Deanship of Graduate Studies

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Palestinian Nurses' Knowledge and Perceptions Regarding Occupational Hazards in Three Jerusalem Hospitals

Dalal Daoud Moqbel Zawahreh

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Prepared By

Dalal daoud moqbel zawahreh

Bachelor of Nursing Bethlehem University

Supervisor: Maysa Al Usta, PhD

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Thesis Approval

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Prepared by: Dalal daoud moqbel zawahreh

Registration No: 21911080

Supervisor: Dr. Maysa Al Usta, PhD

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The names and signatures of the examining committee members are as follows:

1- Head of Committee: Dr. Maysa Al Usta, PhD Signature:
2- Internal Examiner: Dr. Hazem Agha, PhD Signature:
3- External Examiner: Dr.Mohammad Shaheen,PhD Signature:

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Dedication

All life's challenges require striving. There are people who are closed to my heart, who have supported and helped me in this study. Therefore, this thesis is proudly dedicated to my precious family, who have been my source of creativity and have given me strength when I thought of giving up, who continually provide their endless love and support.

To my dearest friends and relatives who shared their encouragement for me to follow my dreams**,** throughout this educational level.

Dalal daoud moqbel zawahreh

Declaration

I certify that this thesis submitted for the degree of master in Policies and health management, is the result of my own research, except where otherwise acknowledged, and that this thesis (or any part of the same material) has not been submitted for a higher degree to any other university or institution

Signature : 

Name: Dalal daoud moqbel zawahreh

Date: 31/5 /2022

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Abstract

Background. Nurses are often exposed to occupational hazards because the nature of their work requires them to be in direct contact with patients and to deal with materials and tools that require extreme caution and care. It has been shown by many previous studies that the nursing staff must have full knowledge of occupational hazards that they may encounter, to perceive the seriousness of the work environment conditions and to take necessary measures and precautions to prevent exposure to workplace hazards.

Aims. The aims of this study are (1) to assess Palestinian nurses' levels of knowledge, perceptions and practices regarding occupational health hazards, (2) to examine whether there is a difference in Palestinian nurses' levels of knowledge, perceptions and practices regarding occupational health hazards related to their demographic characteristics (3) to examine whether there are relationships between nurses' knowledge, perceptions and practices regarding occupational health hazards.

Sampling. A convenience sample of 217 nurses currently working in three hospitals in Jerusalem were recruited to participate in this study.

Instruments. A self-administered questionnaire was adapted from previous studies to assess participants' sociodemographic characteristics, their knowledge, attitudes and practices about occupational health hazards.

Analysis. SPSS software was used to analyze data. Demographic variables were described using frequencies and percentages. Correlational analysis was used to examine the relationships between study variables, including Pearson/Spearman correlation coefficients, one-way analysis of variance (ANOVA) and regression analyses.

Results. Participants' levels of knowledge, perceptions and practices in regard to occupational hazards came in the high rank 3.30 (4), 2.87 (3), 81.3% respectively, indicating

that most participants had sufficient levels of knowledge, perceptions and practices in regard to occupational health hazards.

There were no statistically significant differences in the levels of participants' knowledge of occupational hazards related to their age, gender or years of experience. While there were statistically significant differences in their knowledge of occupational hazards related to their educational qualification.

There were no statistically significant differences in the nurses' perceptions of occupational hazards related to their age and years of experience. While there were statistically significant differences in their perceptions related to their gender and educational qualifications. There were no statistically significant differences in the nurses' practices regarding occupational hazards related to their age, gender, educational qualification, and years of experience. There was a statistically significant relationship between participants' knowledge, perceptions and their practices regarding occupational hazards.

Conclusion. Nurses' knowledge, and practices regarding occupational hazards are related to their educational qualifications. Knowledge, as well as perceptions of occupational hazards are related to their conscious practices of occupational hazards' prevention. It is important to raise the nurses' awareness about the occupational hazards and to follow clear plans and policies pertinent to occupational hazards' prevention in this study's targeted hospitals.

***Keywords*.** Knowledge, Perceptions, Practices, Nurses, Occupational hazards.

معرفة وتصورات الممرضين الفلسطينيين فيما يتعلق بالمخاطر المهنية في ثلاثة مستشفيات في القدس

إعداد الطالبة: دلال داوود مقبل زواهره

إشراف الدكتورة: ميساء الأسطة

الملخص

خلفية الدراسة: يعمل الطاقم التمريضي في بيئة عمل لا تخلو من المخاطر المهنية، فهم معرضون للمخاطر المهنية لأن طبيعة عملهم تتطلب منهم أن يكونوا في اتصال مباشر مع المرضى والتعامل مع مواد وأدوات تحتاج الى حذر وعناية شديدة، وهنا لا بد أن يمتلك الطاقم التمريضي المعرفة الكاملة بهذه المخاطر، ويكون لديهم تصورات حول خطورة ظروف بيئة العمل واتخاذ التدابير والاحتياطات اللازمة لمنع التعرض لمخاطر العمل.

هدف الدراسة: هدفت هذه الدراسة الى: (1) تقييم مستويات معرفة الطاقم التمريضي الفلسطيني وتصوراتهم وممارساتهم فيما يتعلق بمخاطر الصحة المهنية، (2) فحص ما إذا كان هناك اختلاف في مستويات (المعرفة، التصورات، الممارسات) لدى الطاقم التمريضي الفلسطيني فيما يتعلق بالمخاطر المهنية، وفقا لخصائصهم الديموغرافية (العمر والجنس والمؤهل التعليمي وسنوات الخبرة). (3) تحديد فيما إذا كانت هناك علاقة بين كل من (معرفة وتصورات وممارسات الممرضات) فيما يتعلق بالمخاطر المهنية.

مجتمع وعينة الدراسة: شمل مجتمع الدراسة جميع الطاقم التمريضي (499) العاملات في ثلاثة مستشفيات في القدس الشرقية. وهي مستشفى المقاصد ومستشفى مار يوسف ومستشفى أوغوستا فيكتوريا. تم اختيار عينة ملائمة بلغت (217) ممرضاً من العاملين في هذه المستشفيات.

أداة الدراسة: تم بناء استبيان كأداة لجمع البيانات بناءً على دراسات سابقة بموضوع الدراسة، حيث تحتوي أداة الدراسة / الاستبيان على الأقسام التالية:

(1) الخصائص الديموغرافية للطاقم التمريضي.

(2) فقرات تقيس معرفة الطاقم التمريضي بالمخاطر المهنية في مكان العمل.

(3) فقرات تقيس تصورات الطاقم التمريضي تجاه المخاطر المهنية.

(4) فقرات تقيس ممارسات الطاقم التمريضي تجاه الأخطار المهنية.

أسلوب التحليل: تم استخدام برنامج (SPSS) لتحليل البيانات. تم وصف المتغيرات الديموغرافية باستخدام التكرارات والنسب المئوية، ولفحص العلاقة بين متغيرات الدراسة تم استخراج معاملات ارتباط بيرسون / سبيرمان، وتحليل ANOVA وتحليلات الانحدار.

نتائج الدراسة:

- جاء متوسط معرفة الطاقم التمريضي وتصوراتهم وممارساتهم فيما يتعلق بالمخاطر المهنية في مستوى مرتفع، مما يعني أن معظم أفراد عينة الدراسة لديهم معرفة وتصورات وممارسات كافية فيما يتعلق بالمخاطر المهنية، حيث بلغت القيم 3.30 (4)، 2.87 (3)، 81.3% على التوالي.
- لا توجد فروق ذات دلالة إحصائية في المعرفة بالمخاطر المهنية تعزى للمتغيرات (العمر، الجنس، سنوات الخبرة)، وذلك بناء على قيم (F) المحسوبة والتي جاءت منخفضة، والتي بلغت (1.572 ، 1.131 ، 1.416) على التوالي. بينما أظهرت النتائج وجود فروق ذات دلالة إحصائية في تعزى لمتغير المؤهل العلمي.
- لا توجد فروق ذات دلالة إحصائية في التصورات تجاه المخاطر المهنية تعزى للمتغيرات (العمر، سنوات الخبرة). بينما أظهرت النتائج وجود فروق ذات دلالة إحصائية تعزى للمتغيرات (الجنس ، المؤهل العلمي).
- لا توجد فروق ذات دلالة إحصائية في الممارسات المتعلقة بالمخاطر المهنية تعزى للمتغيرات (العمر، الجنس ، المؤهل العلمي ، سنوات الخبرة).

الخاتمة: الممرضات هن من أكثر العاملين تعرضاً للمخاطر المهنية، بسبب الاحتكاك المباشر بالمرضى، والتعامل مع الأدوات والمواد الطبية الخطرة، إن معرفة وتصورات الممرضات لهذه المخاطر، وممارساتهم الواعية قد تقلل من تعرضهم لهذه المخاطر. ان النتائج التي تم التوصل إليها في هذه الدراسة، تتطلب من المستشفيات الفلسطينية المستهدفة في هذه الدراسة ان تعمل على رفع الوعي لدى الممرضات حول المخاظر المهنية وتاتباع خطط واضحة للتعامل مع المخاطر المهنية.

الكلمات المفتاحية: المعرفة، التصورات، الممارسات، الطاقم التمريضي، المخاطر المهنية.

Chapter one
Introduction

This chapter provides the background of the study regarding the study variables. It illustrates the problem statement, aim and objectives of the study, and research questions.

Background

Healthcare services require large numbers of workers and specialists including doctors, nurses, technicians, laboratory workers and psychologists (Chhabra, 2016). Healthcare workers represent 12% of the global working population and more people are joining the healthcare market (Ndejjo et al., 2015). During 2016, the United States' (U.S.) healthcare industry added 407,000 jobs (U.S. Bureau of Labor Statistics [USBLS], 2016). Namely, 254,000employments were added to ambulatory healthcare services and133,000 employments were added to hospitals, which raised the number of healthcare workers in the U.S. to nearly 45.5 million workers (USBLS, 2016). In Palestine, there are 13,969 healthcare workers (Glance, 2018) "that represent 6.9% of the total number of employees in the government sector, which amounted to 209,500 employees during the same year (Palestinian central bureau of statistics" (PCBS, 2019, p.1). More than 30% of the total number of workers in the health sector are nurses, which is equivalent to 4,362 nurses (Palestinian Ministry of health, Annual Report, 2018). Due to the large number of workers in the healthcare sector and due to their proximity to patients, healthcare workers are at high risk of experiencing work-related hazards (James &Adams, 2020).

Nurses serve in milieus that might expose them to various work-related hazards (Ndejjo et al., 2015), such as physical, biological, ergonomic, and psychosocial hazards (Hamid et al., 2018). Nurses are prone to physical hazards as the nature of their work requires them to be on the frontline in their work. Among the main physical hazards that nurses may endure are musculoskeletal disorders such as sprains, pain in the shoulders, lower back pain

and injury, and leg and hand muscle pain, since they are directly involved with patients' lifting, helping patients move between bed, chair and toilet, and transporting patients for diagnosis and treatment. Physical hazards are exacerbated by the increasing number of obese patients (Walton & Rogers, 2017).

Biological hazards occur due to exposure to microorganisms through direct or indirect contact with patients (e.g., coming in direct contact with patients' blood and body fluids, or sustaining a needle stick injury that may lead to blood-borne infections) (Hamid et al., 2018), whereas psychosocial hazards include stress and anxiety, sleep disturbances and violence at the workplace(Izadi, 2018). The Occupational Safety and Health Administration (OSHA) in the U.S. had reported that 20% of nurses left their work sites due to risks of exposure to work hazards (Mohanty, Kabi, &Mohanty, 2019).

Healthcare workers' awareness, especially nurses' awareness of the seriousness of the work environment conditions and taking the necessary measures and precautions to prevent exposure to work hazards are of high importance (Elbilgahy et al, 2019). But, findings from previous studies were not consistent about the role of nurses' awareness in preventing workplace hazards. For example, in a Nigerian study that aimed to evaluate workplace hazards and safety practices by selected healthcare workers in a typical health care facility (HCF), it has been shown that most of 290 participants (89 %) were knowledgeable about hazards in HCFs. and the great majority of the respondents (96.2 %) believed they were at risk of occupational hazards. However, only 52.1 % "always" complied with standard procedures and 40% of those who did not safely dispose of sharps generally implicated lack of basic safety equipment. Also 70 % of the study participants reported recapping used needles (Aluko et al., 2016), which showed that knowledge was not the determinant factor of nurses' compliance with safe sharps' handling. The study results of Thenmozhi and Deepa (2019) indicated that the great majority of the surveyed staff which

are (60) nurses, 50 nurses (83%) had adequate level of knowledge about hazards in the workplace, 10 nurses (17%) had moderately adequate knowledge and no nurses had inadequate knowledge, and levels of knowledge were significantly associated with qualification and years of experience. On the other hand, Ahmed and Shareef (2019) found that nurses did not have adequate knowledge regarding occupational health and safety measures, and that nurses experienced different types of hazards during their working years, such as: physical, psychological, chemical and biological hazards. Results of a study that was conducted on 300 nurses in Kerbala City in South-Central Iraq had illustrated that about (84%) had adequate knowledge, but only 35% of nurses had a good practice, 34% had fair level of practice, and 31% had poor practice regarding precautions against occupational health hazards at Karbala hospitals (Faris et al., 2018).

In Palestine, limited number of published studies that examine nurses' exposure to occupational health hazards were identified. For example, it was found that 43.0% of 114 surveyed nursing students reported that they were exposed to x-rays during clinical training in the radiology departments (Eljedi, 2015). Results of another study conducted in operation rooms in a private and in public hospitals in north Palestine revealed that 34.4% of 24 nurses felt sharp back pain, and 18.8% felt back spasm, (Anabtawi, Al-Amoudi, Hammad, Amro, 2017). Hazards were increased by improperly adjusted workstations and chairs, frequent lifting, improper movement, long shift hours and poor posture that led to multiple skeletal muscle disorders (Al-Khatibet al., 2015). Results of another study conducted on 230 health care providers in the European Gaza Hospital had shown that the majority of respondents (64.1%) reported that long standing during work is a high ergonomic risk (Abu saqer, 2014).

Problem statement

Identifying hazards' perceptions in the work environment is the primary tool for changing attitudes and behaviors and creating a safe and healthy workplace (Zainudin, 2019; Oluoch et al 2017). However, there is a lack of studies on Palestinian nurses' knowledge about occupational hazards and on how Palestinian nurses perceive and describe occupational hazards. This study aims to assess Palestinian nurses' levels of knowledge about occupational hazards, to assess how Palestinian nurses perceive physical, biological, ergonomic, and psychosocial hazards in the workplace, in addition to assessing how nurses perceive institutional regulations regarding prevention of occupational hazards, and whether these perceptions relate to nurses practice to protect themselves from these hazards.

Significance of the Study

The health and safety of nurses in the workplace is one of the topics that any organization should focus on and give the necessary attention (Joshua & Karkada, 2017). Nurses' physical and psychological safety is necessary to enable them to provide optimal care to patients (Joshua & Karkada, 2017). Nursing is a profession that is mainly concerned with the care of patients, and nurses are the direct caregivers of the patients. Nurses experience a higher rate of workplace hazards than other health care workers (Thenmozhi & Deepa, 2019). No published studies about Palestinian nurses' awareness and perceptions of occupational hazards could be identified. Therefore, the aim of this study is to bridge the gap in knowledge related to nurses' awareness and perceptions of occupational hazards in Palestinian hospitals, shed light on nurses' practices in regard to occupational hazards, with implication of informing policy makers about the importance of raising awareness among nurses about occupational safety and providing safe work environment.

The importance of this study is demonstrated by statistics that one of the most common of these hazards is upper back pain at a rate of (77%) annually (Ndejjo et al., 2015).

Also, needle-stick injuries threaten the health of nurses, it is estimated that (600000-800000) needle stick injuries occur each year in all healthcare settings around the world, Injections (21%), suturing (17%), and drawing blood (16%) are the main causes of exposures (Alavi, 2014).The study will also provide baseline data to researchers, and provide necessary information about the level of nurses exposure to occupational hazards in East Jerusalem hospitals, thus informing decision-makers about nurses' status of knowledge, perceptions and practices, which may help in designing programs that might increase workplace safety in Palestinian hospitals.

Study Aims

Aim 1. To assess Palestinian nurses' levels of knowledge, perceptions and practices regarding occupational health hazards.

Aim 2. To identify the diseases and health problems related to occupational hazards**,** from the nurses' point of view.

Aim 3. To examine whether there is a difference in Palestinian nurses' levels of knowledge about, their perceptions of, and their practices regarding occupational hazards' prevention in relation to their demographic characteristics including age, gender, educational qualification, and years of experience.

Aim 4. To examine whether there is a relationship between Palestinian nurses' knowledge, their perceptions regarding occupational health hazards and their practices to prevent occupational hazards.

Study Questions

Question 1. What are the Palestinian nurses' levels of knowledge, perceptions, and practices about occupational health hazards?

Question 2. What are diseases and health problems mostly related to occupational hazards, from the nurses' point of view?

Question 3. Is there a difference in Palestinian nurses' levels of knowledge regarding occupational hazards related to their demographic characteristics including age, gender, educational qualification, and years of experience?

Question 4. Is there a difference in Palestinian nurses' perceptions of occupational hazards related to their demographic characteristics (age, gender, educational qualification, and years of experience)?

Question 5. Is there a difference between Palestinian nurses' practices regarding occupational health in relation to their demographic characteristics (age, gender, educational qualification, and years of experience)?

Question 6. Is there a relationship between Palestinian nurses' knowledge and their perceptions of occupational health hazards?

Question 7. Is there a relationship between Palestinian nurses' knowledge and their practices in relation to occupational health hazards' prevention?

Question 8. Is there a relationship between Palestinian nurses' perceptions and their practices in relation to occupational health hazards' prevention?

Chapter Two

Literature Review

This chapter includes the theoretical literature on the occupational hazards that the nurses may be exposed to in hospitals, and defines the study concepts related to knowledge, perceptions and practices towards occupational hazards, as shown by previous studies in this regard.

Occupational Hazards

Hazard is a situation that poses a level of threat to life, heath, property or environment, and is a potential source of harm or having adverse health effects on a person (purohit et al, 2018). Occupational hazards have transformed nursing to a dangerous occupation, and occupational hazards have become among the main reasons that lead nurses to leave the profession (Aluko et al, 2016). Some interventions, including greater access to patient lifting and transfer devices and more use of safe needle devices can improve the situation (Alavi et al, 2014).

According to Amosun et al (2013), the factors that contribute to occupational hazards in healthcare facilities include lack of awareness by healthcare workers (HCWs), lack of adequate protective aids and equipment, inadequate number of staff in the different sections of the facility, excessive workload, failure to observe basic safety and hygiene guidelines and inadequate operational knowledge of modern healthcare equipment. So that every healthcare setting should address this important issue and give priority to nurse's safety.

Occupational Health Hazards in Health Care Facilities

A healthy workplace is an important component of promoting and improving occupational health standards so that working conditions are constantly improving for workers, the healthy workplace provides a stimulating and satisfactory environment for workers to perform their job tasks optimally, but despite that, the healthy work environment

is not without hazards, defines a situation that poses a level of threat to life, heath, property or environment, and is a potential source of harm or having adverse health effects on a person (purohit et al, 2018). Especially in medical institutions, and therefore these institutions must take all the elements of occupational health and safety, and develop safety policies and programs occupational health for the welfare of its workers (Oluoch, Njogu and Ndeda, 2017).

Yesilgul et al (2018) showed that, many negative circumstances, risks and dangers in work environments cannot be prevented. Therefore, nurses and other health care professionals can be exposed to diseases, work accidents and injuries arising from these dangers, and institutional and individual precautions should be taken and training should be organized to protect the health of nurses.

So that, Hazards are an inveterate property of a substance, source or situation that has the possibility of causing undesirable effects. In this regard, occupational hazards refer to workplace activities that have the potential to cause or increase the risk of injury for employees or ill them health (Aluko et al, 2016). This affects workers in different occupations as a result of their exposure to different types and varying degrees of hazards in the workplace. However, studies indicate that workers in some jobs especially nursing sectors have the highest risk of exposure to high-risk occupational hazards (bell et al, 2013).

Hazard is something that has potential to cause harm to people and the environment if not controlled. While occupational hazard is hazard experienced in the workplace or in the course of performing your job (Obono, 2019).

Shrestha, Manandhar, and Joshi (2020) define occupational hazard as a risk harming the health of the workers at the workplace either immediately or after prolonged exposure.

Also, Occupational hazards refer to any activities that have the possible cause or increase the risk in workplace (Faris et al, 2018).

In another definition, Occupational hazards are defined as workplace issues that have likely to raise the hazard of employee's health, which can be categorized as biological and non-biological (Amare et al, 2021).

According to Amosun et al (2011), the factors that contribute to occupational hazards in HCFs include disregard and carelessness of health care workers, lack of enough protective aids and equipment, inadequate number of employees, excessive workload, and failure to observe basic safety and hygiene guidelines, and inadequate operational knowledge of modern healthcare equipment.

Types of Hazards

Workers in the workplace, are exposed to various hazards that negatively affect their health and optimal performance of their tasks, and these hazards arise due to long working hours, shifting work shifts, tasks that require physical effort, exposure to stress and chemical and biological substances (Sunuwar, 2020).

So that, there are different types of occupational hazards that workers are exposed to in the workplace, and they are almost common in different professions, the most prominent of which are physical, chemical, biological, mechanical and ergonomic hazards. (Shrestha, Manandhar, Joshi, 2020).

This is especially true for nurses', who are constantly exposed to occupational hazards such as physical, biological and chemical hazards during the process of providing health care to patients, which requires evaluating the awareness of nurses about different types of hazards, and transferring the required knowledge to them, because the nurses' awareness of occupational safety and health hazards contributes to the quality of patient care (Prajwal, Kanakavalli, Sujay, 2020).

The predominant hazards to health care workers (HCWs) include blood-borne infections [Human Immunodeficiency Virus (HIV), Hepatitis B virus (HBV) and Hepatitis

C virus (HCV)], back and neck pain, burn-out stress, allergic reactions to latex materials, spills from chemicals, exposure to radiation, assault from patients; among others (Aluko et al, 2016).

This is what Faris et al (2018) emphasized when they pointed out that health care organization like other high-risk workplace is characterized by exposure to a high level of hazardous agents that significantly endanger the health status and life of health care workers, and in health care settings, the occupational hazards are categorized into physical, psychosocial, biological, mechanical, ergonomic, and chemical hazards.

Also, Obono et al (2019) see that healthcare workers (HCWs) are exposed to daily numerous occupational hazards basis which significantly endanger the health and life of the workers. And most of these hazards that are often ignored range from biological hazards (blood and body fluids), chemical hazards (e.g. lead, arsenic), physical hazards (e.g. noise, radiation), ergonomic hazards (e.g. lifting heavy objects), psychological hazards (e.g. violence, stress).

On the other hand, Amare (2021) found that major areas in which nurses' perform hazardous tasks were injection, cleaning, patient care, bed making, cleaning and dressing of wounds, medication administration, and performing operations. During performing these activities, healthcare providers are exposed to many types of hazards including physical, chemical, mechanical, and biological hazards. So that, it is mandatory to train all nurses before clinical practice about safe work practices and proper use of personal protective equipment.

Managing Occupational Health and Safety

Occupational health and safety is a discipline with a broad scope involving many specialized fields such as physical, psychological, chemical, biological, and mechanical/electrical, which determines the health and safety of employees in a broader context (Prajwal, Kanakavalli, Sujay, 2020).

Occupational safety and health (OSH) is a very important issue that must be taken into consideration in any working environment. For the avoidance of hazards, so that OSH rules and regulation should be implemented in the workplace (Dhahir and Al Mayahi, 2021).

On the other side, Occupational health and safety is an important issue because of high rates of associated morbidity and mortality of exposed workers (Aluko et al, 2016). Therefore, it is required to properly manage occupational health hazards, by identifying and evaluating the nature of all possible hazards, and thus developing appropriate mechanisms and methods for how to deal with these hazards, and this is largely determined by the level of hazards awareness among various stakeholders, including employers, workers and trade unions (Rikhotso, Morodi and Masekameni; 2021).

Also, occupational hazards can be managed and reduced by implementing number of programs such as; training, and education of the nurses and other healthcare workers. In addition, safety awareness, health maintenance, investigation of accidents' stress management, health promotion, and rehabilitation programs (Faris et al, 2018).

Determinants of Occupational Hazards for Nurses

Nurses' Knowledge

Knowledge is information acquired through experience and/or education (Aluko et al, 2016). Knowledge of occupational hazards and safety in healthcare facilities is germane to forming positive attitude that will inform behavior (Amadhila et al, 2017). On the other hand, Nurses' knowledge about occupational hazards is all of information nurses possess

about the work environment, and the nature of the risks that they may be exposed to while carrying out their duties in workplace (Sabita et al, 2018).

Nurses' knowledge of the nature of occupational hazards includes their ability to distinguish between different types of physical, chemical, biological and psychological risks, in addition to the methods of transmission of chemical and biological hazards, as well as their knowledge of the importance of taking preventive measures while dealing with patients (Obono et al, 2019).

Nurses' knowledge of occupational hazards during work, constitutes an incentive for them to take precautionary measures to prevent and avoid work hazards, for example knowledge of the dangers of needle pricking prompts nurses to pay attention and take utmost caution when administering the needle to the patient, and this would provide a safe work environment for nurses far from risks, so that nurses knowledge of occupational hazards plays a key role in prevention of hazards (Sabita et al, 2018).

On this side, Prajwal, Kanakavalli, and Sujay (2020) show that, healthcare workforce, especially nurses get exposed to physical, chemical, biological, and psychological hazards while discharging their duties, thus they are demanding for proper knowledge and awareness for these hazards and how to access and address them during the jobs.

Nurses' Perceptions

Nurses' perceptions are defined as Nurses' ability to be aware of everything around them in the workplace, including hazards (Aljedaani, 2017). By investigating nurses' perceptions, it is possible to identify gaps in their care knowledge and activities, thus developing this knowledge through training (Stolt et al, 2018).

According to Norman and Sjetne (2017), Nurses' perceptions of their work environment may include a range of different phenomena that are comprise the environment

in which the nurses' work, such as Organizational structure, leadership, organizational climate and training.

Nurses' perceptions about occupational hazards are closely related to the nurses' practices about these hazards, as the extent of knowledge of the nature and causes of the occupational hazards, and the extent of nurses perceptions of these hazards, push them to implement good practices to prevent and avoid these hazards (Aluko et al, 2016), for example, the perceptions of nurses and their knowledge about the dangers of pricking the used needle drives them to disposing of the used needles in a safety place after using (Rosario et al, 2013).

Nurses' Practices

As a concept, practice can be considered a rather abstract construct, and it is poorly understood and inconsistently interpreted, the scope of nursing practice describes the professional responsibilities and roles of the nurses, and provides the foundation for establishing standards of nursing job (Boman and Levy-Malmberg, 2020).

Amadhila et al (2017) indicated that nurses' practices to avoid occupational hazards must include taking a number of precautionary measures, such as: disposing of used needles and sharp tools in a safe and waterproof place, in addition to immunization from infectious diseases such as hepatitis C, and attention to correcting body mechanics when lifting, moving and transporting patients, as well as washing hands frequently and wearing gloves and masks. So that nurses' practice can be defined as the factors that address working conditions or organizational characteristics in the environments where nurses work (White et al, 2008).

Demographic variables and nurses' knowledge, practices and perceptions regarding occupational hazards

A number of studies have indicated the relationship between demographic variables such as (age, gender, educational qualification, and years of experience), and nurses knowledge, practices and perceptions regard to occupational hazards

The study of Obono et al (2019) which aimed to assess the knowledge and perception of healthcare workers on the occupational hazards in their workplaces, showed that there was statistically significant association between gender and work experience in relation to safety practice.

Ahmed and Shareef (2019) found that there is a relationship between nurses' years of experience and their overall knowledge on occupational health and safety measures in hospital. Considering that the more years of experience of the nurses, and the greater their training programs during their period of work in the hospital, the more knowledge they have of occupational hazards, and therefore they can avoid these hazards better than their peers who do not have sufficient or less years of experience.

However, the study of Faris et al (2018) which aimed to evaluate nurses' knowledge, attitude and practices regarding occupational health hazards at Karbala teaching hospitals. It found that there was significant association between nurses' knowledge, attitude and practices with their years of experience.

From the above, it becomes clear to the researcher that previous studies indicated the existence of a relationship between demographic variables and nurses knowledge, practices and perceptions regard to occupational hazards, which is a direct relationship in most cases, and from here this study seeks to determine whether this relationship applies to nurses working in Jerusalem hospitals or not, which is what the researcher will seek to Prove it during the next chapter of the study, which is the data analysis chapter.

Conceptual Definitions

1. **Nurses' Knowledge:** All information nurses possess about the work environment, and the nature of the risks that they may be exposed to while carrying out their duties in workplace (Sabita et al, 2018).

2. **Nurses' Perceptions:** A state of mental readiness of the nurses, which represents their responses to occupational hazards, and ability to be aware of hazards in the workplace (Aljedaani, 2017).

3. **Nurses' Practices:** way nurses deal with working conditions or organizational characteristics in environments in which they work, including taking precautionary measures to prevent exposure to occupational hazards (White et al, 2008).

4. **Nurses' socio-demographic:** It is the set of personal characteristics that distinguish Nurses' working in the workplace in terms of age, educational qualification, level of experience and other characteristics (Alan and Baykal, 2018).

Operational Definitions

1. **Nurses' Knowledge**: To assess the level of nurses' knowledge about occupational health hazards in three Palestinian hospitals, the researcher used adapted questionnaire to measure the level of Nurses' Knowledge, includes (11) items and was categorized into (4) answers as: (High level, Moderate level, Low level, and No knowledge)
2. **Nurses' Perceptions:** To assess the level of perceptions among the nurses toward occupational health hazards in three Palestinian hospitals, the researcher used adapted questionnaire to measure the level of Nurses' Perceptions, includes (17) items and was categorized into (3) answers as: (Agree, Undecided, and Disagree).
3. **Nurses' Practices:** To assess the level of Practices among the nurses toward occupational health hazards in three Palestinian hospitals, the researcher used adapted questionnaire to measure the level of Nurses' Practices, includes (10) items and was

categorized into (2) answers as: (yes, and no).

There are some theories that explained the relationship between knowledge, perception, behavior or practices, the most prominent of which is the Knowledge, Attitude, Perception (KAP) theory, is a health behavior change theory, proposed in the 1960s (Ude-Akpeh and Edith, 2017), which was based on building the conceptual framework of this study.

KAP theory is divided into three main processes, which are the acquisition of knowledge, the perception to generate attitudes and the formation of behavior. The theory presents the progressive relationship among knowledge, attitudes (perception) and behavior (practices) as follows: knowledge is the foundation of behavior change, and attitudes are the driving force of behavior change or practices (Fan et al, 2018).

The conceptual model in Figure 1 has been exploited for the purpose of demonstrating the hypothesized relationships between the study variables. Based on the study of Muleme et al (2017). It is shown through the conceptual framework model that practices can be changed by adjusting knowledge and perceptions.

This conceptual framework assumed linear relationship between sociodemographic characteristics, knowledge, perceptions, and practices. The lack of knowledge assessed as function of awareness or familiarity of occupational hazards is assumed to influence the nurse's perceptions about occupational hazards. Thus, influence the nurse's practices to avoid these hazards. So that, if nurses are well informed and if they have positive perceptions about preventing occupational hazards, they were expected to perform practices that prevent exposure to work hazards and to preserve their safety in the workplace.

Conceptual Framework

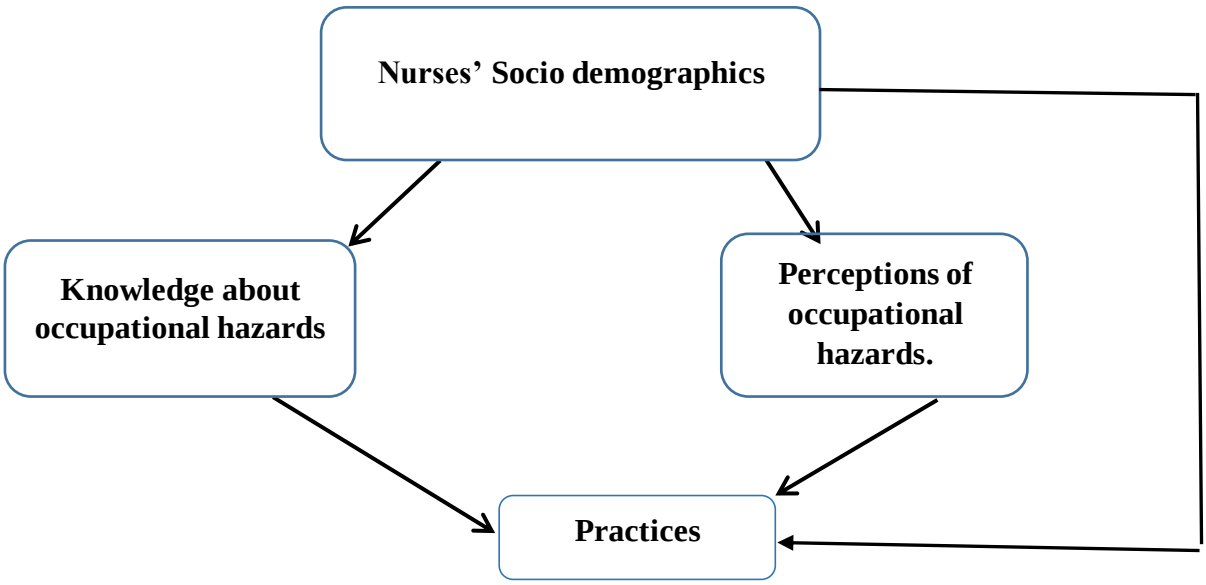

***Figure (3.1)*. Conceptual Framework for the Nurses' Knowledge and Perceptions Regarding Occupational Hazards.**

Summary

In Summary, the theoretical review of the literature and previous studies related to the subject of the study showed that workers in the nursing profession are exposed to many occupational hazards in the workplace, including physical, psychological and chemical hazards, and therefore nurses must have sufficient knowledge and clear perceptions about the nature and causes of these hazards, in order to be able to follow good practices to prevent and avoid these hazards, and this requires increasing nurses experience in this field and training them to deal with these hazards in the best way.

Chapter three
Methodology

Introduction

This chapter provides a brief description of the methodology process, study design, tools, sampling and population, data collection, and the data analysis. It described the methods used to design and implement this study. The contingent factors of the setting; participants and processes implementation during the data collection phase are explained; the sections of the instrument used are discussed, including validity and reliability.

Study Design

A descriptive cross-sectional design was employed to answer the study questions and to test the study hypotheses. The demographic characteristics of the participants were tested for being related to Palestinian nurses' levels of knowledge, perceptions and practices in regard to occupational hazards. Participants of this study were recruited from three Palestinian hospitals in Jerusalem.

Study setting

Population of study included all nurses working in three east Jerusalem hospitals. Namely, Al Makassed Islamic Charitable Society hospital (Al Makassed), Saint Joseph hospital, and Augusta Victoria hospital (AVH).

Al-Makassed Hospital. Al Makassed is a Palestinian hospital in East Jerusalem that operates under the auspices of the Makassed Islamic Charitable Society. Founded in 1968 and licensed for 250 beds. It is one of the main referral hospitals for the Palestinian community of Jerusalem, West Bank, and Gaza Strip. Al Makassed hospital provides a range of specialized medical services, including internal medicine, general and specialty surgery (such as adult and pediatric cardiovascular and thoracic surgery, obstetrics & gynecology,

fetal medicine, neonatology, pediatrics with its various specialties including genetic diseases, thoracic, gastrointestinal diseases, endocrinology, rheumatic and metabolic diseases, radiology department, emergency, out-patients, central laboratory, blood bank and a pathology lab. In addition, Al-Makassed also serves as a main teaching and training hospital for participants from Al-Quds University as well as providing research facilities. (Human resources of Hospital, 2020)

Augusta Victoria Hospital. AVH is a major medical facility in Jerusalem built after the 1948 war in order to care for Palestinian refugees. Specialty departments that account for the majority of work at the hospital are the cancer care center, the hematology, and bone marrow transplantation care center, the artificial kidney unit (dialysis), the surgical care and ear, nose, throat center, the diabetes care center, the specialized center for child care, and the skilled nursing and long-term (Sub-Acute) care facility. These care centers provide specialized treatments that are not available in the majority of hospitals in Palestine. The hospital currently has 118 inpatient beds and 52 ambulatory beds and stations, (surgical, oncology, internal medicine, and endocrine clinics). (Human resources of AVH Hospital.2020)

Saint Joseph Hospital: It was established in 1948 in the heart of Jerusalem, "Sheikh Jarrah," by the Sisters of Saint Joseph with the aim to provide excellent health care to all the Palestinian people from different cities of historic Palestine, Saint Joseph Hospital had been providing services for more than 72 years with 154 beds capacity.

Because the hospital has a good reputation of the health services it provides and of the medical and health staff working in it. The hospital is competing in its specifications and standards with the largest hospitals in the region, which in turn raises the demand on the hospital services, and encourages Palestinian patients to seek treatment in the hospital. Saint

Joseph Hospital's vision and leadership provide integrated health care by providing the best medical services of the highest quality. (Human resources of Saint Joseph Hospital, 2020)

Study population

The study population included all nurses currently working in three East Jerusalem hospitals, which were Al Makassed hospital, Saint Joseph hospital, and Augusta Victoria hospital. According to the human resources departments in the aforementioned hospitals (2021), the current number of working nurses is (499) nurses and all of them were eligible to participate in the study except part-time nurses.

Study Sample

A convenience sample was selected from currently working nurses in the three East Jerusalem hospitals, where the sample size was determined according to Sekaran's table, which had been designed for determining the sample size (Sekaran, 2003). The appropriate and representative sample size for the study population of (500=499) persons was 217 participants, which was the minimum number needed to examine the study hypotheses. Table (3.1) shows the number of nurses in each of the three hospitals and the proposed number of nurses to be included in the samples from each hospital.

Inclusion criteria

All nurses working in three hospitals in East Jerusalem, which are: Al Makassed hospital, Saint Joseph hospital, Augusta Victoria hospital, regardless of their experience.

Exclusion criteria

Part-time nurses: This is because nurses working under the part-time system may not fully understand the occupational hazards, and are not under much pressure at work, because their work is for short periods, unlike full-time nurses who work for longer periods and are

exposed to more occupational hazards, this in line with the findings of Giurgiu et al (2016) study, which indicated that longer working time enhanced a greater work load and more stress, Thus, more occupational risks. Also, this category of nurses (Part-time nurses) works in more than one hospital, therefore, including them in the study sample does not give accurate results, as the policy of each hospital in preventing work injuries may be different.

Table (3.1): Nurses' distribution in East Jerusalem hospitals (sample)

No.	Hospital name	Population *	Sample
1	Al Makassed hospital	185	80
2	Saint Joseph hospital	144	63
3	Augusta Victoria hospital	170	74
Total		**499**	**217**

*Source: Human resources departments in the hospitals, 2021.

Study tool

The questionnaire that was employed to collect data had included a set of questions that measured the socio demographic characteristics of the study sample, in addition to 3 sets of items that aimed to assess the levels of nurses' knowledge, perceptions and practices about work hazards. A number of previous studies were used to prepare the study tool, which are: Ahmed and shareef (2019); Obono et al (2019); and Aluko et al (2016).

- The study of Ahmed and shareef (2019): The questionnaire was used as a tool for collecting data from the study sample. Which came in two parts: The first part included socio-demographic attributes of the participants. Occupational Health and Safety Measures, Occupational health Hazards and supportive activities were the main domains in the second part of the questionnaire.

- The study of Obono et al (2019): The questionnaire was used as a tool for collecting data from the study sample. Which came in 3 parts: (1) Social demographics. (2) Knowledge and perception of hazards by the HCW. (3) Attitudes and Safety practices of

HCW on exposure to occupational hazards and measures taken after exposure.

- The study of Aluko et al (2016): The questionnaire was used as a tool for collecting data from the study sample. Which came in 4 parts: (1) Socio-demographic characteristics of respondents. (2) Knowledge of respondents on occupational hazards. (3) Attitude of respondents towards occupational hazards and safety practices. (4) Perceived risk of occupational hazards.

The final version of the structured questionnaire was constructed after testing for validity and reliability of the constructed questionnaire that contained the following sections:

(1) Socio demographics for nurses: It is the set of personal characteristics that distinguish Nurses' working in the workplace, in this study the researcher used variables age, gender, educational level, hospital name, work place, years of experience.

(2) Nurses' knowledge about workplace occupational hazards contained (11) items with responses categorized into 4 levels: "High level", "Moderate level", "Low level", and "No knowledge", to assess the level of nurses' knowledge about occupational health hazards in three Palestinian hospitals. The scale of "knowledge was constructed according to the two previous studies: Ahmed and shareef (2019) and Obono et al (2019).

(3) Nurses' perceptions of occupational hazards: used (17) items with responses categorized into 3 levels: "Agree", Undecided, and Disagree), to assess the level of Perceptions among the nurses toward occupational health hazards in three Palestinian hospitals. The scale of "perceptions was constructed according to some previous studies like: Obono et al (2019).

(4) Nurses' practices towards occupational hazards: used 10 questions with 2 responses of "yes", and "no" to assess the level of Practices among the nurses toward occupational health hazards in three Palestinian hospitals. the scale of "practices was constructed

according to some previous studies like: Obono et al (2019) and Aluko et al (2016)

Data Collection Method

The study relied on primary data, which was collected from the study sample using the questionnaire that had been prepared for this purpose. Data collected was cleaned and checked for completeness and accuracy before analysis.

After obtaining the ethical approval from the Scientific Research Committee at Al-Quds University and from hospitals' administrations. All full-time working nurses in the three hospitals were invited to respond to the study questionnaire and were provided with a consent form that included all information about the study. Participation in the study was voluntary. No name or personal documentation or identification was included during data collection process. Nurses' acceptance to participate in the study have been considered a consent for participation. The consent form included the purpose of the study. And emphasizing that it is for scientific research purposes only. Participants were informed that they will not be exposed to any potential harm as a result of their participation in the study, and they were assured that all information they provided would be confidential and would not expose them to any potential accountability at work or a threat to their job. The contact information of the principal investigator was provided.

Pilot study

The pilot study is to assess the safety of data processing, and thus asks whether it is necessary to proceed with conducting the study, or whether there is a need to make some modifications. However, a pilot study is conducted on a smaller scale than the main or full-scale study. In other words, the pilot study is important for improvement of the quality and efficiency of the main study by investigate the validity of the research instrument and its suitability for the measurement of the study variables, face validity and reliability of the tool.

A pilot study is performed either as an external pilot study independent of the main study or as an internal pilot study included in the research design of the main study (Junyong, 2017).

For the purposes of preparing the pilot study, the researcher distributed the questionnaire to a sample outside the study population, this sample was 28 nurses working in the Arab medical association Beit-Jala, who met the conditions and characteristics of preparing the main study, and the results were as follows:

Testing for Validity and Reliability

Validity of the tool

According to Santosa, Marchira, Sumarni (2017), validity test was done, namely the face validity, and the Pearson's correlation between items and the total score. Which is as follows:

Face Validity of the Research Instrument

First, the researcher referred to a number of recent published researches to take advantage of the study tool included in these studies, where the researcher updated the paragraphs of the questionnaire for each study related to the nurses' knowledge, practices and perceptions with regards to occupational hazards, and took the appropriate paragraphs for this study in the Palestinian environment.

Second, in order to investigate the validity of the research instrument for collecting data, a face validity test was conducted through presenting the questionnaire to 6 experienced and competent public health and health management experts from Palestinian universities faculty members. The experts were contacted through email during the Covid19 lockdown. They all responded and gave feedback on the validity of the questionnaire's items. There was minor editing on some items and an item about diseases and health problems related to occupational hazards was added. Then the researcher took into

consideration comments and suggestions of arbitrators, as well as their proposed modifications and a consensus was reached about a final version.

Third, the researcher also verified the validity of the study tool through feedback from the pilot study, where the participants in the pilot study showed their interaction in answering the study questions and there was no problem for them in understanding the questions or their difficulty, all the questionnaire items were answered correctly.

Construct Validity

According to (Linn & Gronlund, 2012; Santosa, Marchira & Sumarni, 2017), If the Pearson correlation coefficient is high and it is statistically significant, the relationship between the items and the total score is strong, and therefore, the questionnaire items are valid for statistical analysis. So that the Pearson Correlation coefficient was extracted. As shown in table 3.2.

Table (3.2): Construct Validity test (Correlation coefficients)

Item	Knowledge of O.H	Item	Perceptions regarding O.H	Item	Practices about O.H	Paragraph	Diseases and health problems
1	**0.61	1	**0.89	1	**0.60	1	**0.89
2	*0.49	2	**0.70	2	**0.67	2	**0.70
3	**0.74	3	**0.66	3	**0.66	3	**0.79
4	**0.78	4	**0.61	4	**0.80	4	**0.88
5	**0.69	5	*0.50	5	*0.44		
6	**0.70	6	**0.69	6	**0.67		
7	**0.84	7	**0.66	7	**0.83		
8	**0.79	8	**0.65	8	**0.86		
9	**0.59	9	**0.72	9	**0.58		
10	**0.82	10	**0.66	10	**0.67		
11	**0.62	11	**0.53				
		12	**0.75				
		13	**0.79				
		14	**0.66				
		15	**0.60				
		16	**0.51				
		17	**0.82				

*Correlation is significant at the 0.05 level (2-tailed). **Correlation is significant at the 0.01 level (2-tailed).

Results shown in table (3.2) indicate that the values of correlation coefficient between (Knowledge of occupational hazards) variable and its items higher than (0.25), ranged between (0.487- 0.844), and is a significant level of ($\alpha \leq 0.05$) and ($\alpha \leq 0.01$), which means

that all items of (Knowledge of occupational hazards) are considered honest to measure what they were designed to measure (Santosa, Marchira & Sumarni, 2017).

While Results shown in the same table indicate that the values of correlation coefficient between (Perceptions regarding occupational hazards) variable and its items higher than (0.25), ranged between (0.50- 0.82), and is a significant level of ($\alpha \leq 0.05$) and ($\alpha \leq 0.01$), which means that all items of (Perceptions regarding occupational hazards) are considered honest to measure what they were designed to measure (Santosa, Marchira & Sumarni, 2017).

Also results indicate that the values of correlation coefficient between (Practices about occupational hazards) variable and its items higher than (0.25), ranged between (0.44- 0.86), and is a significant level of ($\alpha \leq 0.05$) and ($\alpha \leq 0.01$), which means that all items of (Practices about occupational hazards) are considered honest to measure what they were designed to measure (Santosa, Marchira & Sumarni, 2017).

Finally, the results indicate that the values of correlation coefficient between (Diseases and health problems) variable and its items higher than (0.25), ranged between (0.703- 0.890), and is a significant level of ($\alpha \leq 0.01$), which means that all items of (Diseases and health problems) are considered honest to measure what they were designed to measure (Santosa, Marchira & Sumarni, 2017).

Reliability Test

Reliability is described as the consistency of the measurement or the degree to which an instrument measures the same way each time in similar situations and on similar subjects, Cronbach Alpha is often used to test the internal consistency of the variables measuring the construct in scale (Hair et al., 2006). Where the result is statistically acceptable if the values of (Cronbach Alpha) is greater than (60%) or more this indicates higher degrees of

Reliability for the study tool (Sekaran & Bougie, 2012). Table (3.2) shows the Cronbach's Alpha result for each variable.

Table (3.3): Reliability Analysis

Variables	No. of items	(Cronbach Alpha)
Knowledge of occupational hazards	11	0.89
Perceptions regarding occupational hazards	17	0.91
Practices about occupational hazards	10	0.87
Diseases and health problems	4	0.83
All Variables	**42**	**0.89**

Results in table (3.3) show that every variable's Cronbach alpha score is higher than 0.60 indicating acceptable value. Their reliability values between 0.83-0.91 indicating that all of the variables are characterized by internal consistency.

Chapter Four
Results

This chapter provides the findings generated through data analysis using (SPSS). It provides an explanation of the rate of response, participants' characteristics, descriptive analysis of the variables and ANOVA analysis to testing of the hypotheses. The study

questionnaires were distributed to the study sample, which amounted to (217) nurses out of the study population of (499) nurses in three hospitals in East Jerusalem.

Participants' Socio demographic Characteristics

This part of the study includes a description of the Socio demographics variables of the study sample, which included 5 variables (gender, age, educational level, work place, and years of experience).

The results in Table (4.1) showed that the number of females is more than the number of males in the study sample, as the percentage of males from the study sample reached (49.3%) versus (50.7%) for females.

The results also showed that the majority of the study sample are young, as the percentage of the sample members whose age is less than 30 years is (46.1%). About educational level, the results in the same table showed that (80.6%) of the participants in the study sample held a Bachelor degree of education, this higher percentage for bachelor's degree can be explained based on the belief that nursing has become more complex due to technological and organizational change and thus requires a high level of education such that Bachelor degree (Spetz and Bates, 2013).

Also, the results indicated that the distribution of the study sample to the departments within the hospitals was approximately equal, except (Emergency department), which came with the lowest percentage (8.3%). The researcher explains the reason that the number of the sample of workers in emergency departments is the least, due to the constant preoccupation of the nurses at work due to the nature of the department's work, and the researcher was unable to meet with them and explain to them the nature of the study's work and the distribution of questionnaires to them, especially who workload in evening shifts.

Finally, about years of working experience, the results in Table (4.5) showed that (57.6%) of the study participants had a practical experience of (2-10) years, while the years of experience were distributed equally among the other Categories.

Table (4.1): Frequencies and percentages of study sample according to socio demographics variable

Category	N	Percentage%
Gender		
Female	110	%50.7
Male	107	49.3%
Age		
Less than 30 years	100	46.1%
30-40 year	79	36.4%
41-50 year	29	13.4%
More than 50 years	9	4.1%
Educational level		
Diploma	4	1.8%
Bachelor degree	175	80.6%
Master degree	38	17.5%
Work place		
Intensive care unit	34	15.7%
Emergency	18	8.3%
Internal Medicine D.	38	17.5%
Surgery Department	33	15.2%
Maternity section	32	14.7%
Neonatal Department	32	14.7%
Other	30	13.8%
Years of working experience		
Less than 2 years	29	13.4%
2-5 years	53	24.4%
6-10 years	72	33.2%
11-15 years	32	14.7%
More than 15 years	31	14.3%

Results of answering the study questions

Question 1: What are the Palestinian nurses' levels of knowledge, perceptions and practices regarding occupational health hazards?

The main descriptive statistics used in this study are mean and standard deviation. In addition, descriptive analysis was conducted to determine the mean score and standard deviation of the constructs, after making sure that all the variables are normally distributed:

Knowledge of occupational hazards

Table 5.6 contains the descriptive statistics and principal constructs of this question. The following formula was used to assign the means levels:

$$\text{Category length} = \frac{\text{highest weight (4)} - \text{lowest weight (1)}}{\text{No. of categories (3)}}$$

$$\text{Category length} = \frac{3}{3}$$

$$\text{Category length} = 1$$

Accordingly. The mean levels were:
Low level: 1– Less than 2
Moderate level: 2– Less than 3
High level: 3– up to 4

Results in Table (4.2) showed that Knowledge of occupational hazards came in the high rank with mean of (3.30). Also results in Table (4.6) showed that the values of mean for the Knowledge of occupational hazards items ranged between (3.13-3.48), and the item (I know what to do with a suspected Covid-19 patient) came in the first rank with mean of (3.48), while the item (I own the knowledge about chemical hazards) came in the last rank with mean of (3.13).

Table (4.2): Knowledge of occupational hazards

No.	Items	Mean	Std.	Level	Rank
1	I am aware of the occupational hazards in the health care facility	3.28	0.52	High	5

2	I am knowledgeable about occupational hazards and their categories	3.20	0.46	High	9
3	I am Knowledgeable about occupational infections.	3.35	0.54	High	4
4	I am knowledgeable about the most likely sources of occupational infections	3.27	0.59	High	6
5	I am knowledgeable about procedures where needle stick injuries are most likely to occur	3.47	0.58	High	2
6	I am knowledgeable about procedures that violate the standard precautions of occupational hazards.	3.26	0.58	High	7
7	I am knowledgeable about methods of preventing occupational cross infection after clinical procedures	3.38	0.60	High	3
8	I have the knowledge about physical hazards	3.27	0.61	High	6
9	I have the knowledge about chemical hazards	3.13	0.66	High	10
10	I have knowledge related to occupational health and safety matters	3.23	0.59	High	8
11	I know what to do with a suspected Covid-19 patient.	3.48	0.61	High	1
	Score of Knowledge	**3.30**	**0.44**	High	

Perceptions regarding occupational hazards

Table 5.7 contains the descriptive statistics and principal constructs of this question. The following formula was used to assign the means levels:

$$\text{Category length} = \frac{\text{highest weight (3)} - \text{lowest weight (1)}}{\text{No. of categories (3)}}$$

$$\text{Category length} = \frac{2}{3}$$

$$\text{Category length} = 0.66$$

Accordingly. The mean levels were:

Low level: 1– Less than 1.66

Moderate level: 1.66– Less than 2.32

High level: 2.32– up to 3

Results in Table (4.3) showed that Perceptions regarding occupational hazards came in the high rank with mean of (2.87). Also results in Table (4.7) showed that the values of

mean for the Perceptions regarding occupational hazards items ranged between (1.94-2.98), and the item (Sharps should be disposed in sharps' boxes) came in the first rank with mean of (2.98), while paragraph (Paying extra attention to occupational hazard is an unnecessary burden on me) came in the last rank with mean of (1.94).

This result also came due to the guidelines that hospitals follow and the regular review and update of exposure and infection control policies (standard operating procedures) by the hospital management.

Table (4.3): Perceptions regarding occupational hazards

No.	Items	Mean	Std.	Level	Rank
1	Occupational hazard should be taken seriously and given prompt attention in the hospital	2.92	0.31	High	7
2	Prevention of occupational hazards is a joint responsibility of the hospital management and the staff	2.93	0.29	High	6
3	Paying extra attention to occupational hazard is an unnecessary burden on me	1.94	0.82	Moderate	12
4	Training of staff and provision of personal protective equipment is necessary to reduce the risk of exposure to occupational hazard	2.96	0.22	High	3
5	Aprons and face masks should be worn in procedures where splash/spill of blood is likely	2.89	0.37	High	9
6	Gloves should always be worn when administering injections, starting intravenous fluids and drawing blood	2.95	0.21	High	4
7	Hands should be properly washed after each contact with a patient	2.97	0.20	High	2
8	Used needles should never be recapped	2.93	0.26	High	6
9	Sharps should be disposed in sharps' boxes	2.98	0.15	High	1
10	Safety or Sharp boxes should be located at close distances to where required procedures are administered	2.96	0.19	High	3
11	HBV, Measles, Mumps, Rubella and Influenza vaccines should be received by all health workers	2.90	0.32	High	8
12	Prolonged standing by Health Care Workers should be avoided	2.87	0.39	High	10
13	All exposures to occupational hazards should be reported and documented by appropriate authorities	2.94	0.25	High	5

14	Adequate staffing of Health Care Workers will reduce occupational hazards	2.92	0.28	High	7
15	Incentives should be provided for adhering to universal standard precautions	2.90	0.33	High	8
16	Punitive actions should be taken against Health Care Workers that violate standard safety precautions and practices	2.86	0.42	High	11
17	Exposure and infection control policies (standard operating procedures) should be regularly reviewed and updated by the hospital management	2.95	0.24	High	4
Score of Perceptions		**2.87**	**0.11**	High	

Practices about occupational hazards

As the results indicated in Table (4.4) showed that nurses practices regard occupational hazards came in the high level, whereas, the agreement of the study sample members on the practices questions came at a rate of (81.36%). Also, the results in the same table showed that nurses practices regard occupational hazards are differences from term to another, while the question "Do you ensure that your office/ work place is cleaned with antiseptic/ disinfectant on a daily basis" got the highest approval rating (96.3%), on the other side the question "Have you gone through any training on infection control in the past 2 years" got the lowest approval rating (63.6%).

Table (4.4): Practices regarding occupational hazards

No.	Items in the questionnaire	Yes/No answers number (%)	
		Yes	No
Q1	Have you gone through any training on infection control in the past 2 years	138(63.6%)	79(36.4%)
Q2	Do you wash your hands before you start work at your work place?	208(95.9%)	9(4.1%)
Q3	Do you wear personal protective equipment before carrying out your work?	200(92.2%)	17(7.6%)
Q 4	Do you read operation manual properly before operating machines in your work place?	166(76.5%)	51(23.5%)
Q5	Do you try to ensure safe work environment that will protect you from injuries/ diseases?	208(95.9%)	9(4.1%)
Q6	Do you ensure that your office/ work place is cleaned with antiseptic/ disinfectant on a daily basis	209(96.3%)	8(3.7%)
Q7	Do conform with regular/ quarterly checks/ screening for your health?	149(68.7%)	68(31.3%)
Q8	Do you seek immediate assessment/ treatment for potential injuries/ work-related problems?	195(89.9%)	22(10.1%)
Q9	Do you always wear medical shoes while working?	146(67.3%)	71(32.7%)
Q10	Do you perform your work using proper body mechanics (neck and back positioning)?	146(67.3%)	71(32.7%)
Score of practices		**%81.36**	**%18.64**

Diseases and health problems related to occupational hazards

As the results indicated in Table 4.5 showed that the most diseases and health problems related to occupational hazards, according to the answers of the study sample members is (Infection with Covid 19). While the least diseases and health problems related to occupational hazards is (Hepatitis).

Table (4.5): Diseases and health problems related to occupational hazards

No.	Diseases and health problems	Yes/No answers number (%)	
		Yes	No
Q1	Infection with Covid 19	117(53.9%)	100(46.1%)
Q2	Hepatitis	30(13.8%)	187(86.2%)
Q3	Lumber disk	78(35.9%)	139(64.1%)
Q 4	Allergy due to the use of sterilizers or gloves	134(61.8%)	83(38.2%)

Question 2: Is there a difference in Palestinian nurses knowledge about occupational hazards related to their (age, gender, educational qualification, and years of experience)?

Data in Table No. (4.6) indicates that there was no statistically significant difference in the nurses knowledge of occupational hazards related to their sociodemographic variables (age, gender, years of experience). According to the values of calculated (F), which amounted to (1.57, 1.13, 1.42) respectively, these findings were less than their tabular values due to the significance level which is more than (0.05). The data revealed statistically significant differences in the knowledge of occupational hazards related educational qualification, such differences were attributed to the educational level variable as evident by the high values of (F) calculated at (1.78), which is more than its tabular value, and due to the significance level, which is less than (0.05). Based on the previous results, the answer to the previous question is as follows:

- There is no difference in Palestinian nurses knowledge about occupational hazards related to their Age.
- There is no difference in Palestinian nurses knowledge about occupational hazards related to their gender.
- There is a difference in Palestinian nurses knowledge about occupational hazards related to their educational qualification.

- There is no difference in Palestinian nurses knowledge about occupational hazards related to their years of experience.

Table (4.6): Results of ANOVA analysis of nurses' knowledge of occupational hazards related to their sociodemographic variables (age, gender, educational qualification, and years of experience)

		Sum of square	Df	F	Sig.
Age	Within groups	21.54	21	1.53	0.07
	Between groups	127.60	190		
	Total	149.14	211		
Gender	Within groups	5.89	21	1.13	0.32
	Between groups	47.11	190		
	Total	53.00	211		
Educational qualification	Within groups	5.80	21	1.78	*0.02
	Between groups	29.42	190		
	Total	35.22	211		
Years of experience	Within groups	42.68	21	1.42	0.11
	Between groups	272.64	190		
	Total	315.32	211		

In order to determine the source of the difference in the educational qualification variable, the (Scheffe) test for dimensional comparisons was applied.

Results in table (4-7) shows that there is a statistically significant difference in knowledge about occupational hazards due to the educational qualification variable between certificate (Bachelor degree) and certificate (Master degree), where the difference in the two arithmetic means reached (0.29), and in interest of certificate (Master degree).

Table (4-7): Scheffe results for dimensional comparisons means to show the differences in knowledge about occupational hazards due to the educational qualification variable

Master degree	Bachelor degree	Diploma	Mean	Educational qualification
3.54	3.25	3.27		
			3.27	Diploma
		0.02	3.25	Bachelor degree
	0.29*	0.26	3.54	Master degree

(*)Statistically significant at level 0.05 .

Question 3: Is there a difference in Palestinian nurses perceptions of occupational hazards related to their (age, gender, educational qualification, and years of experience)?

Data in Table No. (4.8) indicates that there was no statistically significant differences in the perceptions of occupational hazards related to their sociodemographic characteristics (age, years of experience). It was evident by the decrease in the calculated (F) values, which amounted to (1.03, 0.78) respectively. These findings were less than their tabular values due to the significance level which is more than (0.05). The data revealed statistically significant differences in the perceptions of occupational hazards related to (gender, educational qualification), Such differences were attributed to the educational level variable as evident by the high values of (F) calculated at (3.15, 2.06), which is more than its tabular value, and due to the significance level, which is less than (0.05). Based on the previous results, the answer to the previous question is as follows:

- There is no difference in Palestinian nurses perceptions of occupational hazards related to their Age.
- There is a statistical difference in Palestinian nurses perceptions of occupational hazards related to their gender.
- There is a difference in Palestinian nurses perceptions of occupational hazards related to their educational qualification.

- There is no statistical difference in Palestinian nurses perceptions of occupational hazards related to their years of experience.

Table (4.8): Results of ANOVA analysis of Palestinian nurses perceptions of occupational hazards related to their sociodemographic characteristics (age, gender, educational qualification, and years of experience)

		Df	F	Sig.
Age	Within groups	10	1.03	0.42
	Between groups	206		
	Total	216		
Gender	Within groups	10	3.15	0.00*
	Between groups	206		
	Total	216		
Educational qualification	Within groups	10	2.06	0.03*
	Between groups	206		
	Total	216		
Years of experience	Within groups	10	0.78	0.65
	Between groups	206		
	Total	216		

In order to determine the source of the difference in the Gender and educational qualification variables.

Results in table (4-9) shows that the statistical difference between the mean responses of males and females about perceptions of occupational hazards is very small, which amounted to (0.03) in interest of males, and it is a statistically significant difference, where the calculated t-value was (t = 17.15) and with a level of significance (Sig = 0.00), which is less than 0.05.

Table (4-9): Testing the differences in perceptions of occupational hazards due to the variable (gender)

Sig	T	Mean Difference	Std.Deviation	Mean	Gender
0.00	17.15	0.03	0.904	2.89	Male
			0.13	2.85	Female

* The mean difference is significant at the 0.05 level*

Results in table (4-10) shows that there is a statistically significant differences in perceptions of occupational hazards due to the educational qualification variable between certificate (Diploma) and certificate (Master degree), where the difference in the two arithmetic means reached (0.16), and in interest of certificate (Master degree).

Table (4-10): Scheffe results for dimensional comparisons means to show the differences in perceptions of occupational hazards due to the educational qualification

Master degree	Bachelor degree	Diploma	Mean	Educational qualification
2.88	2.87	2.71		
			2.71	Diploma
		0.17	2.87	Bachelor degree
	0.00	0.17*	2.87	Master degree

(*)Statistically significant at level 0.05

Question 4: Is there a difference in Palestinian nurses practices regarding occupational hazards related to their (age, gender, educational qualification, and years of experience)?

Data in Table No. (4.11) indicates that there was no statistically significant differences in the practices regarding occupational hazards related to their sociodemographic variables (age, gender, educational qualification, years of experience). It was evident by the decrease in the calculated (F) values, which amounted to (1.63, 1.17, 1.16, 1.08) respectively. These findings were less than their tabular values due to the significance level which is more than (0.05). Based on the previous results, the answer to the previous question is as follows:

- There is no difference in Palestinian nurses practices regarding occupational hazards related to their Age.
- There is no difference in Palestinian nurses practices regarding occupational hazards related to their gender.
- There is no difference in Palestinian nurses practices regarding occupational hazards related to their educational qualification.
- There is no difference in Palestinian nurses practices regarding occupational hazards related to their years of experience.

Table (4.11): Results of ANOVA analysis of Palestinian nurses practices regarding occupational hazards related to their sociodemographic characteristics (age, gender, educational qualification, and years of experience)

		Df	F	Sig.
Age	Within groups	8	1.63	0.12
	Between groups	208		
	Total	216		
Gender	Within groups	8	1.17	0.32
	Between groups	208		
	Total	216		
Educational qualification	Within groups	8	1.16	0.32
	Between groups	208		
	Total	216		
Years of experience	Within groups	8	1.08	0.38
	Between groups	208		
	Total	216		

Question 5: Is there a relationship between nurses (knowledge, perceptions, practices) regarding occupational hazards?

To answer of this question, the researcher used the Pearson correlation coefficient.

The results in table (4.12) above show that there is no significant relationship between the nurses knowledge and nurses perceptions, where the Pearson's correlation coefficient was not significant, with a *p*-value more than 0.05 ($r = 0.11$, $p = 0.11$). While the results show that there is a significant relationship between nurses knowledge and nurses practices ($r = 0.28$, $p = 0.00$), Also, the results show that there is a significant relationship between nurses perceptions and nurses practices, where the value of Pearson's correlation coefficient (0.25) which is a significant function at the level of (0.01).

Table (4.12)
The results of the Pearson correlation coefficient test between variables Knowledge, perceptions, practices) of nurses regarding occupational hazards

		Nurses knowledge	Nurses perceptions	Nurses practices
Nurses knowledge	Pearson Correlation	1	0.11	**0.28
	Sig. (2-tailed)		0.11	0.00
	N	212	212	212
Nurses perceptions	Pearson Correlation	0.11	1	**0.25
	Sig. (2-tailed)	0.12		0.00
	N	212	217	217
Nurses practices	Pearson Correlation	**0.28	**0.25	1
	Sig. (2-tailed)	0.00	0.00	
	N	212	217	217
** Correlation is significant at the 0.01 level (2-tailed)				

In order to determine if there is a statistical effect of the study variables and answered the sub-questions, regression analysis was used as the following:

Results of the First Sub-question Testing

"Is there a statistically significant impact at ($\alpha \leq 0.05$) for Palestinian nurses knowledge on their perceptions of occupational health hazards"

Results of table (4-13) indicate that there is no relationship between nurses knowledge and perceptions of occupational health hazards, based on the calculated F value that reached (2.651) at a significant level of (Sig F = 0.105) which is more than 0.05.

Based on the previous results, the answer to the previous question is as follows: there is no relationship between Palestinian nurses' knowledge and their perceptions of occupational health hazards.

Table (4-13): Results of the simple linear regression analysis for the first sub-question

Dependent variable	Model Summary				ANOVA		
	R	R^2	Adjusted R^2	SE	DF	F Calculated	Sig F
perceptions of occupational health hazards	0.112	0.012	0.008	1.85	211	2.651	0.105

Results of the second Sub-question Testing

The second sub- question was formulated with the aim of determining the impact of nurses' knowledge on the practices of occupational health hazards, as it stated that: "Is there a statistically significant impact at ($\alpha \leq 0.05$) for Palestinian nurses knowledge on their practices of occupational health hazards"

Results of table (4-14) indicate that there is a relationship between nurses' knowledge and practices of occupational health hazards, by relying on the value of the correlation coefficient R that reached (0.279). The value of the adjusted R^2 (0.078) indicated that (7.8%) of the change occurring in the practices of occupational health hazards can be justified through nurses knowledge, taking into consideration reliability of other factors. Results indicate also that there is a significance of the model, based on the calculated F value that reached (17.791) at a significant level of ($p = 0.001$) which is less than 0.05.

Based on the previous results, the answer to the previous question is as follows: there is a relationship between Palestinian nurses' knowledge and their practices in relation to occupational health hazards' prevention.

Table (4-14): Results of the simple linear regression analysis for the second sub-question

Dependent variable	Model Summary				ANOVA		
	R	R^2	Adjusted R^2	SE	DF	F Calculated	Sig F
practices of occupational health hazards	0.279	0.078	0.074	1.56	211	17.791	*0.000

* Statistically significant at a level of ($\alpha \leq 0.05$)

Results of the third Sub-question Testing

"Is there a statistically significant relationship at ($\alpha \leq 0.05$) for Palestinian nurses perceptions on their practices of occupational health hazards?"

Results of table (4-15) indicate that there is a relationship between nurses' perceptions and practices of occupational health hazards, by relying on the significance of F, which was less than 0.05. The value of the correlation coefficient *r* was (0.253). The value of the adjusted R^2 (0.064) indicated that (6.4%) of the change occurring in the practices of occupational health hazards can be justified through nurses perceptions, taking into consideration reliability of other factors. Results indicate also that there is a significance of the model, based on the calculated F value that reached (14.755) at a significant level of (SigF = 0.001) which is less than 0.05.

Based on the previous results, the answer to the previous question is as follows: there is a relationship between Palestinian nurses' perceptions and their practices in relation to occupational health hazards' prevention.

Table (4-15): Results of the simple linear regression analysis for the third sub-question

Dependent variable	Model Summary				ANOVA		
	R	R^2	Adjusted R^2	SE	DF	F Calculated	Sig F
practices of occupational health hazards	0.253	0.064	0.060	1.57	216	14.755	*0.000

* Statistically significant at a level of ($\alpha \leq 0.05$)

Summary of significance results

Table (4-16) included the summary of significant results which are the focus of discussions and recommendations

Table (4-16) : The summary of significant results

#	Main results
1	There were a statistically significant difference in the knowledge of occupational hazards related educational qualification
2	There were no statistically significant differences in the nurses perceptions of occupational hazards related to their sociodemographic characteristics (age, years of experience).
3	There were no statistically significant differences in nurses practices regarding occupational hazards related to their sociodemographic characteristics (age, gender, educational qualification, and years of experience).
4	There were no significant relationship between the two variables (nurses knowledge and nurses perceptions),

Chapter Five

Discussion

This chapter explains and discusses the research findings and conclusions as well as makes recommendations based on the results obtained in chapter four.

Levels of knowledge, perceptions and practices regarding occupational health hazards

The results of the study indicated that the mean of knowledge about occupational hazards came in the high rank with mean (3.30) of (4), which means that most participants have sufficient knowledge of occupational hazards in their jobs.

This result came due to the nurses' knowledge about procedures applied in the hospitals, where needle stick injuries are most likely to occur, in addition to their knowledge of methods of preventing occupational infection after clinical procedures, also to their knowledge of occupational health and safety procedures.

This result is in agreement with the result of Obono et al (2019) study, which showed that most respondents had high level of knowledge (87%) about occupational hazards, and agreement with the result of Ahmed and Shareef (2019) study, which showed that the respondents had high level of knowledge about occupational hazards. Also, this result in agreement with the result of Faris et al (2018) study, which showed that 252 (84%) of nurses had adequate knowledge about occupational hazards. Also this result in agreement with the result of Aluko et al (2016) study, which showed that most respondents (89 %) were knowledgeable about hazards in HCFs.

On the other side, the results of the study indicated that the mean of perceptions regarding occupational hazards, came in the high rank with (m=2.87; SD=0.11), which mean that most members of the study sample have sufficient perceptions regard to occupational hazards in their jobs like: perceptions of the importance of wearing preventive medical supplies, and of safely disposing of medical equipment after using them, such that dispose

of sharps in sharps boxes, and the necessity to place safe or sharp boxes at close distances from where the required procedures are implemented. In addition to perceptions of the importance of personal cleanliness.

Nurses' perceptions about occupational hazards are directly related to the nurses' ability to recognize and distinguish all types of hazards around them in the workplace, this would enhance the way nurses deal with these hazards, and implement good practices to prevent and avoid these hazards (Aluko et al, 2016).

This result is in agreement with the result of Faris et al (2018) which showed that most respondents (92%) had high level of perceptions towards occupational hazards. Also, this result agreement with the result of Aluko et al (2016) study, which showed that there is a high level of nurse's perceptions regard to occupational hazards, as (99.4%) of the respondents agreed that Occupational hazard should be taken seriously and given prompt attention in the hospital.

Also, the results of the study indicated that the nurse's practices regarding occupational hazards came in the high level, Whereas, the agreement of the study sample members on the practices questions came at a rate of (81.36%).

This result is in agreement with the result of Aluko et al (2016) study, which showed that most respondents had a high level of practices regarding occupational hazards in HCFs.

Difference in Palestinian nurses knowledge about occupational hazards related to their (age, gender, educational qualification, and years of experience)

Results shows that there was a statistically significant difference in the knowledge of occupational hazards related educational qualification, such differences were attributed to the educational level variable as evident by the high values of (F) calculated at (1.783), which is more than its tabular value, and due to the significance level, which is less than (0.05). Meaning that the higher the level of education of nurses, the greater their knowledge about occupational hazards in the work environment.

This can be explained by the fact that the knowledge possessed by the medical staff is usually related to their educational level. Thus, there is a positive relationship between knowledge and educational level, as the higher educational level of nurses leads to an increase in their knowledge. This confirms that health workers, especially nurses, who have obtained the highest level of education are more informed about occupational health and safety issues in the workplace, while workers who have a lower level of education lack sufficient knowledge of occupational health and safety issues in hospitals. This confirms the findings of Awudu (2018) study, which indicated that education level for healthcare workers, are the grounding factor that improves on Occupational Safety and Health, and that the enforcement of efficient health and safety hazards prevention plans necessitates level-headed basic education for work.

This result agreed with Mlambo, Sklen, McGrath (2021) study results, which showed that Continuing education is necessary to develop nurses' work and professionalism. And these findings consistent with study that carried out by Dhahir and Al Mayahi (2021) who reported that there was a relation between knowledge level about occupational hazards and level of nurses educational. Also, this result is in agreement with the result of Ahmed and Shareef (2019) study, which showed that there is a significant association between educational level and nurses' knowledge about occupational hazards.

Difference in Palestinian nurses perceptions of occupational hazards related to their (age, gender, educational qualification, and years of experience)

Results showed that there were no statistically significant differences in the nurses perceptions of occupational hazards related to their sociodemographic characteristics (age, years of experience). These findings were less than their tabular values due to the significance level which is more than (0.05). Thus, there is a statistically significant differences in the perceptions of occupational hazards related to (gender, educational qualification), Such differences were attributed to the educational level variable as evident by the high values of (F) calculated at (3.147, 2.056), which is more than its tabular value, and due to the significance level, which is less than (0.05).

This can be explained by the fact that Attitudes perceptions by the medical staff is usually related to their educational qualification. So, the higher of educational qualification level for nurses, the higher of their knowledge about occupational hazards, and so on, the higher perceptions level of medical matters and so of occupational hazards.

This result in agreement with the results of Awudu (2018) study, which showed that healthcare workers who have a higher level of education, have a greater awareness of occupational hazards in hospitals, and thus have a greater perception of these hazards.

Also, this result agreed with the results of Karahan et al (2009) study, which showed that Age, female gender, are associated with increased occupational hazards in hospitals. And agreed with the results showed in Obono et al (2019) study, that there was a statistically significant association between nurse's gender and their perception about occupational hazards in hospitals and their safety practice.

Difference in Palestinian nurses practices of occupational hazards related to their (age, gender, educational qualification, and years of experience)

Results showed that there were no statistically significant differences in nurses practices regarding occupational hazards related to their sociodemographic characteristics (age, gender, educational qualification, and years of experience). It was evident by the decrease in the calculated (F) values.

This can be explained by the fact that practices express the nurses' commitment to apply the instructions and regulations approved by the hospital administration regarding dealing with occupational hazards, and therefore everyone is obligated to apply them regardless of educational qualification, experience, gender and other personal variables. So that the practices related to occupational safety within hospitals are a matter that must be implemented by all workers, specifically the nurses who are directly exposed to the risks of the profession, and these practices are constantly subject to control by the quality departments within the hospital, and therefore this is logical that there should be no difference in the nurses practices about occupational hazards according to their demographic characteristics.

The results in agreement with the results indicated in the study of Obono et al (2019) which showed that there is no statistically significant association between gender and practices of occupational hazards.

Relationship between nurses (knowledge, perceptions, practices) regarding occupational hazards

The results show that there is no significant relationship between the two variables (nurses knowledge and nurses perceptions), where the value of Pearson's correlation coefficient (0.112) which is not significant function at the level of (0.01). While the results show that there is a significant relationship between the two variables (nurses knowledge and nurses practices), where the value of Pearson's correlation coefficient (0.279) which is

a significant function at the level of (0.01). Also the results show that there is a significant relationship between the two variables (nurses perceptions and nurses practices), where the value of Pearson's correlation coefficient (0.253) which is a significant function at the level of (0.01).

Therefore, the high level of knowledge of the occupational hazards of nurses working in Jerusalem hospitals, which was revealed by the results of the study, would constitute an incentive for them to take precautionary measures to avoid these hazards, and thus perform jobs in a safe environment, which is reflected in the overall performance level of the hospital and the increased satisfaction of service recipients. This was confirmed by a study (Sabita et al, 2018). Which showed that the nurses' knowledge of work hazards increases the nurses' level of care and attention during work and taking the utmost care when dealing with patients.

Conclusion

Nurses are the workers who are mostly exposed to occupational hazards, because of direct contact with patients, and because of dealing with dangerous medical tools and materials. The nurses knowledge and perceptions of these hazards, and nurses conscious practices may reduce their exposure to these hazards, the results that were obtained in this study, require the east Jerusalem hospitals to follow clear plans and policies for nurses dealing with occupational hazards, under the direct supervision by the Quality management department and the Human Resources Department in the hospital. Here, the researcher believes that regulations may contribute to raising awareness and practice.

Recommendations

Based on the findings, the researcher recommends the following:

1. Recommendation of human resources department in the hospital to holding continuous training and awareness programs for newly employed nurses to increasing their perceptions of occupational hazards and ways to deal with them, who have little practical experience.
2. It is necessary for Palestinian hospitals to follow renewed plans and policies that are compatible with new or unexpected risks and diseases, and to provide nurses with rules to prevent them, under the direct supervision of the Quality Management Department and Human Resources Department in the hospital.
3. To conduct further studies, either observational or qualitative, to evaluate the occupational hazards or to focus on certain occupational hazard, and comparing results in other hospitals to identify weaknesses and opportunities for improvement in this aspect.

4. Recommending other Palestinian hospitals that did not participate in this study to take advantages of this study results and recommendations, while addressing the issue of their occupational hazards.

Study limitations

Like any other research work, the researcher faced some limitations and difficulties before starting and during the research, as follows:

1. The lack of previous studies that approached occupational health hazards in the Palestinian environment.
2. The population of the study was limited to Jerusalem hospitals' nurses that may not represent the Palestinian nursing population. In addition, the sample was selected through the convenience sampling technique. Limiting the population to nurses of the three hospitals in Jerusalem and employing convenience sampling constrain the researcher's ability to generalize the findings to the general population of Palestinian nurses.
3. The survey used in this study assessed nurses' perceptions about their knowledge, and not their actual knowledge. There is a need for constructing a measure that evaluates the actual knowledge of nurses about the occupational health hazards that nurses may encounter.

References

Abu Saqer, A. (2014). Assessment of health and safety risk among health care providers in European Gaza hospital. (Master thesis. Islamic university. Gaza. Palestine). Retrieved from: http://hdl.handle.net/20.500.12358/21694

Ahmed, Shakhawan Azad & Shareef, Hussein, O. (2019). Assessment of occupational health and safety measures knowledge and experienced types of hazards among nursing staff in Rania hospital, *Erbil Journal of Nursing & Midwifery*, 2(2), 85-92.

Alavi, Negin Masoudi (2014). Occupational Hazards in Nursing, *Nurs Midwifery Stud*. 3(3).

Aljedaani, Shafeah Makdour (2017). Nurses Perceptions of Nursing as a Profession and Its Impact on Their Intention to Leave Their Career: Staff Nursesin Jeddah City, *IOSR Journal of Nursing and Health Science*, 6(3), 13-23.

Al-Khatib, I. A., El Ansari, W., Areqat, T. A., Darkhawaja, R. A., Mansour, S. H., Tucktuck, M. A., & Khatib, J. I. (2015). Occupational Safety Precautions among Nurses at Four Hospitals, Nablus District, Palestine. *The International Journal of Occupational and Environmental Medicine*, 6(4), 243–246.

Aluko, O.O; Adebayo, A.E.; Adebisi, T.F.; Ewegbemi, M.K.; Abidoye, A.T.; and Popoola, B.F. (2016). Knowledge, attitudes and perceptions of occupational hazards and safety practices in Nigerian healthcare workers, *BMC Res Notes*, 9(71), 1-14.

Amadhila, Julia, Jacoba Marieta Van der Vyver, Daniel Opotamutale Ashipala (2017). Knowledge and practices among registered nurses on occupational hazards in Onandjokwe Health District: Oshikoto region, *Namibia, Journal of Hospital Administration*, 6(4).

Amare, T.G; Tesfaye, T.T; Girmay, B; Gebreagziabher T.T (2021). Exposure to Occupational Health Hazards Among Nursing and Midwifery Students During Clinical Practice, Risk Management and Healthcare Policy 14, 2211-2220.

Amosun AM, Degun AM, Atulomah NOS, Olanrewaju MF, Aderibigbe KA. (2011). Level of knowledge regarding occupational hazards among nurses in Abeokuta, Ogun state, Nigeria. Curr Res J Biol Sci, 3(6):586–590.

Amosun, A. M., Degun, A. M., Atulomah, N.O.S., Olarenwaju, M.F. & Aderibigbe, K.A. (2011) Level of knowledge regarding occupational hazards among nurses in Abeokuta, Ogun state, Journal Biological Sciences. 3(6):586- 590.

Anabtawi, R. Al-Amoudi, M. Hammad, B.E. & Amro, R. (2017). Risk factors that contribute to the development of lower back pain among operation room nurses in Palestinian hospitals, *International Journal of Current Research*, 9(8), 56451-56454.

Awudu, L. (2018). Occupational health and safety practices among healthcare workers in some selected hospitals in tamale metropolis, Master thesis, University for development studies.

Bell JL, Collins JW, Tiesman HM, Ridenour M, Konda S, Wolf L, Evanoff B. Slip, trip, and fall injuries among nursing care facility workers. Workplace Health Saf. 2013;61(4):147–52.

Boman, Erika & Levy-Malmberg, Rika (2020). Differences and similarities in scope of practice between registered nurses and nurse specialists in emergency care: an interview study, *Scandinavian Journal of Caring Sciences* 34, 492-500.

Chhabra, Shakuntala A (2016). Health hazards among health care personnel, *Journal of Mahatma Gandhi Institute of Medical Sciences*, 21(1), 19-24.

Dhahir, D. M. and Al Mayahi, N. Y. (2021). Assessment of Health Workers Knowledge Toward Occupational Health and Safety Program in Alkut City's Primary Health Care Centers, *Medico-legal Update*, 21(1). 1536-1541.

Dhahir, M.D and Al Mayahi, N.Y (2021). Assessment of Health Workers Knowledge toward Occupational Health and Safety Program in Alkut City's Primary Health Care Centers, Medico-legal Update, 21(1), 1536-1541.

Doane, D.P. and Seward, L.E. (2011). Applied Statistics in Business and Economics, (3rd ed). McGraw-Hill/Irwin.

Elbilgahy, Amal Ahmed; Elwasefy, Shereen Ahmed and Abd El Aziz, Magda Ahmed (2019). Occupational Hazards and Safety Nursing Guidelines for Pediatric Nurses in the Health Care Setting, Journal of Health, Medicine and Nursing, vol.59, 73-82.

Eljedi, A. (2015). Prevalence and Response to Occupational Hazards among Nursing Students in Gaza Strip ,Palestine. Public Health Research, 5(1), 32–38. https://doi.org/10.5923/j.phr.20150501.06

Fan, Y. Zhang, S. Li, Y. Li, Y. Zhang, T. Liu, W. and Jiang, H. (2018). Development and psychometric testing of the Knowledge, Attitudes and Practices (KAP) questionnaire among student Tuberculosis (TB) Patients (STBP-KAPQ) in China, BMC Infectious Diseases 18:213, 1-10.

Faris, S. H., Mansoor, H. I., Alzeyadi, S., Al-Juboori, A. K. K., Mahmood, F. M., Hashim, G. A., & Hashim, G. A. (2018). Knowledge, attitude and practice of occupational hazard among nursing staff at teaching hospitals in Kerbala City, South-Central Iraq. Indian Journal of Public Health Research and Development, 9(8), 1147–1152. https://doi.org/10.5958/0976-5506.2018.00956.7

Giurgiu D., Jeoffrion C. et al (2016). Wellbeing and occupational risk perception among health care workers: a multicenter study in Morocco and France, Journal of Occupational Medicine and Toxicology, 11 (20).

Glance, P. A. T. A. (2018). Health workforce snapshot. Eastern Mediterranean Health Observatory., 9(20), e646.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). Multivariate data analysis. Prentice Hall Pearson Education.

Hamid, Almas; Ahmad, Alizae Salaam; Dar, Sarah; Sohail, Sana; Akram, Faiza and Qureshi, Mariya Irfan (2018). Ergonomics Hazards and Musculoskeletal Disorders Among Workers of health Care Facilities, Curr. World Environ., 13(2) 251-258.

Izadi, N. (2018). Occupational Health Hazards among Health Care Workers. Public Health Open Access, 2(1), 2–4. https://doi.org/10.23880/phoa-16000120

James, G. and Adams, MD (2020). Supporting the Health Care Workforce During the COVID-19 Global Epidemic, Journal of American Medical Association, 323(15), 1439-1440.

Joshua, Rennie and Karkada, Suja (2017). A Review on Occupational Health Hazards and its Consequences among Nurses, International Journal of Nursing Research and Practice , Vol. 4 No. 2, 28-36.

Junyong, I (2017). Introduction of a pilot study, *Korean Journal of Anesthesiology*, 70(6), 601-605.

Karahan, A.; Kav, S.; Abbasoglu, A.; Dogan, N. (2009). Low back pain: Prevalence and associated risk factors among hospital staff. J. Adv. Nurs., 65, 516–524.

Linn, Robert. L, & Gronlund, Norman, E, (2012). Measurement and Assessment in Teaching, (11th ed) Prentice Hall.

Manuel, m; Daphnie, L; D'cunha, S; Suresh, S (2015). A study to assess the awareness regarding occupational health hazards among the employees in the laundry department of a selected hospital, Muller Journal of Medical Sciences and Research, 6(1), 40-44.

Mohanty, Aroop; Kabi, Ankita and Mohanty, Ambika P. (2019). Health problems in healthcare workers: A review, Journal of Family Medicine and Primary Care, 8(8).

Muleme J, Kankya C, Ssempebwa JC, Mazeri S and Muwonge A (2017) A Framework for Integrating Qualitative and Quantitative Data in Knowledge, Attitude, and Practice Studies: A Case Study of Pesticide Usage in Eastern Uganda. Front. Public Health 5:318, 1-15.

Nassaji, Hossein (2015). Qualitative and descriptive research: Data type versus data analysis, Language Teaching Research, 19(2) 129–132.

Ndejjo, Rawlance; Musinguzi, Geofrey, Yu, Xiaozhong; Buregyeya, Esther; Musoke, David; Wang, Jia-Sheng; Ali Halage, Abdullah; Whalen, Christopher; Bazeyo, William; Phillip Williams, and Ssempebwa, John (2015). Occupational Health Hazards among Healthcare Workers in Kampala, Uganda, Journal of Environmental and Public Health, 1-9.

Norman, Rebecka Maria and Sjetne, Ingeborg Strømseng (2017). Measuring nurses perception of work environment: a scoping review of questionnaires, BMC Nursing, 16(66), 1-15.

Obono, Margaret; Adeosun, Shakirat A.; Olaiya, Paul A.; Adesina, Afusat (2019).Assessment of the Knowledge, Attitudes and Perception of Potential Occupational Hazards by Healthcare Workers in a Tertiary Healthcare Facility in Lagos, Nigeria, International Journal of Research and Scientific Innovation (IJRSI), Volume VI, Issue IV, 243-264.

Oluoch, Ibrahim; Njogu, Paul and Ndeda, Jared O. H. (2017). Effects of Occupational Safety and Health Hazards' Exposure on Work Environment in the Water Service Industry within Kisumu County - Kenya, Journal of Environmental Science, Toxicology and Food Technology, 11(5), 46-51.

Palestinian Central Bureau of Statistics. (2019). Number of employed individuals. Retrieved from http://www.pcbs.gov.ps/portals/_pcbs/PressRelease/Press_En_15-4-

2020-lab-en.pdf.

Palestinian Ministry of health, Health Annual Report, 2018. http://www.moh.ps

Prajwal, M.S; Kanakavalli, K.K; Sujay, M.J (2020). Assessing the awareness on occupational safety and health hazards among nursing staff of a teaching hospital, Journal of Family Medicine and Primary Care, 9(12), 5961-5970.

Purohit, Devdatt P; Siddiqui N A; Nandan, Abhishek and Yadav, Bikarama P (2018). Hazard Identification and Risk Assessment in Construction Industry, International Journal of Applied Engineering Research 13(10), pp. 7639-7667.

Rikhotso, O.; Morodi, T.J.; Masekameni, D.M. (2021). Occupational Health Hazards: Employer, Employee, and Labour Union Concerns. Int. J. Environ. Res. Public Health, 18, 5423, p1-60.

Rosario, Alcantara Luque; Aurora, Rodriguez Borrego, M; Carmen, González Galan, M and Cristina, Clapes Roldan (2013). Risk perception in nursing students, Enfermeia Global Journal, number29, 352-362.

Sabita, Karki; Shahi Mandira; Sharma Bharati and Karki Sulata (2018). Knowledge and Preventive Practice of Occupational Health Hazards among Nurses in different Teaching Hospitals, Innovative Journal Of Medical And Health Science 8:12, 225-234.

Santosa B, Marchira C, Sumarni P (2017). development and validity and reliability tests of professionalism assessment instrument in psychiatry residents, *Jurnal Pendidikan Kedokteran Indonesia* 6(1), 59-64.

Sekaran, U. (2003) Research Methods for Business: A Skill-Building Approach. 4th Edition, John Wiley & Sons, New York.

Sekaran, U., & Bougie, R., (2012). Research Methods for Business: A Skill Building Approach, (6thed), NY: John Wiley & Sons Inc, New York.

Sekaran, U., and Bougie, R., (2012). Research Methods for Business: A Skill Building Approach, (6thed), NY: John Wiley & Sons Inc, New York.

Shrestha, B; Manandhar N; Joshi SK (2020). Knowledge of occupational health hazards and practice of personal protective equipment among fabrication workers in Kathmandu district, Nepal, International Journal of Occupational Safety and Health, 10(2), 115-123.

Spetz J. and Bates, T. (2013). Is a Baccalaureate in Nursing Worth It? The Return to Education, 2000–2008, Health Research and Educational Trust, 48(6), 1859-1878.

Stolt, Minna; Maija Miikkola; Riitta Suhonen and Helena Leino-Kilpi (2018). Nurses Perceptions of Their Foot Health Implications for Occupational Health Care, Workplace Health & Safety, 66(3), 136-143.

Sunuwar, DB (2020). Role of Nutrition in Occupational Health and Safety in the context of COVID-19, International Journal of Occupational Safety and Health,10(1), 1-2.

Thenmozhi P. and Deepa M. (2019). Knowledge on occupational health hazards among staff nurses, International Journal of Advanced Research and Development, 4(5), 49-52.

U.S. Bureau of Labor Statistics, https://www.bls.gov.

Ude-Akpeh, & Edith, C. (2017). Knowledge, Attitude and Practice (KAP) Study of Diffusion of Flood Alert Campaign in Anambra State, International Journal of Business and Management Invention, 6(6), 64-74.

Walton, AnnMarie Lee and Rogers, Bonnie (2017). Workplace Hazards Faced by Nursing Assistants in the United States: A Focused Literature Review, *Int. J. Environ. Res. Public Health*, 14, 544, 1-25

White, Debbie; Nelly D. Oelke; Jeanne Besner; Diane Doran; Linda McGillis Hall and Phyllis Giovannetti (2008). Nursing Scope of Practice: Descriptions and Challenges, *Nursing Leadership* 21(1), 44-57.

Yesilgul, G; Cicek, H. S; Avci, M. Z; Huseyniklioglu, B (2018). Nurses Knowledge Levels and Perceptions Regarding Occupational Risks and Hazards, International Journal of Caring Sciences 11(2), 1117-1123.

Zainudin, Nurhaizan Mohd (2019). Identification and analysis of worker safety hazards in Midwest agribusiness construction work sites, Phd Theses, Iowa State University.

Appendix

Appendix (A)

Study tool

جامعة القدس
Al-Quds University

Dear Nurses

My name is Dalal Zawahreh and I am honored to invite you to participate in a study titled "Palestinian Nurses Knowledge, Perceptions and Practices Regarding Occupational Hazards in three Jerusalem Hospitals". The study is a requirement for obtaining my Master's degree.

The aim of the study is to assess Palestinian nurses levels of knowledge, perceptions and practice regarding occupational health hazards. By participating in this survey, you will help me achieve the purpose of the study

Your participation in this study is voluntary and will not in any way affect your professional or social life. No one will be notified about your participation in the study. All information you provide will be anonymous, will be treated collectively and with complete confidentiality, and will be only used for scientific research purposes.

If you have any questions about the study or about your rights as a participant, you can contact me on any of the following:

Phone numbers: (052-3287538) (0595921246)

E- mail: dalal.zawahreh@gmail.com

Consent to participate in the study:

1- Agree

2- I don't agree

Part A: Demographic Data

Please put a tick (√) in front of the option that represents you:

- **Gender:** ☐ Male ☐ Female
- **Age:** ☐ ss than 30 years ☐ 30-40 ☐ 41-50 ☐ more than 50 years
- **Educational Level:** ☐ Diploma ☐ Bachelor degree ☐ Master degree
- **Hospital name:** ☐ Al Makassed hospital ☐ Saint Joseph hospital ☐ Augusta Victoria hospital
- **Work Place:** ☐ ICU ☐ Emergency ☐ Internal Medicine ☐ Department ☐ Surgery Department ☐ Maternity section Neonatal ☐ Department Other, specify _____
- **Years of working experience in the hospital:** ☐ less than 2 years ☐ 2-5 ☐ years 6-1☐ years 11-☐ years more than 15 years

1: Knowledge of occupational hazards

Please select the option that expresses your level of knowledge you have about each of the following items by placing a tick (√) in the adjacent column.

No.	Item	High level	Mode rate level	Low level	No knowledge
1	I am aware of the occupational hazards in the health care facility				
2	I am knowledgeable about occupational hazards and their categories				
3	I am Knowledgeable about occupational infections.				
4	I am knowledgeable about the most likely sources of occupational infections				
5	I am knowledgeable about procedures where needle stick injuries are most likely to occur				
6	I am knowledgeable about procedures that violate the standard precautions of occupational hazards.				
7	Iam knowledgeable about methods of preventing occupational cross infection after clinical procedures				
8	I own the knowledge about physical hazards				
9	I own the knowledge about chemical hazards				
10	I have knowledge related to occupational health and safety matters				
11	I know what to do with a suspected Covid-19 patient.				

2: Nurses perceptions regarding occupational hazards

Please select the option that expresses your answer to each of the following paragraphs by placing a tick (√).

No.	Item	Agree	Undecided	Disagree
1	Occupational hazard should be taken seriously and given prompt attention in the hospital			
2	Prevention of occupational hazards is a joint responsibility of the hospital management and the staff			
3	Paying extra attention to occupational hazard is an unnecessary burden on me			
4	Training of staff and provision of personal protective equipment is necessary to reduce the risk of exposure to occupational hazard			
5	Aprons and face masks should be worn in procedures where splash/spill of blood is likely			
6	Gloves should always be worn when administering injections, starting IVs and drawing blood			
7	Hands should be properly washed after each contact with a patient			
8	Used needles should NEVER be recapped			
9	Sharps should be disposed in sharps' boxes			
10	Safety or Sharp boxes should be located at close distances to where required procedures are administered			
11	HBV, Measles, Mumps, Rubella and Influenza vaccines should be received by all health workers			
12	Prolonged standing by Health Care Workers should be avoided			
13	All exposures to occupational hazards should be reported and documented by appropriate authorities			
14	Adequate staffing of Health Care Workers will reduce occupational hazards			
15	Incentives should be provided for adhering to universal standard precautions			

16	Punitive actions should be taken against Health Care Workers that violate standard safety precautions and practices			
17	Exposure and infection control policies (standard operating procedures) should be regularly reviewed and updated by the hospital management			

3: Practices about occupational hazards

Please select the option that expresses your answer to each of the following paragraphs by placing a tick (√) in the adjacent column.

No.	Item	Yes	No
1	Have you gone through any training on infection control in the past 2 years		
2	Do you wash your hands before you start work at your work place?		
3	Do you wear personal protective equipment before carrying out your work?		
4	Do you read operation manual properly before operating machines in your work place?		
5	Do you try to ensure safe work environment that will protect you from injuries/ diseases?		
6	Do you ensure that your office/ work place is cleaned with antiseptic/ disinfectant on a daily basis		
7	Do conform with regular/ quarterly checks/ screening for your health?		
8	Do you seek immediate assessment/ treatment for potential injuries/ work-related problems?		
9	Do you always wear medical shoes while working?		
10	Do you perform your work using proper body mechanics (neck and back positioning)?		

4: Diseases and health problems related to occupational hazards

Have you ever been afflicted by the following health problems due to your current job:

No.	Diseases and health problems	Yes	No
1	Infection with Covid 19		
2	Hepatitis		
3	Lumber disk		
4	Allergy due to the use of sterilizers or gloves		
5	Others, please specify:		

Thank you for your cooperation

Appendix 2: The names of experts who evaluated the study instrument

Names of expert	Fields of expert
Dr. Asma Imam	Health management
Dr. Motasem Hamdan	Health policy and management
Dr. Maha Nahal	Health care sciences
Dr. Nuha Sharif	Epidemiologist
Mr. Samer Daibes	Quality Manager
Dr Yousef Zayden	Health Management

Appendix 3: ethical approval

بسم الله الرحمن الرحيم

Al-Quds University
Jerusalem
School of Public Health

جامعة القدس
القدس
كلية الصحة العامة

التاريخ: 2021/10/6

حضرة الدكتور هاني عابدين المحترم
مدير مستشفى المطلع

الموضوع: تسهيل مهمة الطالبة دلال زواهرة

تحية طيبة وبعد،،
تقوم الطالبة دلال زواهرة ، برنامج ماجستير سياسات وادارة صحية/ كلية الصحة العامة/ جامعة القدس، باعداد بحث الرسالة وباشراف الدكتورة ميساء الاسطا **بعنوان:**

" Palestinian Nurses' Knowledge Perceptions and practice Regarding Occupational Hazards in three Jerusalem Hospitals".

وهي بحاجة الى توزيع استبانه على تمريض المستشفى لدراسة مدى معرفتهم وادراكهم وممارستهم لمخاطر المهنة التي من الممكن التعرض لها وكيفية تجنبها، لذا نرجو من حضرتكم تسهيل مهمة الطالبة، علما بان المعلومات ستكون سرية ولاغراض البحث العلمي فقط.

وتفضلوا بقبول فائق الاحترام،،

لا مانع بشرط المحافظة على عدم ذكر أسماء المرضى أو المستشفيات

Dr. Amal Abu-Awad
Chief Nursing Officer
Augusta Victoria Hospital
Tel. 02 - 6279911

د. حازم آغا
عميد كلية الصحة العامة

تحول للدكتورة امل لاجراء اللازم

Dr. Hani Abdeen
License No. 15362
Chief Medical Officer
Augusta Victoria Hospital
Tel. 02 - 6279950

نسخة: الملف

Jerusalem
P.O.Box 51000
Telefax +970-2-2799234
Email: sphealth@admin.alquds.edu

فرع القدس / تلفاكس 02-2799234
ص.ب. 51000 القدس
البريد الالكتروني: sphealth@admin.alquds.edu

بسم الله الرحمن الرحيم

Al-Quds University
Jerusalem
School of Public Health

جامعة القدس
القدس
كلية الصحة العامة

التاريخ: 2021/10/6

حضرة الدكتور ماهر ديب المحترم
مدير مستشفى ماريوسف الفرنساوي/ القدس

الموضوع: تسهيل مهمة الطالبة دلال زواهرة

تحية طيبة وبعد،،
تقوم الطالبة دلال زواهرة ، برنامج ماجستير سياسات وادارة صحية/ كلية الصحة العامة/ جامعة القدس، باعداد بحث الرسالة وباشراف الدكتورة ميساء الاسطا **بعنوان:**

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وتفضلوا بقبول فائق الاحترام،،

Dr. Joseph Hosella
Dr. Maher Deeb
L.N. 21953
Medical Director

د. حازم اغا
عميد كلية الصحة العامة

نسخة: الملف

Jerusalem
P.O.Box 51000
Telefax +970-2-2799234
Email: sphealth@admin.alquds.edu

فرع القدس / تلفاكس 02-2799234
ص.ب. 51000 القدس
البريد الالكتروني: sphealth@admin.alquds.edu

بسم الله الرحمن الرحيم

Al-Quds University
Jerusalem
School of Public Health

جامعة القدس
القدس
كلية الصحة العامة

التاريخ: 2021/10/6

حضرة الدكتور نزار قمصية المحترم
المدير الطبي للجمعية العربية/ بيت لحم

الموضوع: تسهيل مهمة الطالبة دلال زواهرة

تحية طيبة وبعد،،
تقوم الطالبة دلال زواهرة ، برنامج ماجستير سياسات وادارة صحية/ كلية الصحة العامة/ جامعة القدس، باعداد بحث الرسالة وباشراف الدكتورة ميساء الاسطا **بعنوان:**

" Palestinian Nurses' Knowledge Perceptions and practice Regarding Occupational Hazards in three Jerusalem Hospitals".

وهي بحاجة الى توزيع استبانه على تمريض المستشفى لدراسة مدى معرفتهم وادراكهم وممارستهم لمخاطر المهنة التي من الممكن التعرض لها وكيفية تجنبها، لذا نرجو من حضرتكم تسهيل مهمة الطالبة، علما بان المعلومات ستكون سرية ولاغراض البحث العلمي فقط.

وتفضلوا بقبول فائق الاحترام،،

لا مانع / الرجاء مقابلة الموضوع مع مدير التمريض. السيد أحمد أبو شرخ.
13/10/21

د. حازم اغا
عميد كلية الصحة العامة

نسخة: الملف

Jerusalem
P.O.Box 51000
Telefax +970-2-2799234
Email: sphealth@admin.alquds.edu

فرع القدس / تلفاكس 02-2799234
ص.ب. 51000 القدس
البريد الالكتروني: sphealth@admin.alquds.edu

بسم الله الرحمن الرحيم

Al-Quds University
Jerusalem
School of Public Health

جامعة القدس
القدس
كلية الصحة العامة

التاريخ: 2021/10/6

حضرة الدكتور نزار حجة المحترم
المدير الطبي لمستشفى جمعية المقاصد الخيرية

الموضوع: تسهيل مهمة الطالبة دلال زواهرة

تحية طيبة وبعد،،
تقوم الطالبة دلال زواهرة ، برنامج ماجستير سياسات وادارة صحية/ كلية الصحة العامة/ جامعة القدس، باعداد بحث الرسالة وباشراف الدكتورة مياسة الاسطا بعنوان:

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وتفضلوا بقبول فائق الاحترام،،

20-3-2022

نسخة: الملف

Jerusalem
P.O.Box 51000
Telefax +970-2-2799234
Email: sphealth@admin.alquds.edu

فرع القدس / تلفاكس 02-2799234
ص.ب. 51000 القدس
البريد الالكتروني: sphealth@admin.alquds.edu