الفلسطيني من خلال مأسسة استخدام المعلومات البحثية في صنع القرار

Developing the Palestinian health system through institutionalizing the use of information in decision making

Helsinki Committee

For Ethical Approval

Date: 03\08\2015

Number: PHRC/HC/40 /15

Name:

الاسم: شحادة العجرمي

We would like to inform you that the committee had discussed the proposal of your study about:

نفيدكم علماً بأن اللجنة قد ناقشت مقترح دراستكم حول:-

Assessment of Occupational Safety at Al-Shifa Medical Complex

The committee has decided to approve the above mentioned research. Approval number PHRC/HC/40 /15 in its meeting on 03/08/2015

و قد قررت الموافقة على البحث المذكور عاليه بالرقم والتاريخ المذكوران عاليه

Signature

Member

Member

Chairman

Genral Conditions:-

١. Valid for 2 years from the date of approval.
٢. It is necessary to notify the committee of any change in the approved study protocol.
٣. The committee appreciates receiving a copy of your final research when completed.

Specific Conditions:-

The subject was approved following the World Medical Association Declaration of Helsinki-Ethical principles for medical research involving human subjects, adopted by the 18th World Medical Association General Assembly, Helsinki, Finland, June 1964 and amended by the 59th WMA General Assembly, Seoul, Korea, October 2008.

E-Mail:pal.phrc@gmail.com

Gaza - Palestine

غزة - فلسطين

شارع النصر - مفترق العيون

Annex (5): Administrative approval from MOH

Al-Quds University
Jerusalem
School of Public Health

جامعة القدس
القدس
كلية الصحة العامة

التاريخ:2015/10/24
الرقم/: ك ص ع –غ/ 2015/110

حضرة الدكتور ناصر أبو شعبان المحترم
مدير عام تنمية القوى البشرية–وزارة الصحة

تحية طيبة وبعد،،،

الموضوع:تسهيل مهمة الطالب شحادة العجرمي

يقوم الطالب المذكور أعلاه بإجراء بحث بعنوان:

Assessment of Occupational Safety at Al-Shifa Medical Complex

كمتطلب للحصول على درجة الماجستير في الصحة العامة–مسار الإدارة الصحية وعليه نرجو التكرم بالموافقة والايعاز لمن يلزم بتسهيل مهمة الطالب لجمع البيانات الخاصة ببحثه حيث أن العينة المستهدفة هي العاملين في مجمع الشفاء الطبي التابع لوزارتكم الموقرة.

علماً بأن المعلومات ستكون متوفرة لدى الباحث والجامعة فقط وسنطلعكم على النتائج في حينها .

و اقبلوا فائق التحية و الاحترام،،،

د. بسام أبو حمد
منسق عام برامج الصحة العامة
فرع غزة

نسخة:
– الملف

Jerusalem Branch/Telefax 02-2799234
Gaza Branch/Telefax 08-2644220 -2644210
P.O. box 51000 Jerusalem

فرع القدس / تلفاكس 02-2799234
فرع غزة / تلفاكس 08-2644220-2644210
ص.ب. 51000 القدس

The Palestinian National Authority

Ministry of Health

Directorate General of Human Resources Development

السلطة الوطنية الفلسطينية

وزارة الصحة

الإدارة العامة لتنمية القوى البشرية

التاريخ: 2015/11/30م

الرقم :..........

الأخ / د. عبد اللطيف الحاج المحترم،،،

مدير عام المستشفيات

السلام عليكم ورحمة الله وبركاته..

الموضوع/ تسهيل مهمة طالب لعمل مشروع تخرج

بخصوص الموضوع أعلاه، يرجى تسهيل مهمة الباحث/ د.شحادة رزق العجرمي الملتحق ببرنامج ماجستير الإدارة الصحية- كلية الصحة العامة- جامعة القدس في إجراء بحث بعنوان :-

"Assessment of Occupational Safety at AL-Shifa Medical Complex "

حيث الباحث بحاجة لتعبئة استبانه من عدد من العاملين في مجمع الشفاء الطبي وإجراء مقابلات معمقة مع الإدارة العليا للمجمع، بالإضافة لتعبئة نموذج ملاحظة من المستشفيات الثلاث بالمجمع، بما لا يتعارض مع مصلحة العمل وضمن أخلاقيات البحث العلمي، و دون تحمل الوزارة أي أعباء أو مسئولية.

وتفضلوا بقبول التحية والتقدير،،،

د. ناصر رأفت أبو شعبان

مدير عام تنمية القوى البشرية

30/11/2015

صورة لـ/

- الإدارة العامة للرقابة الداخلية.
- صاحب العلاقة.

وزارة الصحة - تنمية القوى البشرية - صادر 1659 - التاريخ 3/11/15

الأخوة/ مدراء المستشفيات و الدوائر

المحترمين

للتكرم بتسهيل مهمة الباحث

وزارة الصحة

الإدارة العامة للمستشفيات

مستشفى الشفاء - غزة

SHIFA HOSPITAL - GAZA

د. صبحي اسماعيل سكيك

M.D. CABS. FRCSEd

Annex (6): Explanatory letter of occupational safety questionnaire (English & Arabic)

Explanatory letter

Assessment of Occupational Safety at Al-Shifa Medical Complex

Dear colleague:

I am a researcher / **Shehada Rezeq Al-Ajrami;** I highly appreciate your participation in this study.

This research is part of study requirements for a master's degree in health management from the School of Public Health- Al-Quds University - College of Graduate Studies. This study aims to assess the occupational safety at Al-Shifa Medical Complex through

1. Assessment of occupational safety policy, regulations and guidelines
2. Complex top management commitment to occupational safety issues
3. Identification of work related hazards, risks and diseases and factors beyond their
4. Availability of prevention means and occupational safety measurements
5. Employees compliance and training to safety use of occupational safety means

You are kindly requested to answer all the questions of the questionnaire; it takes about 30 minutes. Your participation is voluntary and you have the right not answer some of the questions, note that there is no right or wrong answers. It is important to point out that your participation in the study is very important, and we assure that your answer will be used for research purposes only, while ensuring strict confidentiality.

Occupational Safety: Is defined as the health and well being of people employed in a work environment.

Thank you for your cooperation

Shehada Rezeq Al-Ajrami

dr.Shehada-Rezeq@hotmail.com

Mobile: 0599893357

"تقييم السلامة المهنية فى مجمع الشفاء الطبي"

رسالة توضيحية

زميلى المشارك / زميلتى المشاركة

أنا الباحث/ شحادة رزق العجرمى، طالب ماجستير بجامعة القدس كلية الدراسات العليا برنامج الصحة العامة. أقوم بإجراء هذا البحث كمتطلب رئيسي من متطلبات الدراسة لنيل درجة الماجستير فى الإدارة الصحية. حيث تهدف هذه الدراسة إلى تقييم السلامة المهنية فى مجمع الشفاء الطبي وذلك إستك مالآ لمتطلبات الحصول على درجة الماجستير تخصص إدارة صحية من كلية الصحة العامة - جامعة القدس - فرع غزة، حيث تهدف الدراسة لتقييم السلامة المهنية لدى العاملين فى المجمع لتعزيز وتحسين بيئة العمل للوصول لبيئة عمل مناسبة وآمنة من خلال خمسة محاور رئيسية:

1. مراجعة السياسات والقوانين و الأنظمة واللوائح الخاصة بالسلامة المهنية
2. مدى التزام الإدارة العليا للمجمع بقضايا السلامة المهنية
3. تحديد المخاطر والعوامل المساعدة فى حوادث وإصابات العمل و الأمراض المتعلقة بالمهنة و الأسباب الكامنة وراء حدوثها
4. مدى توفر وسائل الوقاية وإجراءات السلامة المهنية فى المجمع
5. مدى التزام العاملين وتدريبهم على استخدام وسائل الوقاية وإجراءات السلامة المهنية فى المجمع .

أشكركم على مشاركتكم في تعبئة هذه الاستبانة والتي قد تستغرق حوالى 30 دقيقة، علما بأن مشاركتكم طوعية ويمكنكم عدم الإجابة على بعض الأسئلة. أود أن أنشير إلى أن مشاركتكم في الدراسة بالغة الأهمية، وأؤكد لكم أن إجابتكم ستستخدم لأغراض البحث العلمي فقط مع ضمان السرية التامة.

لذا أرجو تعبئة الاستبانة كاملة بدقة وعناية وواقعية وبما يعبر عن رأيكم، فلا توجد إجابة صحيحة أو إجابة خاطئة.

*ملاحظة/ يقصد بالسلامة المهنية حماية العاملين من مخاطر التي قد يتعرضون لها فى أماكن عملهم.

شكراً لكم على حسن تعاونكم،،،

الباحث/ شحادة رزق العجرمى

dr.shehada-rezeq@hotmail.

جوال:059989335

Annex (7): The Questionnaire (English and Arabic)

Date……

Serial No……

Dear participant /please answer the following questions according to your opinion

Part one: Socio-demographic and work related data

First: Socio-demographic characteristics:

1. Age in years ☐ 20<30 ☐ 30<40 ☐ 40<50 ☐ 50 and above

2.Gender ☐ Male ☐ Female

3. Marital status ☐ Single ☐ Married ☐ Divorced ☐ Widow

4. Educational level ☐ Secondary or less ☐ Diploma ☐ Bachelor

☐ Master and higher

Second: Work related (occupational) characteristics::

5. Workplace ☐ Surgery hospital ☐ Medical hospital ☐ Obstetric hospital

☐ Outpatient & Complex administration ☐ Other workplace

6.Nature of work ☐ Medical profession ☐ Nurse ☐ Paramedic

☐ Administrator ☐ Others

7.Experience years ☐ >1 <5 ☐ 5 <10 ☐ 10 <15 ☐ 15&above

8.Weekly Working Hours: ☐ 35 ☐ >35

9.Daily Work: ☐ Morning ☐ Shifts (M.E.N)

10.Sick leaves per month related to work: ☐ Yes ☐ No

If yes ☐ 1-3 ☐ 4-6 ☐ > 6

11.Exposure to work accidents, injuries or diseases during years of experience:

☐ Yes ☐ No

If Yes ☐ 1-3 ☐ 4-6 ☐ > 6

استبانه الدراسة

التاريخ: .....

الرقم المسلسل: .....

نأمل من سيادتكم التكرم بالإجابة على جميع الأسئلة وذلك بوضع إشارة (×) في المكان الذي تختاره.

الجزء الأول: المعلومات الشخصية والمهنية

أولا: المعلومات الشخصية:

1. **العمر بالسنة:** ☐ 30> 20 ☐ 40>30 ☐ 50> 40 ☐ 50 وأكثر
2. **الجنس:** ☐ ذكر ☐ أنثى
3. **الحالة الاجتماعية:** ☐ أعزب/ آنسة ☐ متزوج/متزوجة ☐ مطلق ☐ أرمل
9. **المستوى التعليمى:** ☐ ثانوى فأقل ☐ دبلوم ☐ بكالوريوس ☐ ماجستير فما فوق

ثانيآ: المعلومات المهنية:

10. ***مكان العمل:*** ☐ *مستشفى الجراحة* ☐ *مستشفى الباطنة* ☐ *مستشفى الولادة*
☐ *عيادات خارجية وادارة المجمع* ☐ *أخرى*

11. **طبيعة العمل (المهنة):** ☐ مهن طبية ☐ تمريض ☐ فنيين
☐ خدمات ادارية ☐ خدمات أخرى

12. **عدد سنوات الخبرة:** ☐ 5>1 ☐ 10>5 ☐ 15>10 ☐ 15 وأكثر

13. **ساعات العمل أسبوعيآ:** ☐ 35 ساعة ☐ أكثر من 35 ساعة

14. **نظام العمل اليومى:** ☐ صباحى ☐ مناوبات (ص. م. ل)

15. **هل تستنفذ اجازات مرضية لها علاقة بطبيعة عملك شهريآ:** ☐ نعم ☐ لا
إذا كانت الاجابة نعم كم عددها؟ ☐ 3-1 ☐ 6-4 ☐ أكثر من 6

16. **هل تعرضت لحادث أو اصابة أو مرض طوال فترة خدمتك ذو علاقة بطبيعة عملك؟:** ☐ نعم ☐ لا
إذا كانت الاجابة نعم كم عددها؟ ☐ 3-1 ☐ 6-4 ☐ أكثر من 6

Dear participant /please put (√) mark on the place that is compatible to your opinion

	Statement	Degree of agreement				
		Very Big	Big	Middle	Little	Very Little
	Domain (1):Occupational safety policy, laws, regulations and guidelines in the availability and their activation and development					
	1.1: Availability of rules and laws to regulate the occupational safety matters					
1.	External bodies such as (ministry of labor, civil defense, ministry of environment) provide rules and regulation for safety procedures inside the complex.					
2.	There are external laws (Labor Law, the Public Health law, Environmental Law) to regulate occupational safety procedures within the complex.					
3.	There is a special effective system for occupational safety within the complex					
4	There are committees concerned that provide occupational safety regulations and guidelines for occupational safety					
5	There are mandatory laws and regulations for the procedures of occupational safety.					
6	There are clear guiding signs that show prevention methods and safety procedures inside the complex					
7	There are clear guiding booklets that show prevention methods and safety procedures inside the complex.					
8	There are strict disciplinary actions against those who don't follow safety procedures inside the complex					
	1.2: Activation and development of rules and regulations of safety procedures					
9	Eternal bodies such as (ministry of labor, civil defense, ministry of environment) activate and develop the rules and regulation of safety procedures inside the complex					
10	Internal bodies such as (occupational safety committees) activate and develop the rules and regulation of safety procedures inside the complex					
11	Developing and activating the laws, rules and regulations commensurate with the work requirements in the complex					
12	Developing and activating the laws, rules and regulations decreases accidents and work injuries.					
13	Developing and activating the laws, rules and regulations decreases professional diseases					
14	Rules and regulations and laws of occupational safety in the complex are developed according to international standards for occupational safety					
15	Rules and regulations and laws of occupational safety in the complex are developed continuously					

	Statement	Degree of agreement				
		Very Big	Big	Middle	Little	Very Little
	Domain(2): The complex top management commitment to occupational safety issues					
1	There is a clear policy for occupational safety by the complex top management .					
2	There is an assessment for the risks of professional work by the complex top management					
3	Workers are involved in the process of risk assessment and the development of occupational safety procedures at the complex.					
4	The complex top management makes administrative efforts to apply the rules and procedures of occupational safety.					
5	The complex top management provides technical and material resources for the application of occupational safety procedures.					
6	The complex Top management works on and follows-up the application of plans and programs of occupational safety.					
7	There are qualified persons and expertise in the top management to work on the development of occupational safety systems.					
8	The complex top management is interested in research and scientific studies related to the development of occupational safety procedures					
9	There is a job description for each post that includes procedures of occupational safety related the job to let the employee be aware of.					
10	There is an effective medical record for workers pertaining to accidents and work-related injuries and illnesses related to the profession.					
11	The complex top management comply with the regulations and laws of the Palestinian occupational safety (Labor, Public Health Acts)					
12	External bodies follow up the compliance of the top management to occupational safety rules and regulations.					
13	The complex top management of takes disciplinary procedures against workers who don't comply to occupational safety procedures					
14	The complex top management comply to laws that include the principle of compensation and insurance for workers in the event of exposure to accidents or work injuries					
	Domain (3): identifying work-related risk factors, accidents, injuries and diseases among employees at the complex and factors beyond these illnesses					
	3.1 Your work need to (risks and hazards):					
1	Stand for long times					
2	Carry heavy weights					
3	Handle electrical equipment and sets					
4	Deal with a solid or moist objects					

	Statement	Degree of agreement				
		Very Big	Big	Middle	Little	Very Little
5	Use sharp tools and machines.					
6	Deal with fumes, gases, radiation, dust and liquids					
7	Work in hot temperature, extreme cold or moisture					
8	Work in a very noisy environment					
9	Directly deal with sick people and contact persons					
10	Work for long hours (many shifts)					
11	My job requires attention and clear focus					
12	Sometimes I work on holidays					
13	Put on protective cloths or tools					

3.2 From your view, please identify the risks and work-related illnesses that you encounter while carrying out your work (arrange them according to the most recurrent to the least recurrent ones)

……

……

……

……

……

3.3 Factors beyond workplace hazards, accidents and diseases

14	Lack of compliance to laws, rules and regulations of the occupational safety.					
15	The lack of a specialized effective department or committee for occupational safety in the complex					
16	Lack of tools of prevention and occupational safety measures at the complex					
17	The workers don't use protection tools and don't follow occupational safety procedures					
18	The scarcity of staff training courses on the use of the means of prevention and occupational safety procedures at the complex					
19	Lack of knowledge among workers about means of prevention and occupational safety procedures at the complex					

	Statement	Degree of agreement				
		Very Big	Big	Middle	Little	Very Little
Domain (4): Availability of prevention means and occupational safety procedures at the complex						
1	The complex is equipped with (lighting - ventilation – heating- furniture) which are suitable for your job					
2	There are posters and warning signs of occupational safety for the employees in a clear and visible places					
3	Personal safety equipment (coats - gloves- muzzles -shoes – fire blankets - face mask) are available					
4	Alarm systems are available in sufficient numbers and in appropriate places within the complex					
5	Different fire extinguishers are available in the sections and fixed in place visible to all persons and good to use and are regularly maintained by specialists					
6	Emergency exits are available in sufficient numbers and its locations are accessible					
7	.Elevators are available and work properly					
8	The electrical fillings are safe to use					
9	Tools used are sterilized well					
10	Tools and devices are well-arranged and do not hinder work					
11	Tools and devices available do not cause physical harm.					
12	Preventive methods are sufficiently available					
13	Preventive vaccines against infectious diseases are available					
14	Preventive methods of accidents and work injuries are available					
15	Medical devices and equipment are available and operate safely and are maintained on a regular basis					
16	Written instructions for how to use devices and medical equipment are available					
Domain (5): Workers' compliance and training to use the prevention means and occupational safety procedures at the complex						
5.1: Compliance of workers to use the f prevention means and occupational safety procedures at the complex						
1	I always put on the work uniform					
2	I always wash my hands and disinfect them in a safe way					
3	I always wash my hands and disinfect them in a safe way					
4	I always dispose medical wastes safely					
5	I always follow occupational safety rules and regulations					

	Statement	Degree of agreement				
		Very Big	Big	Middle	Little	Very Little
6	I always use the methods of prevention and occupational safety procedures at the complex because they protect against the risks of disease					
7	I always use the methods of prevention and occupational safety procedures at the complex because of the rule and regulations					
8	I always use the methods of prevention and occupational safety procedures at the complex because the disciplinary actions					
5.2 The extent of staff training on the use of prevention means and occupational safety procedures at the complex:						
9	There is a specialized department or committee for occupational safety at the complex					
10	The internal authorities (ministry of health) provides training courses for occupational safety at the complex					
11	The external authorities (The Ministry of Labor, civil defense, civil institutions or international organizations) provides training courses for occupational safety at the complex					
12	Employees receive training on evacuation and emergency plan at the complex					
13	There is a training on ways of dealing with occupational safety devices and equipment at the complex					
14	There is a training on the use of prevention means and occupational safety procedures through pamphlets and lectures					
15	There is a training on the use of prevention means and occupational safety procedures through practical methods and workshops					
16	The employees participate in local seminars and conferences on occupational safety (Ministry of Labor, civil defense, nongovernmental organizations)					
17	The employees participate in local seminars and conferences on occupational safety (International Labor Organization, World Health Organization)					

Thank you for cooperation

استبانه تقييم السلامة المهنية فى مجمع الشفاء الطبي

عزيزي المشارك يرجى وضع إشارة (√) في المكان الذي يتناسب مع وجهة نظرك

م.	البند	درجة الموافقة				
		كبيرة جداً	كبيرة	متوسطة	قليلة	قليلة جداً
المحور الأول: مدى توفر اللوائح و الأنظمة والقوانين المتعلقة بالسلامة المهنية و العمل عل تفعيلها و تطويرها						
أولاً: توفر اللوائح و الأنظمة و القوانين المتعلقة بأمور السلامة *المهنية فى المجمع*						
1	تهتم جهات خارجية (وزارة العمل، الدفاع المدني، وزارة البيئة) بتوفير اللوائح المنظمة الخاصة بالسلامة المهنية داخل المجمع					
2	توجد قوانين خارجية (قانون العمل، قانون الصحة العامة. قانون البيئة) تهتم بإجراءات السلامة المهنية داخل ا المجمع					
3	يوجد نظام فعال خاص بالسلامة المهنية داخل ا المجمع					
4	توجد داخل المجمع لجان خاصة بالسلامة المهنية تهتم بتوفير اللوائح والإرشادات الخاصة بالسلامة المهنية					
5	تتوفر داخل المجمع قوانين ولوائح الزامية تهتم بإجراءات السلامة المهنية					
6	يتوفر لوحات إرشادية واضحة لكيفية استخدام وسائل الوقاية وإجراءات السلامة المهنية داخل المجمع					
7	يتوفر منشورات وكتيبات توضيحية لكيفية استخدام وسائل الوقاية وإجراءات السلامة المهنية داخل المجمع					
8	توجدعقوبات حازمة للعاملين الغير ملتزمين باستخدام وسائل وإجراءات السلامة المهنية في المجمع					
ثانياً: العمل على تطوير و تفعيل الأنظمة و اللوائح و القوانين الخاصة بالسلامة المهنية فى المجمع						
9	تهتم الجهات الخارجية (وزارة العمل، الدفاع المدني، وزارة البيئة) بتطويروتفعيل القوانين و الأنظمة الخاصة بالسلامة المهنية داخل المجمع					
10	تهتم الجهات الداخلية (لجان السلامة المهنية) بتطوير و تفعيل الأنظمة و القوانين الخاصة بالسلامة المهنية فى المجمع					
11	تطوير وتفعيل اللوائح و القوانين و الأنظمة يتناسب مع متطلبات العمل فى المجمع					
12	تطوير وتفعيل اللوائح و الأنظمة و القوانين يعمل على التقليل من حوادث و إصابات العمل					
13	تطوير و تفعيل اللوائح و الأنظمة و القوانين يعمل على التقلبل من الإصابة بالأمراض المهنية					
14	يتم تطوير اللوائح و الأنظمة و القوانين الخاصة بالسلامة المهنية في المجمع وفق المعايير الدولية للسلامة المهنية					
15	يتم تطوير اللوائح و الأنظمة و القوانين الخاصة بالسلامة المهنية في المستشفى بشكل مستمر					

م	البند	درجة الموافقة				
		كبيرة جداً	كبيرة	متوسطة	قليلة	قليلة جداً
المحور الثانى: مدى التزام الإدارة العليا للمجمع بقضايا السلامة المهنية						
1	يوجد سياسة واضحة للسلامة المهنية من قبل الإدارة العليا للمجمع					
2	يوجد تقييم لمخاطر العمل المهنية من قبل الإدارة العليا للمجمع					
3	يشارك العاملين في عملية تقييم المخاطر و تطوير إجراءات السلامة المهنية في للمجمع					
4	توفر الإدارة العليا للمجمع الجهد الإداري لتطبيق قواعد و إجراءات السلامة المهنية					
5	توفر الإدارة العليا للمجمع الإمكانات الفنية و المالية لتطبيق إجراءات السلامة المهنية					
6	تعمل الإدارة العليا للمجمع على تطبيق و متابعة خطط و برامج السلامة المهنية					
7	يوجد كفاءات و خبرات لدى الإدارة العليا تعمل على تطوير إدارة أنظمة السلامة المهنية					
8	تهتم الإدارة العليا للمجمع بالبحوث و الدراسات العلمية التي تتعلق بتطوير إجراءات السلامة المهنية					
9	يتوفر وصف وظيفي لكل وظيفة يشمل تحديد إجراءات السلامة المهنية التي تنطوي عليها الوظيفة و اطلاع الموظف عليها					
10	يوجد سجل طبي فعال للعاملين يتعلق بحوادث واصابات العمل والأمراض المتعلقة بالمهنة					
11	تلتزم الإدارة العليا للمجمع باللوائح والقوانين الفلسطينية المتعلقة بالسلامة المهنية (قانون العمل ،قانون الصحة العامة)					
12	تتابع الجهات الخارجية مدى التزام الإدارة العليا للمستشفي بتطبيق قوانين ولوائح السلامة المهنية					
13	تتخذ الإدارة العليا للمجمع إجراءات انضباطية إتجاه العاملين الغير ملتزمين باستخدام وسائل و إجراءات السلامة المهنية					
14	تلتزم الإدارة العليا للمجمع بقوانين تضمن مبدأ التعويض و التأمين للعاملين في حال تعرضهم لحوادث أو إصابات عمل					
المحور الثالث: تحديد المخاطر والإصابات والحوادث و الأمراض المتعلقة بالعمل و الأسباب الكامنة وراء حدوثها						
أولاً: طبيعة العمل تتطلب أن:						
1	أقف لفترات طويلة					
2	أحمل أوزان ثقيلة					
3	أتعامل مع أجهزة ومعدات كهربائية					
4	أتعامل مع أجسام صلبة أو رطبة					
5	استخدم أدوات أو آلات حادة					
6	أتعامل مع أبخرة، غازات، إشعاعات، سوائل أو أتربة					
7	أعمل تحت درجة حرارة زائدة، برودة زائدة أو رطوبة					
8	أعمل فى بيئة مليئة بالضوضاء					

م	البند	درجة الموافقة				
		كبيرة جداً	كبيرة	متوسطة	قليلة	قليلة جداً
9	أعمل فى بيئة الإضاءة بها غير مناسبة					
10	أحتك مباشرة بالمرضي وجمهور المراجعين					
11	أعمل ساعا ت لفترات طويلة (نظام المناوبات)					
12	أعمل حتى في أيام الإجازات أحياناً					
13	يتطلب عملي تركيز و شدة إنتباه					
14	أرتدي ملابس و وسائل واقية					

ثانياً: من وجهة نظرك الرجاء تحديد المخاطر والأمراض المتعلقة بمهنتك التى تتعرض لها أثناء تأدية عملك حسب درجة تعرضك لها من الأكثر تكراراً حتى الأقل:

1.----------

2. ----------

3. ----------

4.----------

5.----------

أخرى:----------

ثالثاً: من وجهة نظرك ما هى العوامل و الأسباب الكامنة وراء حدوث الإصابات والحوادث والأمراض المتغلقة بمهنتك أثناء تأدية عملك؟

15	قلة الإلتزام بتطبيق القوانين و التشريعات و اللوائح الخاصة بالسلامة المهنية فى المجمع					
16	عدم وجود قسم متخصص فعال و لجان خاصة بالسلامة المهنية فى المجمع					
17	قلة توفر وسائل الوقاية و إجراءات السلامة المهنية فى المجمع					
18	قلة التزام العاملين باستخدام وسائل الوقاية و إجراءات السلامة المهنية فى لمجمع					
19	ندرة الدورات التدريبية للعاملين على استخدام وسائل الوقاية و إجراءات السلامة المهنية فى المجمع					
20	قلة المعرفة لدى العاملين بوسائل الوقاية و إجراءات السلامة المهنية فى المجمع					

م.	البند	درجة الموافقة				
		كبيرة جداً	كبيرة	متوسطة	قليلة	قليلة جداً
المحور الرابع: مدى توفر وسائل الوقاية و إجراءات السلامة المهنية فى المجمع						
1	تجهيزات المستشفى من (إضاءة – تهوية –تدفئة – أثاث) مناسبة لمهنتك					
2	يتوفر ملصقات ولوحات تحذيرية للسلامة المهنية لتوعية العاملين في أماكن واضحة و مرئية					
3	معدات السلامة المهنية الشخصية (معطف- قفاز- كمامة –أحذية – بطانية إطفاء- قناع الوجه) متوفرة بشكل كافى					
4	تتوافر أنظمة للإنذار بأعداد كافية وفى أماكن مناسبة داخل المستشفى					
5	تتوافرالطفايات اليدوية و المتحركة بأنواعها فى الأقسام و مثبتة فى مكانها ومرئية للجميع وصالحة للاستخدام و يتم صيانتها دورياً من قبل مختصين					
6	مخارج الطوارئ بالمستشفى متاحة للاستخدام وأماكنها مناسبة و بأعداد كافية					
7	المصاعد متوفرة و تعمل بشكل جيد و آمن					
8	المقابس والأسلاك والأجهزة الكهربائية آمنة الاستخدام					
9	الأدوات المستخدمة معقمة بشكل جيد					
10	الأدوات و الأجهزة مرتبة و لا تعيق العمل					
11	الأدوات و الأجهزة المتاحة لا تسبب أضرار جسدية					
12	تتوفر وسائل واقية من الأمراض بشكل جيد					
13	تتوفر أمصال واقية من الأمراض المعدية					
14	تتوفر وسائل واقية من الحوادث وإصابات العمل					
15	تتوافر الأجهزة و المعدات الطبية و تعمل بشكل آمن و يتم صيانتها بشكل دوري					
16	تتوافر إرشادات مكتوبة لكيفية استخدام الأجهزة و المعدات الطبية					
المحور الخامس: مدى التزام العاملين وتدريبهم على استخدام وسائل الوقاية و إجراءات الشلامة المهنية فى المجمع						
أولاً: مدى التزام العاملين باستخدام وسائل الوقاية وإجراءات السلامة المهنية فى المجمع						
1	ألتزم بارتداء الزى الخاص بالعمل					
2	ألتزم باستخدام وسائل الوقاية الشخصية (قفازات، أغطية الرأس، واقيات العين والوجه والقدم)					
3	ألتزم بغسل وتعقيم اليدين بالطريقة الآمنة					
4	ألتزم باستخدام الأدوات المعقمة					
5	ألتزم بالتخلص من النفايات الطبية بالطرق الآمنة					

م	البند	درجة الموافقة				
		كبيرة جداً	كبيرة	متوسطة	قليلة	قليلة جداً
6	ألتزم باللوائح والارشادات والتعليمات الخاصة بالسلامة المهنية					
7	ألتزم باستخدام وسائل الوقاية وإجراءات السلامة المهنية في المجمع لأنها تقي وتحمي من المخاطر و الأمراض					
8	أنضبط باستخدام وسائل الوقاية وإجراءات السلامة المهنية في المجمع لوجود قوانين وتشريعات ولوائح ملزمة					
9	أنصبط باستخدام وسائل الوقاية وإجراءات السلامة المهنية في المجمع لوجود عقوبات انضباطية لعدم استخدامها					
ثانياً: مدى تدريب العاملين على استخدام وسائل الوقاية و إجراءات السلامة المهنية						
10	يوجد قسم متخصص أو لجنة أو فريق للسلامة المهنية فى المجمع					
11	توفر الجهات الداخلية (وزارة الصحة) برامج تدريبية للسلامة المهنية خاصة بالعاملين فى المجمع					
12	تسهم الجهات الخارجية (وزارة العمل، الدفاع المدنى، مؤسسات أهلية أو دولية) بعقد برامج تدريبية للسلامة المهنية خاصة بالعاملين في المجمع					
13	يتلقي العاملون تدريباً على خطة الإخلاء و الطوارئ في المجمع					
14	يتم التدريب على طرق التعامل مع أنظمة وأجهزة السلامة المهنية فى المجمع					
15	يتم التدريب على استخدام وسائل الوقاية و إجراءات السلامة المهنية عن طريق النشرات التوعوبة و المحاضرات					
16	يتم التدريب على استخدام وسائل الوقاية وإجراءات السلامة المهنية عن طريق التدريب العملي و ورشات العمل					
17	يشارك العاملين في الندوات والمؤتمرات المحلية المتعلقة بالسلامة المهنية (وزارة العمل ، الدفاع المدنى، مؤسسات أهلية)					
18	يشارك العاملين في الندوات والمؤتمرات الدولية المتعلقة بالسلامة المهنية (منظمة العمل الدولية ، منظمة الصحة العالمية)					

نشكر لك مشاركتم وحسن تعاونكم

الباحث/ شحادة رزق العجرمى

Annex (8): OSHA observational checklist analysis

Exit Routes	Surgery Building	Special Surgery Building	Obstetric Building
Exit routes are available	Met	Met	Met
Two exit routes are as far away from each other as possible	Met	Met	Met
Exit route is clear	Met	Met	Met
Presence of guiding signs to the exit route	Met	Met	Not Met
Exit route is regularly maintained to make sure there are no obstructions	Not Met	Met	Not Met
Exit door is side hinged and opens to the outside of the exit route	Not Met	Not Met	Not Met
Exit sign is clearly visible	Met	Met	Not Met
Exit route is well illuminated	Not Met	Met	Not Met
Exit discharge is an open space	Not Met	Not Met	Not Met
Exit route dimensions are complaint	Met	Met	Not Met
Exit door is unlocked	Not Met	Not Met	Not Met
Exit door is easily differentiated from other doors	Met	Met	Met
Total	**7/12=58%**	**9/12=75%**	**4/12=33.3%**
Emergency Action Plan(EAP) And Fire Prevention Plan(FPP)			
A copy of the emergency action plan available for all employees	Not Met	Not Met	Not Met
Alarm system is available and functional	Met	Met	Met
A copy of the fire prevention plan is available and easily accessible in the workplace	Not Met	Not Met	Not Met
A fire brigade is available	Not Met	Not Met	Not Met
Portable fire extinguishers are available	Met	Met	Met
Monthly visual inspection	Not Met	Not Met	Not Met
Annual maintenance of fire extinguishers	Not Met	Not Met	Not Met
Regular training for employees to apply emergency action	Not Met	Not Met	Not Met
Annual review and update of the plans	Not Met	Not Met	Not Met
Fire extinguisher is properly mounted	Met	Met	Met
Fire extinguisher is properly distributed	Met	Met	Met
Total	**4/11=36.3%**	**4/11=36.3%**	**4/11=36.3%**
Hazards Communication			
A hazard communication program is available	Not Met	Not Met	Not Met
All hazardous materials are properly labeled	Not Met	Not Met	Not Met
Available Material Safety Data Sheets(MSDS) for all hazardous chemicals in the work place	Not Met	Not Met	Not Met
MSDS are reviewed and updated	Not Met	Not Met	Not Met
Spill response is included in the program	Not Met	Not Met	Not Met
Total	**Not Met**	**Not Met**	**Not Met**

Personal Protective Equipment(PPE)			
PPE are available at no cost: gloves – goggles-aprons - masks - footwear	Met	Met	Met
PPE are used by at risk employees	Met	Met	Met
PPE are maintained	Met	Met	Met
PPE are avoided if damaged	Met	Met	Met
Training on how to use PPE to employees	Met	Met	Met
Total	**5/5 =100%**	**5/5=100%**	**5/5 =100%**
Walking and Working Surfaces			
Stairs are installed between 30 and 50 degrees on the horizontal level	Met	Met	Not Met
Stairs have a uniform riser height and tread depth	Met	Met	Not Met
The height of the stair railings is between 30 and 34 inches (76-86cm).1inch=2.54cm	Met	Met	Met
Fixed stairs are not less than 22 inches wide (55.88cm)	Met	Met	Met
Treads are slip resistant	Met	Met	Met
Vertical clearance above any stairs is at least 7 feet (7*30.48=213.36cm)	Met	Met	Met
Portable ladders are not placed on unstable bases to obtain more height	Not Met	Not Met	Not Met
Portable ladders have no missing steps	Not Met	Not Met	Not Met
Total	**6/8=75%**	**6/8=75%**	**4/8=50%**
Radiation Safety	**Surgery Building**	**Special Surgery Building**	
Workers in the radiology department have personal dosimeters	Not Met	Met	
Standard Operating Procedures(SOPs) are available and workers are trained on it	Not Met	Met	
Presence of personal protective e.g. lead aprons	Met	Met	
Lead aprons are properly stored	Met	Met	
Hazards sign is present on the door	Met	Met	
Pregnant workers have a leave with full payment	Not Met	Not Met	
Environmental monitoring of radiation leaks	Not Met	Not Met	
Total	**3/7=42.8%**	**5/7=71%**	
Electrical Safety			
Electrical control rooms are adequately illuminated	Met	Met	Met
Electrical boxes are labeled with voltage	Met	Met	Met
The minimum height in electrical control room is 6 feet(6*30.48=182.88cm) 3 inches(3*2.54=7.62cm)	Met	Met	Met
Live parts are kept within approved cabinets	Met	Met	Met
Entrance to rooms containing live parts are marked with warning signs and have restricted access	Met	Met	Met
All boxes have covers	Not Met	Met	Not Met
Panel boards are kept in a dry area with a dead front	Met	Met	Met

Flexible cords are used according to OSHA standards	Not Met	Not Met	Not Met
Switch keys in the panel boards are marked ON and OFF	Met	Met	Met
Total	**7/9=77%**	**8/9=88 %**	**7/9=77%**
Formaldehyde Safety Plan	**Central Sterilization Department & Histopathology Department**		
Formaldehyde safety plan is available	Not Met		
Environmental monitoring of formaldehyde levels	Not Met		
Personal monitoring of formaldehyde (dosimeter)	Not Met		
DANGER sign at areas where airborne formaldehyde levels exceed TWA(Time-Weighted Average) and Short-Time Exposure Level(STEL)	Not Met		
Medical surveillance program for workers exposed to formaldehyde at or above action level	Not Met		
Training for workers dealing with formaldehyde	Not Met		
PPE for formaldehyde are available	Not Met		
Records for monitoring levels are available	Not Met		
Spill response for formaldehyde	Not Met		
Total	**Not Met**		
Compressed Gas Cylinders	**Central Oxygen Station**		
Regular inspection of compressed gas cylinders	Not Met		
Compressed gas cylinders are labeled	Not Met		
Gas cylinders are stored properly Chained – Upright – Cap – Safe place	Not Met		
Gas cylinders are moved properly not dragged and not rolled	Not Met		
Employer is providing a complete hazard communication plan	Not Met		
The facility provides a record for work related injuries	Not Met		
Employees can access that record	Not Met		
Total	**Not Met**		
Ergonomics Program			
The health facility applies ergonomics according to OSHA standards	Not Met		

Annex (9): The proposed questions to the key informant interviews:

1- In your opinion, how can you describe the current status of occupational safety at the complex?
2- How you perceived the current occupational safety status?
3- In your opinion, to which extent the occupational safety policy, rules, guidelines, standards and regulations are available at the complex?
4- Who is responsible for Occupational safety at the complex?
5- Please discus the role of top management regarding Occupational safety issues? To which extent you think that the complex top management is concerned and committed with occupational safety issues?
6- Are there occupational safety unit or committees concerns with safety issues at the complex? Why we need?
7- To which extent the occupational safety means and prevention tools are available? Are there sufficient?
8- Are the employees are trained to safely use? Are they complying with?
9- From your experience, what are the main workplace hazards and diseases to which the employees exposed? What are the factors beyond these hazards?
10- Tell me about which factors affect occupational safety:
   - work experience,
   - educational level,
   - training opportunities,
   - employees attitudes and culture,
   - job description,
   - employees involvement,
   - sufficient prevention tools and safety measurements,
   - applicable safety rules, guidelines and regulations,
   - top management commitment,
   - employees commitment,
   - staff shortage,
   - workload
11- If you are given the authority, what you will do about occupational safety?
12- How we can make sure that occupational safety is effective?
13- What is the role of occupational safety on improving the quality of care provided and patient's safety? How? .
14- Are there any other issues regarding the occupational safety that you would like to discuss?

Annex (10): Questionnaire review experts:

	Name	Location
1.	Dr. Bassam Abu Hamad	Al-Quds University
2.	Dr. Yehia Abed	Al-Quds University
3.	Dr. Sobhi Skaik	Al-Azhar University
4.	Dr. Majed El Farra	Islamic University
5.	Dr. Mohamed Al Ella	Al-Quds University
6.	Dr. Hazem Eesa	Faculty of Islamic Call
7.	Dr. Mazen Zaqout	MOH
8.	Dr. Yousef Awad	University of Palestine
9.	Dr. Ayman Elsous	MOH

Annex (11): Characteristics of the key informants

No.	Names	Location	Position
1.	Dr. Ayman Elsous	MOH	Infection Control & Quality Development Officer
2.	Mr. Zohir Nofal	MOH	Nursing Director
3.	Dr. Jihad Ghazal	MOH	Staff Doctor
4.	Mr. Raafat Hamdona	MOH	Administrative & Financial Director
5.	Mr. Rami Abu Mousa	MOH	Maintenance Safety Officer

Annex (12): Reliability statistics: (Cronbach's Alpha & Split-Half Coefficient) of OS domains

No	Domain	Cronbach's Alpha	Split-Half Coefficient
1.1	Availability of occupational safety rules, laws and regulations at the Complex	**0.91**	**0.86**
1.2	Activation and development of safety rules, regulations and procedures	**0.89**	**0.88**
2	Commitment of complex top management to the application of occupational safety policy, rules and regulations	**0.92**	**0.90**
3.1	Identification of workplace risk factors, accidents, injuries and work-related illnesses among employees in the complex	**0.86**	**0.75**
3.2	Attribution of work-related injuries, accidents and diseases	**0.91**	**0.89**
4	Availability of prevention tools and occupational safety procedures in the complex	**0.88**	**0.76**
5.1	Compliance of employees to use the prevention means and occupational safety procedures at the complex	**0.83**	**0.79**
5.2	The extent of staff training on the use of prevention means and occupational safety procedures at the complex:	**0.89**	**0.84**
	Total	**0.93**	**0.91**

Annex (13): Correlation Coefficients between the dimensions and the total occupational safety score

No	Domain	Correlation	sig
1.1	Availability of occupational safety rules, laws and regulations at the Complex	**0.84**	**0.01**
1.2	Activation and development of safety rules, regulations and procedures	**0.62**	**0.01**
2	Commitment of complex top management to the application of occupational safety policy, rules and regulations	**0.85**	**0.01**
3.1	Identification of workplace risk factors, accidents, injuries and work-related illnesses among employees in the complex	**0.47**	**0.01**
3.2	Attribution of work-related injuries, accidents and diseases	**0.42**	**0.01**
4	Availability of prevention tools and occupational safety procedures in the complex	**0.77**	**0.01**
5.1	Compliance of employees to use the prevention means and occupational safety procedures at the complex	**0.79**	**0.01**
5.2	The extent of staff training on the use of prevention means and occupational safety procedures at the complex:	**0.68**	**0.01**

Annex (14): LSD Post –Hoc test results Multiple Comparisons

LSD Post –Hoc: Workplace

Dependent Variable: Overall Status LSD Post-Hoc: Work place		Mean Difference (1-J)	Std. Error	Sig.	95 % Confident Interval	
					Lower Bound	Upper Bound
Surgical hospital	Medical hospital	-.07002	.06765	.301	-.2031	.0630
	Genecology hospital	.00346	.06869	.960	-.1316	.1386
	OPD and complex administration	.19485*	.07774	.013	.0419	.3478
	Other work places	.29329*	.08848	.001	.1193	.4673
Medical hospital	Surgical hospital	.07002	.06765	.301	-.0630	.2031
	Genecology hospital	.07348	.07921	.354	-.0823	.2293
	OPD and complex administration	.26487*	.08717	.003	.0934	.4363
	Other work places	.36331*	.09687	.000	.1728	.5538
Genecology hospital	Surgical hospital	-.00346	.06869	.960	-.1386	.1316
	Medical hospital	-.07348	.07921	.354	-.2293	.0823
	OPD and complex administration	.19139*	.08798	.030	.0183	.3644
	Other work places	.28983*	.09760	.003	.0979	.4818
OPD and complex administration	Surgical hospital	-.19485*	.07774	.013	-.3478	-.0419
	Medical hospital	-.26487*	.08717	.003	-.4363	-.0934
	Genecology hospital	-.19139*	.08798	.030	-.3644	-.0183
	Other work places	.09844	.10417	.345	-.1064	.3033
Other work places	Surgical hospital	-.29329*	.08848	.001	-.4673	-.1193
	Medical hospital	-.36331*	.09687	.000	-.5538	-.1728
	Genecology hospital	-.28983*	.09760	.003	-.4818	-.0979
	OPD and complex administration	-.09844	.10417	.345	-.3033	.1064
The mean difference is significant at the 0.05 level.*						

LSD Post-Hoc: Experience Years

Dependent Variable: Overall Status LSD Post-Hoc: Experience years		Mean Difference (1-J)	Std. Error	Sig.	95 % Confidence Interval	
					Lower Bound	Upper Bound
1 and fewer than 5	5 and less than 10	.07446	.06156	.227	-.0466	.1955
	10 and less than 15	.15247*	.07065	.032	.0135	.2914
	More than 15	.18901*	.08081	.020	.0301	.3480
5 and fewer than 10	More than 1 and less than5	-.07446	.06156	.227	-.1955	.0466
	10 and less than 15	.07801	.06863	.256	-.0570	.2130
	More than 15	.11455	.07905	.148	-.0409	.2700
10 and fewer than 15	More than 1 and less than5	-.15247*	.07065	.032	-.2914	-.0135
	5 and less than 10	-.07801	.06863	.256	-.2130	.0570
	More than 15	.03654	.08632	.672	-.1332	.2063
15years and above	More than 1 and less than5	-.18901*	.08081	.020	-.3480	-.0301
	5 and less than 10	-.11455	.07905	.148	-.2700	.0409
	10 and less than 15	-.03654	.08632	.672	-.2063	.1332
The mean difference is significant at the 0.05 level.*						

LSD Post-Hoc: Profession

Dependent Variable: Overall Status LSD Post-Hoc: Profession		Mean Difference (1-J)	Std. Error	Sig.	95 % Confidence Interval	
					Lower Bound	Upper Bound
Medical Professions	Nurse	-.17432*	.06468	.007	-.3015	-.0471
	Paramedical	.09428	.08878	.289	-.0803	.2689
	Administrative services	.09135	.07903	.249	-.0641	.2468
	Other services	-.01428	.07903	.857	-.1697	.1412
Nurse	Medical Professions	.17432*	.06468	.007	.0471	.3015
	Paramedical	.26860*	.08573	.002	.1000	.4372
	Administrative services	.26567*	.07558	.000	.1170	.4143
	Other services	.16004*	.07558	.035	.0114	.3087
Paramedical	Medical Professions	-.09428	.08878	.289	-.2689	.0803
	Nurse	-.26860*	.08573	.002	-.4372	-.1000
	Administrative services	-.00294	.09701	.976	-.1937	.1879
	Other services	-.10856	.09701	.264	-.2994	.0823
Administrative services	Physician	-.09135	.07903	.249	-.2468	.0641
	Nurse	-.26567*	.07558	.000	-.4143	-.1170
	Paramedical	.00294	.09701	.976	-.1879	.1937
	Other services	-.10562	.08817	.232	-.2791	.0678
Other services	Medical Professions	.01428	.07903	.857	-.1412	.1697
	Nurse	-.16004*	.07558	.035	-.3087	-.0114
	Paramedical	.10856	.09701	.264	-.0823	.2994
	Administrative services	.10562	.08817	.232	-.0678	.2791
.The mean difference is significant at the 0.05 level.*						

LSD Post-Hoc: Age group

Dependent Variable: Overall Status LSD Post-Hoc: Age Group		Mean Difference (1-J)	Std. Error	Sig.	95 % Confidence Interval	
					Lower Bound	Upper Bound
20 and fewer than 30	30 and less than40	.14875*	.05537	.008	.0399	.2576
	40 and less than50	.27328*	.07212	.000	.1314	.4151
	Above 50	.01410	.11184	.900	-.2059	.2341
30 and fewer than40	20 and less than 30	-.14875*	.05537	.008	-.2576	-.0399
	40 and less than50	.12453	.07327	.090	-.0196	.2686
	Above 50	-.13465	.11259	.233	-.3561	.0868
40 and fewer than50	20 and less than 30	-.27328*	.07212	.000	-.4151	-.1314
	30 and less than40	-.12453	.07327	.090	-.2686	.0196
	Above 50	-.25918*	.12170	.034	-.4985	-.0198
50 and above	20 and less than 30	-.01410	.11184	.900	-.2341	.2059
	30 and less than40	.13465	.11259	.233	-.0868	.3561
	40 and less than50	.25918*	.12170	.034	.0198	.4985
The mean difference is significant at the 0.05 level.*						

معاينة السلامة المهنية فى مجمع الشفاء الطبي

إعداد: شحادة رزق العجرمى

إشراف: د. خالد قحمان

ملخص الدراســـــة

مقدمة:

تعتبر السلامة بمفهومها الشامل والسلامة المهنية بشكل خاص حجر الزاوية لأى مؤسسة تسعى لحماية عامليها و عملائها من مخاطر العمل والوصول لبيئة عمل آمنة وخالية من المخاطر وذلك لتحقيق أهدافها, وحيث أن المؤسسات الصحية وخصوصآ المستشفيات تعتبر من أكثر أماكن العمل خطرآ ليس على العاملين فقط بل على المرضى و الزائرين, لذلك يجب أن تكون بيئة العمل فيها آمنة وخالية من المخاطر ليستطيع مقدمو الخدمات الصحية تقديم أفضل و أنجع الخدمات و بكفاءة وجودة عالية وصولآ لما يتمناه المرضى.

تعتبر هذه الدراسة الأولى من نوعها لتقييم وضع السلامة المهنية بمختلف أبعادها فى أكبر مجمع طبي حكومي يقدم الخدمات الطبية التشخيصية والعلاجية و التخصصية لسكان قطاع غزة وذلك بهدف معرفة واقع السلامة المهنية فيه, ومعرفة آراء وتصورات العاملين حول هذه القضية المهمة وصولا لتعزيز و تحسين وتطوير وضع السلامة المهنية فى المجمع بشكل خاص والمؤسسات الصحية بشكل عام.

المنهجية:

تم إجراء دراسة مقطعية وصفية تحليلية بتصميم كمي ونوعي باستخدام الاستبانات المعبئة بشكل فردى وقائمة الملاحظات الميدانية والمقابلات المعمقة كطرق لجمع البيانات؛ حيث تم اختيار عينة الدراسة بالطريقة العشوائية الطبقية النسبية المنتظمة من العاملين في المجمع من مختلف المهن الطبية والغير طبية والتي تم اختيارها بطريقة عشوائية. وقد استجاب 350 من حجم العينة المحسوبة والبالغة 370وبمعدل استجابة 94.5 %، وقد كان معدل الثبات الكلي لاستبانة الدراسة 0.93

نتائج الدراسة:

أظهرت النتائج أن غالبية المشاركين فى الدراسة كانوا من الذكور بنسبة 68.9%, وبلغت نسبة المتزوجون 75.4%, والغالبية العظمى كانت من الفئة الشابة 78.5% حتى عمر الأربعين سنة وحوالى الثلثين كان مستواهم التعليمي عالي بكالوريوس فما فوق وأكثر من ثلثي المشاركين لديهم خبرة عملية حتى عشرة سنوات. كذلك تبين النتائج أن النسبة الكبرى من المشاركين 32.9% كانوا من فئة التمريض, الأطباء شكلوا 26.6%, الخدمات الادارية والتنظيمية 15.4%, الخدمات الأخرى كالنظافة والتغذية والصيانة كانت 15.4%, بينما كانت النسبة الأقل من الفنيين 9.7%. أوضحت النتائج كذلك أن أكثر من ثلثي العاملين يعملون فى المستشفيات الرئيسية الثلاثة, حوالى 47.4% منهم يعملون

أكثر من 35 ساعة أسبوعآ, 21.7% استنفذوا حتى 6 مرات إجازات مرضية لها علاقة بطبيعة العمل و 24.9% تعرضوا حتى 6 مرات لحوادث أو إصابات عمل طوال فترة خدمتهم.

بينت النتائج أن الحالة العامة للسلامة المهنية كانت متوسطة وبمعدل 55.6% مما يعكس تصورات سلبية للعاملين انجاه قضايا السلامة المهنية في المجمع وهذا يعتبر عامل دافع للاهتمام بها وتعزيزها وتحسينها. كذلك أوضحت النتائج أن السلامة المهنية تتأثر بعدة عوامل منها الشخصية والأخرى تتعلق بمكان وطبيعة العمل داخل المجمع ومن أهم هذه العوامل هو التصورالسلبى لحوالي نصف المشاركين اتجاه ضعف التزام ودعم الإدارة العليا للمجمع وقلة اهتمامها بقضايا السلامة المهنية مع تأكيدهم بأن التزامها ودعمها واهتمامها يعتبر القلب النابض للنظام الإداري لأي مؤسسة وكذلك تأكيد حوالى نصف المشاركين يعدم وجود متابعة وجولات تفتيش دورية من قبل الجهات الرقابية مثل وزارة العمل والبيئة ونقابات العمال لقضايا السلامة المهنية فى المجمع وكذلك التأكد من مدى التزام الادارة العليا للمجمع بتطبيق السياسات والقوانين والأنظمة واللوائح الخاصة بالسلامة المهنية.

أكد أكثر من نصف العاملين بأنه لا يوجد سياسات أو لوائح أو قوانين أو إرشادات أو بروتكولات خاصة بالسلامة المهنية محددة وواضحة ومكتوبة ومطبقة وكذلك عدم توفر وسائل الوقاية واجراءات السلامة المهنية بالمجمع بالشكل الكافى وعدم تطابقها مع معايير السلامة المهنية الدولية بالإضافة لذلك فقد اشتكى العاملون من عدم توفر لجان خاصة بالسلامة المهنية تعنى بسلامتهم وحمايتهم من مخاطر العمل المتعددة, وكذلك أوضحوا بأنه ليس هناك سجل طبى فعال لحوادث و إصابات العمل ولا يوجد مشاركة للعاملين في إعداد الخطط و البرامج وكذلك لا يوجد وصف وظيفي واضح للوظائف المختلفة وليس هناك اجراءات انضباطية للعاملين الغير ملتزمين باللوائح والقوانين والإرشادات حيث أكد العاملون أن هذه العوامل المؤسساتية تعتبر من العوامل الأساسية والركائز التي تدعم و تعزز وتحفز و تحسن السلامة المهنية.

أظهرت النتائج أن المشاركين لديهم تصورات ايجابية بدرجة عالية اتجاه السلوكيات والتصرفات والممارسات والالتزام بقضايا السلامة المهنية واستخدام أدوات الوقاية المتاحة كم أكد الغالبية منهم (71.17%) حيث يطمح الغالبية من العاملين لتقديم أفضل الخدمات الصحبة في بيئة عمل آمنة وخالية من المخاطر مما يعكس إرادة قوية واستعداد و جاهزية للتطور في مهامهم ووظائفهم وخاصة المهارات المتعلقة بالسلامة المهنية. من ناحية أخرى أفادت النتائج بقلة البرامج التدريبية الخاصة بالسلامة المهنية حيث أفاد أقل من نصف المشاركين فقط (43.13%) بأنهم قد تلقوا دورات تدريبية تتعلق بأمور السلامة المهنية مما ينعكس سلبا على أدائهم و رضاهم الوظيفي وتقديمهم للخدمات الصحية بينما أكدوا بتصورهم بأن الاستثمار في التدريب يكسبهم المعرفة ويطور قدراتهم ومهاراتهم و يصقل سلوكهم وتصرفاتهم وممارساتهم ويزيد من التزامهم مما يساعدهم في حماية أنفسهم وعائلاتهم و مرضاهم ومؤسستهم من مخاطر العمل وبالتالي مجتمعهم ووطنهم.

مما لا شك فيه أن المؤسسات الصحية بشكل عام و المستشفيات بشكل خاص تعتبر من أكثر أماكن العمل خطورة ومليئة بعوامل الخطروالمخاطروالامراض المتعددة التي يتعرض لها العاملون أثناء تأديتهم لعملهم ومهامهم المختلفة فى أماكن عملهم ومن أهم هذه المخاطر تلك التى تتعلق بالعنصر البشرى مثل العمر والجنس والوضع الصحي وكذلك ظروف العمل والعوامل الفيزيائية والكيميائية والبيولوجية والنفسية والاجتماعية, حيث أفاد غالبية المشاركين بأنهم يعملون في

الإجازات, حوالي ثلاث أرباع المشاركين يتعاملون مباشرة مع المرضى والمرافقين ومثلهم يعملون واقفين لفترات طويلة, وحوالي ثلثي المشاركين يعملون بنظام المناوبات ومثلهم يستخدمون أدوات وآلات حادة.

إن مثل هذه العوامل التي يتعرض لها العاملون في المستشفيات تؤدى لمخاطر وأمراض متعددة قد يصابون بها ومنها ما قد يؤدى للغياب المتكرر أو ترك العمل أو إصابات مزمنة أو أحيانا الوفاة مما ينعكس سلبآ على العنصر البشرى الذى يعد الثروة الحقيقية والمحور الأساسي للإنتاج و المصدر الكامن لنجاح أى مؤسسة تسعى للتميز و تحقيق الأهداف مما قد يكلف المؤسسة أموالآ باهظة, ولكنه من الممكن تفادى مثل هذه المخاطر والوقاية منها إذا توفرت وسائل الوقاية والحماية المناسبة واللوائح والارشادات والقوانين الخاصة بالسلامة المهنية وعملت إدارة المؤسسة على توفيرها وتطبيقها والتزم العاملين باستخدام هذه الوسائل وتطبيق اللوائح والقوانين وكذلك تشكيل لجان خاصة بالسلامة المهنية ونظام متكامل لإدارة السلامة المهنية وخلق بيئة عمل آمنة وخالية من المخاطر. لقد بينت نتائج الدراسة أن من أهم هذه المخاطر والأمراض التي يتعرض لها العاملون في مجمع الشفاء الطبي كانت كالتالي:

(أولا): الأمراض المعدية المنقولة عن طريق الجهاز التنفسي والأمراض المعدية المنقولة عن طريق الجلد كما أفاد حوالى نصف المشاركين 49.7% وكان أغلبهم تعرضا فئة التمريض بنسبة 21.4% ونسبة الأطباء كانت 13.7% .
(ثانيا): آلام الظهر والعمود الفقري والعضلات والمفاصل كما أفاد حوالى ثلث المشاركين 30.8% وكانت أغلبيتهم كذلك من التمريض بنسبة 10.6% والأطباء بنسبة 6.3%.

(ثالثا): الوخز بالإبر والأدوات الحادة والأمراض المنقولة عن طريق الدم كما أفاد أكثر من ربع المشاركين (28.8%) حيث كان أكثرهم تعرضا فئة التمريض بنسبة 14.2%أما فئة الأطباء فكانت نسبتهم 5.7%.

(رابعا): ضغط العمل والعنف من المرضى والمرافقين كما أشار حوالى ربع المشاركين (24.4%) وكان أغلبهم من التمريض بنسبة (10.8%) والأطباء بنسبة 6.2%.

(خامسا): دوالي الساقين وكانت نسبة من تعرضوا 12%.

(سادسا): التعرض للمخاطر الكهربائية وكانت نسبة من تعرضوا حوالى 10%.

(سابعا): التعرض للمخاطر السرطانية كما أفاد حوالى 5.7% من المشاركين غالبيتهم من الأطباء بنسبة 2.9%.
(ثامنا): التعرض لمشاكل النظر حيث أشار حوالى 4.2% وكانت غالبيتهم ممن يعملون في الخدمات الإدارية. إن مثل هذه المخاطر والأمراض المهنية قد تعود لعوامل عديدة منها ما يتعلق بالعاملين أنفسهم وطبيعة عملهم ومنها ما يتعلق بظروف وبيئة مكان العمل. فقد توصلت الدراسة إلى أن هذه المخاطر والأمراض المهنية التى يتعرض لها العاملون فى المجمع تعود للعوامل التالية:

أولآ: عدم وجود قصم خاص أو لجان خاصة للسلامة المهنية فى المجمع

ثانيآ: قلة وسائل الوقاية وإجراءات السلامة المهنية وعدم توفرها بالشكل الكافى فى المجمع

ثالثآ: ندرة البرامج والدورات التدريبية الخاصة بالسلامة المهنية لتدريب العاملين على استخدام وسائل الوقاية وإجراءات السلامة المهنية

رابعآ: قلة التزام العاملين بتطبيق القوانين واللوائح الناظمة للسلامة المهنية بسبب عدم توفرها وعدم تطبيقها من قبل الإدارة العليا للمجمع,

خامسآ: قلة استخدام العاملين لوسائل الحماية وتنفيذهم لإجراءات السلامة المهنية بسبب قلتها فى المجمع

سادسا: قلة معرفة العاملين بوسائل الوقاية وإجراءات السلامة المهنية لقلة توعيتهم

من الملاحظ أن هذه العوامل فى الأساس تعود للمؤسسة وظروف بيئة العمل فى المجمع مما يستوجب من الجميع في كل المستويات المهنية والفنية والإدارية والتنظيمية والتشريعية والرقابية الأخذ بعين الاعتبار هذه العوامل والعمل على معالجتها وتحسينها والاهتمام الأكثر والمتابعة المستمرة والدعم المتواصل والالتزام الدائم بقضايا السلامة المهنية فى المجمع لما لها من أهمية بالغة على حياة العاملين وعائلاتهم والمرضى والزوار والمؤسسة والمجتمع ككل.

من ناحية أخرى فقد توصلت نتائج الدراسة من خلال قائمة الملاحظات المبنية على المعايير الدولية لإدارة الصحة والسلامة المهنية (أوشا) المنبثقة من منظمة العمل الدولية والتى تم جمع بياناتها من خلال جولات ميدانية على أقسام مبانى المجمع الرئيسي الثلاثة (مبنى الجراحات التخصصية, مبنى الجراحة 8 ومبنى الولادة) والتى قام بها أحد ضباط فريق مكافحة العدوى وتطوير الجودة بالمجمع مع الباحث حيث توصلوا إلى أن وسائل وإجراءات السلامة المهنية المتاحة فى المجمع ليست بالشكل الكافي وبعضها غير مطبقة كما ينبغى, حيث أن بعضها توافقت تماما وبدرجة عالية مع معايير الأوشا للسلامة فى أقسام المباني الثلاثة مثل معايير السلامة المتعلقة بوسائل الوقاية الشخصية واستخداماتها, والبعض الآخر لم يتوافق بتاتآ مع معايير الأوشا للسلامة مثل تلك المتعلقة ببرامج سلامة حركة الجسم, و كيفية التعامل والإبلاغ عن المخاطر, وخطة سلامة الفورمالديهايد وكذلك كيفية التعامل مع أسطوانات الغاز المضغوطة. بالإضافة لذلك بعضها توافقت بشكل متدنى للغاية مع معايير الأوشا للسلامة مثل تلك الخاصة بخطة الطوارئ والاخلاء, وخطة الحماية من الحرائق فى أقسام المباني الثلاثة, أما البعض الآخر فقد توافقت مع بعض معايير الأوشا لحد ما وبدرجات متفاوتة بين أقسام المباني الرئيسة الثلاثة حيث كان هذا التوافق الأفضل لحد ما فى مبنى الجراحات التخصصية وبشكل أقل فى مبتى الجراحة رقم 8, بينما كان الوضع الاسوأ فى مبنى الولادة على النحو التالي:

أولآ: مبنى الجراحات التخصصية: معايير السلامة الحالية الخاصة بالكهرباء توافقت مع معايير الأوشا بشكل جيد جداً, وبشكل جيد مع معايير السلامة الخاصة بأرضيات المشى والعمل ومعايير السلامة من الأشعة و كذلك معايير مخارج الطوارئ.

ثانياً: مبنى الجراحة 8: كان هناك توافق لمعايير السلامة الحالية الخاصة بالكهرباء وأرضيات المشى والعمل بشكل جيد لكل منها مع معايير الأوشا, أما بالنسبة لمعايير السلامة الخاصة بمخارج الطوارئ فقد توافقت بشكل متوسط, بينما توافقت بشكل متدني مع معاييرالأوشا الخاصة بالسلامة من الأشعة,

ثالثآ: مبنى الولادة: كان هناك توافق بشكل جيد مع معايير الأوشا فيما يتعلق بمعايير السلامة الحالية الخاصة بالكهرباء وبشكل متوسط بما يتعلق بمعايير السلامة الحالية الخاصة بأرضيات المشي والعمل, بينما كان التوافق بشكل متدني بما يتعلق بمعايير السلامة الخاصة بمخارج الطوارئ. إن قلة توافق بعض المعايير الحالية الخاصة بالسلامة فى المجمع تستدعى بشكل كبير وهام الحاجة الملحة للعمل على توفيرها وتطويرها وتحسينها وتطبيقها ضمن معايير تتوافق مع معايير السلامة الدولية مما يحد من مخاطر العمل ويحمى العاملين والمرضى والزوار من هذه المخاطر وصولا لتحقيق الهدف المنشود وهو خلق بيئة عمل خالية من المخاطر, صحية و آمنة.

كذلك أظهرت الدراسة أن هناك فروق ذات دلالة احصائية بين ادراك العاملين لمفهوم وقضايا ووضع السلامة المهنية الكلى وبين سنوات الخبرة لصالح العاملين الأقل سنوات خبرة, وكذلك هناك اختلافات في تصور العاملين لقضايا السلامة المهنية تعود لمكان العمل لصالح العاملين في مستشفى الجراحة, وكذلك هناك اختلافات في ادراكهم وتصوراتهم تعود إلى طبيعة عملهم (مهنتهم) لصالح التمريض. بالإضافة لذلك هناك فروق ذات دلالة احصائية تعود للعمر لصالح فئة الشباب, وللحالة الاجتماعية لصاح الغير متزوجين, وللمستوى التعليمي لصالح الأقل مستوى تعليمي وكذلك لصالح من يعملون بنظام المناوبات (صباحى, مسائي, ليلى). من جهة أخرى لا يوجد فروق ذات دلالة احصائية تعود للجنس أو ساعات العمل أسبوعيا.

من جهة أخرى فقد قام الباحث بإجراء مقابلات معمقة مع خمسة من المسئولين واصحاب الخبرة ويشغلون مناصب إدارية مختلفة فى المجمع, حيث تناولت المقابلات قضايا السلامة المهنية والعوامل المؤثرة عليها وكيفية النهوض بها وتعزيزها وتحسينها ولقد كانت آرائهم متوافقة وأكدوا على ما خلصت إليه الدراسة.

التوصيات

بعد الانتهاء من الدراسة تم وضع بعض التوصيات التى تهدف لتعزيز ودعم وتحسين والنهوض بواقع السلامة المهنية فى المجمع بشكل خاص والمؤسسات الصحية بشكل عام ومن أهم هذه التوصيات:

* قيام صانعي القرارات وواضعي الخطط والسياسات بوزارة الصحة النظر بأهمية بالغة لبناء نظام رقابة وتفتيش ومحاسبة متكامل وخاصة بما يتعلق بممارسات السلامة.

*قيام وزارة الصحة باتخاذ خطوات وإجراءات فعالة تهدف لتشجيع وتعزيز وترسيخ ثقافة السلامة فى المؤسسات الصحية.

* زيادة الوعى والفهم والمعرفة لدى العاملين والمدراء حول مفاهيم السلامة المهنية وأهدافها وقضاياها المختلفة والعوامل التى تجعلها فعالة.

* إنشاء وتشكيل وتفعيل وحدات وأقسام ولجان وفرق خاص بالسلامة المهنية فى المؤسسات الصحية بأسرع وقت ممكن وذلك لأهمية قضايا السلامة القصوى.

*دعوة وزارة الصحة بتأسيس وبناء نظام متكامل لإدارة الصحة والسلامة المهنية فى المؤسسات الصحية.

* دعوة الجهات الخارجية ذات العلاقة كوزارة العمل, وزارة البيئة, نقابات العاملين, نقابة العمال والمنظمات الأهلية والدولية بأخذ أدوارها المختلفة فى الرقابة والتفتيش والمتابعة والمحاسبة لقضايا السلامة المهنية فى جميع المؤسسات الصحية.

* ضمان توفر السياسات والتشريعات والقوانين واللوائح والبروتوكولات الخاصة بالسلامة المهنية وإلزام الجميع بتطبيقها وتنفيذها والالتزام بقواعدها وذلك لضمان الوصول لممارسات آمنة وسليمة على جميع المستويات فى المؤسسات الصحية.

* ضرورة وسرعة تزويد العاملين ببرامج ودورات تدريبية حول مفاهيم وأسس وقواعد السلامة المهنية والممارسات الآمنة وكيفية استخدام وسائل الوقاية وإجراءات السلامة المختلفة.

*خلق بيئة عمل آمنة من خلال تشجيع مشاعر القبول والتعاون والمشاركة.

* أن تولى وزارة الصحة المزيد من الاعتبارات للوصف الوظيفي بحيث يكون هناك تحديدا واضحا للمهام والمسؤوليات لمقدمي الخدمات الصحية من اجل تخفيف غموض الأدوار وزيادة المسائلة

*تشجيع مشاركة العاملين في عملية التخطيط لما له من أثر ايجابي على زيادة الالتزام لدى العاملين.

* تفعيل وتطوير نظام التوثيق الطبي للإصابات والحوادث والأمراض المهنية التى يتعرض لها العاملون فى المؤسسات الصحية.

* إن وزارة الصحة مطالبة بتفعيل القوانين التى تتضمن مبادئ التعويض والتأمين للعاملين فى حال تعرضهم لحوادث أو اصابات عمل.

* العمل على تطوير معايير السلامة القائمة فى المؤسسات الصحية لتتلاءم وتتوافق مع المعايير الدولية للسلامة المهنية.