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Occupational Hazards and Nursing Commitment of Standard Precautions at the Emergency Department of Northern West Bank Hospitals Palestine

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Thesis Approval

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Declaration

I declare that the work in this study titled "Occupational hazards and nursing commitment of standard precautions at the emergency department of Northern West Bank Hospitals Palestine carried out by me under the supervision of Assistant Professor Imad Fashafsheh, in the department of Nursing .

In addition, I understand the nature of plagiarism, and I am aware of the University's policy on this .

The work provided in this thesis, unless otherwise referenced, is the researcher's own work and has not been submitted by others elsewhere for any other degree or qualification.

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Date: 12/Dec /2023

Dedication

I want to express my deep appreciation to Associate Professor Dr. Imad Fashafsheh for his exceptional guidance and invaluable feedback during our thesis work. His expert advice played a pivotal role in shaping our research and bringing it to fruition.

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Immense gratitude to you all

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Abstract

Introduction: Occupational hazards are a global health concern, with biological factors being a major cause.

Aim: To assess the level of knowledge and commitment in applying standard precautions and factors that may influence commitment to standard precautions. Additionally, to Investigate the prevalence of and potential factors contributing to exposure to biological occupational hazards among emergency nurses in the northern West Bank.

Method: This study used a cross-sectional descriptive design with stratified random sampling, involving 133 emergency nurses from government and private hospitals in the Northern West Bank .

Results: 39% of nurses had good knowledge of standard precautions, while 73% had low commitment. Significant differences were only found in the level of commitment to standard precautions and gender. The top three factors influence nurses' commitment to Standard precautions were the difficulty in feeling veins, the negative impact of personal protective equipment and staffing shortages.

Furthermore,50% of nurses contracted the coronavirus. In the year before the study, 81% of participants were exposed to body fluids and 96% experienced needle stick injuries. The top three contributing factors were workload ,nurse shortages and fatigue.

Conclusion: The findings revealed that the nurses at the emergency department had good knowledge but substandard commitment to standard precautions. Additionally, a high proportion of nurses in the emergency department were exposed to biological occupational hazards.

Recommendations: Continuous education should focus on practical aspects and reinforce commitment with surveillance, sanctions, and rewards. Emphasize the importance of personal protective equipment for safety and increase staffing to reduce workloads. Also, conduct more observational studies on biological hazards and practice of standard precautions.

Keywords: Occupational hazards, knowledge, standard precautions, commitment, Factors, Emergency Department, Needle-stick injury, biological hazards.

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List of Abbreviations

Abbreviation	Explanation
AAUP	“Arab American University Palestine”
NSI	Needle-stick Injury
HCWs	healthcare Workers
SP	Standard Precaution
HIV	Human Immunodeficiency Virus
WHO	World Health Organization
ER	Emergency Department
CDC	Center for disease control and prevention
PPE	Personal Protective Equipment
HBV	hepatitis B virus
HCV	hepatitis C virus
OSHA	Occupational Safety and Health Administration
CCOHS	Canadian center for occupational health and safety
Blood and Body Fluids	BBFs
HCAIs	Health-care-associated infections
SIS	Sharps Injury Surveillance

CHAPTER ONE

INTRODUCTION

1.1 Background

Occupational hazards are widely recognized as important health concerns around the world (Lebni et al., 2021). According to (D. Chen et al., 2022),biological factors are a significant contributor to occupational hazards. The prevalence of biological occupational hazards is notably elevated among healthcare workers (Ndejjo et al., 2015).Biological hazards refer to the potential risks that healthcare workers may experience in their workplace due to exposure to substances that can pose a threat to their health; these hazards include exposure to blood and body fluids, as well as the risk of needlestick injuries, and infectious diseases (Ayenew et al., 2022; Thirunavukkarasu et al., 2021).

The prevalence of occupational exposure to BBFs in nurses is common, but there is a high rate of under-reporting (Zhang et al., 2022). The most commonly affected group by biological hazards is nurses and needlestick injuries were the most prevalent cause of exposure among healthcare workers. (Maida et al., 2020). Emergency departments are also high-risk settings for the transmission of airborne infectious (Cheong, 2018) . Additionally, several factors, such as not using the necessary personal protective equipment (PPE), job-related pressures, lack of PPEs, longer working hours, lack of access to hand washing facilities, recapping of used needles, lack of training on infection prevention, are associated with the prevalence of biological hazards (Abere et al., 2020; Adal & Abebe, 2022; Ayenew et al., 2022; Kumar & Panigrahi, 2021; Ndejjo et al., 2015; Yasin et al., 2019) .

standard precautions known as a series of precautions proposed for preventing occupational exposures and for handling potentially infectious materials of blood and body fluids, designed to protect healthcare workers from infections,(Bekele et al., 2015). As stated by the Centers for Disease Control and Prevention , Standard precautions are infection prevention procedures that apply to all patients and in all situations, regardless of diagnosis or presumed infection status, commitment to these precautions is essential for preventing the spread of infectious diseases as well as stop the transmission of the infection from patient to patient (CDC, 2016).

1.2 Problem Statement

Occupational hazards, such as infectious diseases and sharp injuries, pose a significant risk to healthcare workers in low- and middle-income countries (Rai et al., 2021). Among healthcare workers, nurses play a crucial role, but face the highest likelihood of experiencing such hazards due to the nature of their duties, including tasks like blood collection, administering injections, inserting cannulas, and medication preparation (Bin-Ghouth et al., 2021; Isara & Ofili, 2012). On a global scale, biological hazards result in substantial costs, which have the potential to rise over time. For instance, each Needlestick Injury (NSI) case places a direct and indirect financial burden on the healthcare system, ranging from 650 to 750 international dollars (Int$)(Mannocci et al., 2016). Furthermore, in 2014, the estimated cost of NSIs at the National University Hospital in Singapore (NUH) ranged from US$109,800 to US$563,152 (Seng et al., 2016)

Although there are policies and protocols established by the World Health Organization to protect healthcare workers by implementing standard precautions, non-

compliance with and neglect of occupational safety measures are still prevalent issues (Senthil et al., 2015). Furthermore, several studies conducted in the past decade have shown a high rate of bloodborne infections among nurses, especially in the emergency department. Needlestick injuries have been pinpointed as a major cause of these infections (Alfulayw et al., 2021; EE & NA, 2018). Compliance with standard precautions measures is lower among emergency department nurses compared to nurses in other departments (S. J. Kim & Lee, 2021).

In the emergency departments of Palestine, nurses are exposed to biological occupational hazards, and the level of commitment to standard precautionary measures among nurses varies. However, there is a significant research gap regarding the prevalence of biological occupational hazards, the level of nursing commitment to standard precautions and the factors associated with compliance and prevalence in Palestine's emergency departments. Therefore, further investigation is needed to address this gap.

1.3 Significance of the Study

The emergency department is a high-stress environment that demands nurses and other healthcare workers to provide quick and efficient care to patients with various medical conditions, including those with infectious illnesses. Nurses in this workplace face significant occupational hazards, such as the possibility of exposure to infectious pathogens, needlestick injuries, and other incidents involving body fluid exposure; these hazards can have severe health consequences (Belachew et al., 2017).

Emergency departments often serve as the first line of defense against both hospital-acquired and community-acquired infections. Therefore, it is essential to

implement proactive infection control measures in these settings. In addition, emergency nurses often have frontline contact with patients affected by infectious diseases (J. S. Kim & Choi, 2016) .Therefore, infection control by these nurses plays an important role to minimizing the risk of spreading disease among patients, staff and visitors(Lam et al., 2019).

There is a lack of research conducted on the extent of nurses' commitment to standard precautions and the prevalence of biological hazards in emergency departments and the factors associated with compliance and prevalence in Palestine's emergency departments. This study aims to fill this critical gap by assess the level of knowledge and commitment in applying standard precautions and factors that may influence commitment to standard precautions. Additionally, to Investigate the prevalence of and potential factors contributing to exposure to biological occupational hazards among emergency nurses in the northern West Bank. This study hopefully promotes infection control practices, to create a safer and healthier work environment, thereby improving patient safety and healthcare outcomes, ultimately reducing the economic burden on the healthcare system Furthermore, serves as a valuable resource for fellow researchers seeking to improve healthcare worker safety and patient care. It can also serve as a reference point for conducting observational studies in the field, further contributing to the body of knowledge.

1.4 Aim of the Study

To assess the level of knowledge and commitment in applying standard precautions and factors that may influence commitment to standard precautions. Additionally, to Investigate the prevalence of and potential factors contributing to

exposure to biological occupational hazards among emergency nurses in the northern West Bank.

1.5 Objectives of the Study

1. To assess emergency department nurses' commitment of standard prevention measures.
2. To assess emergency department nurses' knowledge of standard prevention measures.
3. Assess the differences between demographic characteristic and Nurses' Commitment to Standard Precautions in the Emergency Department.
4. Investigates Potential factors Impact Nurses' Commitment to Standard Prevention Measures.
5. To explore the relationship between nurses' knowledge of standard precautions and commitment to standard precautions in the emergency department.
6. To find out the prevalence of exposure to biological occupational hazards among nurses in the emergency department.
7. Exploring factors influencing the occurrence of exposure to biological occupational hazards among nurses in the emergency department.

1.6 Terms Definition

Commitment to Standard Precautions refers to the extent to which HCWs follow infection control measures, including PPE use, hand hygiene, safe sharps handling, and proper waste management (Mulat Endalew et al., 2022).

Biological Occupational Hazards mean biological substances that threaten healthcare workers, including blood exposure, needle stick injury, and disease transmission like airborne and blood-borne pathogens (Ayenew et al., 2022; Ndejjo et al., 2015).

Knowledge of Standard Precautions (SP) refers to the extent to which respondents comprehend fundamental concepts pertaining to infection control. This includes an understanding of fundamental concepts such as standard hygiene practices, proper hand hygiene techniques, the appropriate use of personal protective equipment (PPE), precautions to minimize the risk of needle stick injuries, and efficient cleaning and disinfection procedures (Al-Hammar L, 2017;Akagbo et al., 2017; Dhedhi et al., 2021).

Factors that affect commitment mean nurses' perceptions regarding the elements that impact the following Standard Precautions. It also includes the underlying reasons for their not adopting protective behaviors. These factors include organizational and work-related elements, individual factors and Knowledge (Efstathiou et al., 2011; Esmail et al., 2019; Piai-Morais et al., 2015; Powers et al., 2016) **.**

Factors contributed to the Prevalence refer to practical, and organizational factors associated with the occurrence of needlestick injuries, sharps injuries, and blood and body fluid exposures (Kasatpibal et al., 2016).

Demographic Data include age, years of experience, marital status, educational level, weekly working hours, and workplace.

1.7 Research Questions

1. What is the level of commitment among emergency department nurses regarding standard prevention measures?

2. What is the level of knowledge among emergency department nurses regarding standard prevention measures?
3. Are there significant differences between the nurses' commitment to standard precautions and demographic characteristics?
4. What are the factors in emergency department that affects nurses' commitment to standard prevention measures?
5. Is there a relationship between nurses' knowledge of standard precautions and their commitment to these precautions in the emergency department?
6. What is the prevalence of exposure to biological occupational hazards among nurses in the emergency department?
7. What are the factors contributing to the prevalence of biological occupational hazards among nurses in the emergency department?

1.8 Conceptual Framework

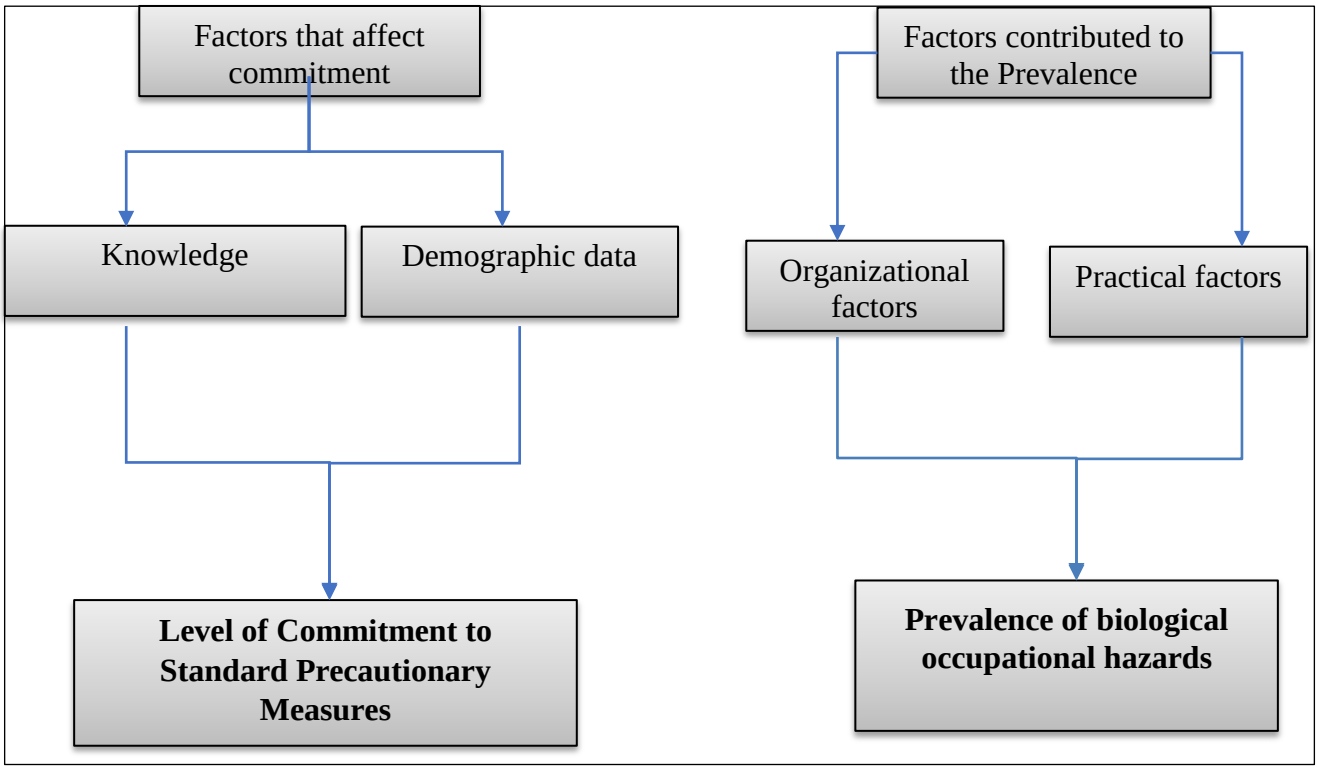

Figure (1.1): Study Conceptual Model

1.9 Operational Definitions

1.9.1 Commitment with SP Measures

In this study, Commitment refers to the appropriate use of personal protective equipment (PPE), hand hygiene, handling of sharps, and appropriate waste management. This aspect will be evaluated through Section Two of the questionnaire, which comprises 17 questions developed by the researcher based on a literature review.

1.9.2 Knowledge of Nurses Regarding SPs

In this study, 'knowledge' refers to nurses' understanding and awareness of standard precaution measures. This aspect will be evaluated through Section Three of the questionnaire, which comprises 21 questions developed by the researcher based on a literature review.

1.9.3 Factors Influencing Commitment

In this study, factors influencing commitment encompass organizational, environmental, and individual aspects that may affect nurses' adherence to standard precautions. These factors are evaluated by Section Four of the questionnaire, which includes 10 questions. developed by the researcher based on a literature review.

1.9.4 Prevalence of Biological Hazards

The frequency at which nurses encounter various types of biological hazards while working in the emergency department. These hazards encompass exposure to blood and body fluids, needle stick injuries, blood-borne infectious diseases, and airborne diseases. The measurement of these hazards is conducted through Section Five of the questionnaire, which comprises four multiple-choice questions developed by the researcher based on a literature review.

1.9.5 Factors contributed to the Prevalence

Factors that may contribute to the prevalence of biological occupational hazards encompass organizational, environmental, and individual aspects. These factors are evaluated by section six of the questionnaire, which includes 10 questions developed by the researcher based on a literature review.

CHAPTER TWO

LITERATURE REVIEW

This chapter discusses the literature published between the years 2008 and 2023 relevant to healthcare workers' commitment and knowledge of standard precaution measures, as well as factors influencing their commitment. It also covers the prevalence of exposure to biological occupational hazards and associated factors, utilizing well-known electronic databases such as PubMed, Google Scholar, CINAHL, Academia, MEDLINE, Scopus, BMC Research Notes, and ScienceDirect. The search terms used included blood and body fluid exposures, needlestick injuries, occupational hazards, knowledge, commitment, factors, healthcare worker, healthcare sectors, and personal protective equipment. The aim of this review is to improve the safety of nurses and reduce exposure to biological occupational hazards in the emergency department.

2.1 Introduction

The emergency department (ED) is a crucial component of the healthcare system, providing essential care services to patients who need immediate attention. However, healthcare workers (HCWs) who work in EDs face various occupational hazards, including bloodborne pathogens and sharp injuries, that can result in serious and life-threatening communicable diseases like hepatitis B, hepatitis C, and HIV (Mathew et al., 2021). Furthermore, the often-crowded environment within EDs amplifies the risk of airborne diseases spreading, thereby introducing additional health hazards (Jeong et al., 2017).

Infectious diseases can be transmitted in various ways, making them difficult to control. Some diseases can spread through direct or indirect contact (e.g., Herpes simplex virus, respiratory syncytial virus, Staphylococcus aureus), while others can be transferred through droplets (e.g., influenza virus, Covid-19, Haemophilus, group A Streptococcus, Bordetella pertussis) or through airborne pathways such as Mycobacterium tuberculosis. Bloodborne viruses such as HIV and Hepatitis B and C viruses can be transmitted by needlestick injuries (NSIs) or mucous membrane exposure, making them a serious hazard that HCWs face every day while caring for patients. In fact, nurses are responsible for the majority of NSIs (El Tawil, 2016; Hashmi et al., 2012). There are no globally recognized guidelines or manuals based on sufficient evidence for infection control in EDs, which is a major concern that calls for urgent attention and action (Sasakietal, 2020).

Standard precautions have been shown to significantly reduce biological occupational hazards for HCWs (Porto & Marziale, 2016). These precautions include critical components such as hand hygiene, personal protective equipment, waste management, and prevention of needlestick or sharp injuries (Beyamo et al., 2019). Nurses play a vital role in commitment of standard precautions to prevent biological occupational hazards (Al-Faouri et al., 2021). However, infection prevention can sometimes be overlooked or overshadowed by more pressing, life-threatening issues or other causes (Liang et al., 2014).

2.2. Biological Occupational Hazards

2.2.1 Occupational Exposure to Blood and Body Fluids and Associated Factors

The emergency department (ED) is a high-risk environment for occupational exposure to blood and body fluids, due to the unpredictable nature of the work and the large volume of patients with infectious conditions (Liang et al., 2014).

Occupational exposure to blood and body fluids occurs when healthcare workers (HCWs) have accidental contact with blood and body fluids during medical interventions; this exposure often leads to splashes reaching the eyes, nose, or mouth, contact with non-intact skin, as well as percutaneous injury from needle sticks or sharps contaminated with blood or body fluids (Sahiledengle et al., 2020).

Bloodborne pathogens are microorganisms, such as bacteria or viruses, found in human blood and other potentially infectious materials (OPIM), including but not limited to pleural fluid, vaginal secretions, semen, amniotic fluid, cerebrospinal fluid, peritoneal fluid, synovial fluid, and pericardial fluid. These pathogens can cause fatal infections and pose a severe risk to healthcare workers (Ghosh, 2013).In fact, Bloodborne pathogen exposure is regarded as the most important occupational health danger encountered by global healthcare workers (Leow et al., 2012; Lori et al., 2016; Wicker et al., 2008).

To better understand this risk and how it can be reduced, (Reda et al., 2010) conducted a study examining the behavior and occupational exposures of 475 HCWs in eastern Ethiopia through a cross-sectional survey. The study revealed that HCWs in the region were at a significant risk of exposure to blood and body fluids, which could lead

to occupational infections for both the HCWs and their patients. Furthermore, the study found that HCWs exhibited suboptimal practices and behaviors. In addition, needle stick injuries and body fluid exposures were strongly associated; exposure incidents occurred possibly due to risky habits and non-compliance with standard precautions, training alone was insufficient to protect HCWs from occupational exposures. However, commitment to standard precautions reduced the risk of exposure incidents by 20%. The lack of infection-prevention supplies was identified as a significant barrier to effective prevention efforts. To address these issues, the study recommends enhancing PPE availability, safety guidelines, reporting mechanisms, compliance culture, and infection-prevention material supply.

Across sectional study done by (Yenesew & Fekadu, 2014) , the objective was to assess the prevalence of occupational exposure to BBFs and related factors among HCPs in Bahir Dar town. According to the findings, of the 317 HCPs included in the study, (65.9%) reported experiencing occupational exposure to BBFs within the past year, with needlestick injuries being the most common form of exposure (29.0%). Additionally, the study revealed the association between occupational exposure and factors such as work experience, inconsistent glove use, and a lack of commitment to standard precautions.

Also, a cross-sectional study supports the high risk of blood and body fluid (BBF) exposure among healthcare workers conducted by (Yasin et al., 2019). Aimed to explore how often healthcare workers (HCWs) at a hospital in Northwest Ethiopia came into contact with potentially harmful body fluids (BBFs), and what factors influenced this exposure. The study involved 282 HCWs. The findings indicated that 58.5% of the

participants had encountered BBF splashes, and 42.2% had experienced needlestick injuries (NSIs) at some point in their lives. Within the past year, 39.0% had been exposed to splashes, while 20.6% had encountered NSIs. The study identified several factors that were found to be associated with the risk of exposure. These factors included the department in which the individual worked, their age, whether they had received infection prevention training, whether they wore eye goggles, the availability of sufficient washing facilities, the presence of safety signs, the existence of an infection prevention committee, whether they had received HBV vaccination, the patient load, and the recapping of used needles.

Furthermore, a cross-sectional study by (Zhang et al., 2022), a sample of 20,791 nurses from 31 province- level divisions in mainland China. The aim of study was to determine the prevalence of occupational exposure to blood and body fluids and the factors that affects it. The study revealed that 52.1% of nurses who had exposure to blood or bodily fluids. Also, the study identified factors that have the potential to affect the probability of such occurrences. These factors include prior work experience, departmental affiliation, hospital location and level, daily working hours, adherence to standard prevention practices, perception of workplace risk, awareness of occupational safety measures, availability of personal protective equipment, utilization of safety-engineered injection devices, and participation in occupational safety training.

Exposure to blood and bodily fluids is becoming more common, especially among nurses working in the emergency department. A cross-sectional study was conducted by (Adal & Abebe, 2022), aimed to investigate the prevalence of occupational exposure to blood and body fluids (BBFs) among nurses in public

hospitals' emergency departments (ED) and intensive care units (ICUs) in Addis Ababa. The study found that a significant proportion of nurses in the ED (76%) and ICU (64%) had been exposed to BBFs, but only 28.5% of the nurses wore all the necessary personal protective equipment (PPE) during procedures. Moreover, 79.8% of the exposed nurses had experienced BBF exposure more than once a year. The study identified several factors associated with occupational exposure to BBFs, including a lack of PPE, inconsistent use of required PPE, inaccessibility of hand washing facilities, and gender.

According to (Li et al., 2022), it is crucial to implement effective measures to reduce and prevent the risk of occupational exposure to bloodborne pathogens among medical personnel. This can be achieved through infection control and prevention training.

2.2.2 Needle Stick Injuries (NSI) and Associated Factors

Healthcare workers can be exposed to bloodborne pathogens through injury, such as percutaneous injury from needle sticks or sharps contaminated with blood or body fluids, which can increase the risk of transmitting hepatitis B, hepatitis C, and HIV, causing systemic and localized site infection with high morbidity and mortality (Abere et al., 2020; Association, 2018; Dhayanithi & Brundha, 2020; Madiba et al., 2018).

Needle stick injuries (NSIs) are the most prevalent and severe, also leading to infection among HCWs, with over 2 million cases occurring annually worldwide (Bouya et al., 2020; Mengistu et al., 2021). NSIs occur when sharps, such as hollow-bore needles, intravenous cannulas, or non-cutting or round-bodied needles, accidentally penetrate the skin, needles contaminated with blood or other bodily fluids, which can potentially transmit infections (Cooke & Stephens, 2017). According to the World

Health Organization (WHO, 2016), NSIs can occur during injection administration or when handling and disposing of contaminated sharps. NSIs can lead to exposure to blood-borne pathogens, including at least 20 different pathogens such as malaria, infectious mononucleosis, diphtheria, herpes, tuberculosis, brucellosis, and spotted fever. However, the most significant blood-borne pathogens of concern are HIV, HCV, and HBV (Jahangiri et al., 2016).

A study conducted by (Ishak et al., 2019), in Malaysia aimed to explore the occurrence and factors associated with needlestick injuries (NSI) among healthcare professionals. The study revealed that doctors and nurses are the most susceptible medical workers to needlestick incidents. The study also discovered significant risk factors for NSI, including age, experience, time of injury, specific tasks performed within different occupational subgroups, and gender. In addition, unsafe practices such as recapping or re-sheathing used needles, as well as improper disposal of needles.

A systematic review and meta-analysis was conducted by (Bouya et al., 2020), aimed to examine the prevalence and causes of needlestick injuries (NSIs) among 50,916 healthcare workers (HCWs) between 2000 and 2018. The study found that the global prevalence of NSIs was 44.5%, with the highest prevalence observed in the Eastern Mediterranean Region and South-East Asia. Dentists had the highest prevalence of NSIs, followed by nursing students. The study also discovered that NSIs were more prevalent in regions with lower-middle socio-economic development (SDI). Hypodermic needles were identified as the most common device-related cause of NSIs. In order to reduce the incidence of needlestick injuries (NSIs) among healthcare workers (HCWs), the study emphasized the importance of adhering to standard

precautions, providing periodic training, establishing reporting systems, fostering a culture of safety within organizations, implementing clear policies, and regularly monitoring adherence to standard precautions guidelines.

In a cross-sectional study conducted by (Isara et al., 2015), at the Accident and Emergency Department of the University of Benin Teaching Hospital, the researchers aimed to determine the prevalence of needlestick injuries (NSIs) and associated factors. The study involved 98 HCWs. The findings revealed that during the year prior to the research, more than half (51%) of HCWs experienced NSIs, the doctors and nurses being the most affected groups. The recapping of needles was identified as the most common cause of NSIs. The study also highlighted several significant factors associated with NSIs, including being aged 30 years or older, having a work experience of three years or longer, and being a nurse.

In a cross-sectional study conducted by (Jahangiri et al., 2016), the objective was to ascertain the prevalence of needle stick injuries (NSIs) among nurses in Iran, also to examine the factors associated with such injuries and to evaluate the safety measures in place. The study encompassed a sample of 168 registered nurses from diverse wards, employing questionnaires and observational checklists as data collection instruments. The incidence of needlestick injuries (NSIs) in the overall duration of employment and within the past year was found to be 76% and 54%, respectively. The injuries primarily involved hollow-bore needles. The preponderance of needlestick injuries (NSIs) transpired during the morning shift. Among the various activities preceding NSIs, the act of recapping needles emerged as the most prevalent. Also, The study revealed that there is a high incidence of underreporting needlestick injuries (NSIs). Additionally, a

statistically significant association was observed between the occurrence of needlestick injuries (NSIs) and variables such as gender, weekly working hours, and monthly shift frequency.

The frequency and causes of needlestick injuries (NSIs) among healthcare workers in Al Madinah Al Munawara were examined by (Albeladi et al., 2021). The research sample included 219 healthcare workers who were randomly selected from the emergency departments of three general hospitals. The findings of the study revealed that nurses experienced the highest frequency of needlestick injuries (NSIs). Approximately 50% of the cases encompassed visibly blood-stained needles, wherein the infection status of patients remained uncertain. Significantly, the main factors contributing to needlestick injuries (NSIs) were the procedures of drawing blood samples, administering injections, and performing suturing. The research additionally identified deficiencies in understanding pertaining to blood-borne infections and awareness regarding the transmission of HIV. Moreover, the observed experience did not have a statistically significant impact on the rates of NSI.

The descriptive-cross-sectional study by (Çalıkoğlu et al., 2019), conducted at Atatürk University Research Hospital aimed to assess the prevalence of Needlestick and Sharp Injury (NSI) incidents among nurses. Surveying 562 nurses, the study revealed a prevalence rate of 21.6% for experiencing at least one needlestick or sharps injury within the previous year. The predominant factor contributing to needlestick injuries was the practice of needle recapping. It is worth noting that nurses who took breaks during their work shifts reported a lower incidence of injuries. The injury rate among female nurses was found to be higher, and those who reported injuries had a statistically

significant lower mean age. There were notable variations in injury proportions based on the length of professional experience. Nevertheless, the incidence of NSI did not exhibit a statistically significant variation depending on the specific nursing ward settings or the receipt of in-service training.

2.3 Knowledge and Commitment with Standard Precautions

Healthcare workers (HCW) are at substantially higher risk of infection than the general population during outbreaks of extremely contagious illnesses like Ebola, severe acute respiratory syndrome (SARS), or coronavirus (COVID-19), as a result of their interaction with patients' infected bodies (Verbeek et al., 2020). Thus, wearing a mask is crucial for reducing and preventing the transmission of droplet infections, such as COVID-19, and severe acute respiratory syndrome (Vo et al., 2020).

Health-care-associated infections (HCAIs) are one of the most important and complicated global health issues (Alzahrani et al., 2019). On one hand, HAIs in terms of patients, are defined as infections that were not present or incubating at the time of admission (Organization, 2011; O'Toole, 2021), on another hand, HAIs in healthcare professionals include occupational infections contracted during clinical practice (Organization, 2011). Thus, the best method to decrease and safeguard HCWs, patients, and the community from HCAIs and avoidable injuries is to comply with standard precautions (Sahiledengle et al., 2018).

Standard precautions (SP), this group of infection control guidelines works to stop or prevent transmitting infections that may be contracted by contact with bodily fluids, mucous membranes, and non-intact skin(Dhedhi et al., 2021). Standard precautions are

followed when delivering treatment to patients, regardless of whether the patient is infected or not (Rosiński et al., 2019).

Previous study has indicated that comprehending and adhering to standard precautions play a vital role in preventing healthcare-associated infections (HAIs) and protecting both healthcare providers and patients by minimizing the risk of exposure to infectious agents(Mudedla et al., 2014; Vaz et al., 2010).

The implementation of standard precautions to prevent the transmission of healthcare-associated infections (HAIs) is significance within the healthcare sector. A study conducted in a tertiary institution in South-West Nigeria found that training on standard precautions had a significant positive effect on the knowledge and attitude of workers who were exposed to body fluids. The participants who underwent the training demonstrated significantly higher knowledge and attitude scores than those who did not receive training (Uchendu et al., 2020).

Furthermore, it has been observed that the provision of training regarding infection control standard precautions can have a substantial positive impact on the knowledge of healthcare workers (HCWs). Specifically, individuals who have undergone such training are 13.3 times more likely to possess a high level of knowledge compared to those who have not received the training (Abalkhail et al., 2021).

The understanding of healthcare professionals regarding SP may be influenced by their training location and occupation, potentially associated with the specific type of training they have received (Chawla et al., 2017).

The knowledge and commitment of emergency department (ED) staff to preventive measures for blood-borne pathogens (BBPs) were investigated in a study conducted by (Aloushan et al., 2022) at King Abdulaziz Medical City in Riyadh. The study encompassed a sample size of 200 emergency department (ED) medical personnel and revealed a noteworthy lack of adherence to the utilization of barrier precautions during procedural interventions among ED staff. The study also indicated that the primary factors contributing to the non-utilization of personal protective equipment were diminished tactile sensation, impaired instrument manipulation, unavailability, and discomfort. In general, the research revealed that emergency department (ED) personnel exhibited lower levels of commitment towards the implementation of protective measures. This could potentially be attributed to negative perceptions, inadequate awareness, and limited understanding regarding the significance of personal protective equipment (PPE) in mitigating and preventing the risk of infection.

A descriptive qualitative study was conducted by (Donati et al., 2019), involving a group of 19 intensive care nurses at a university hospital located in Italy. The objective of this study was to investigate the factors that influence the experiences of intensive care nurses regarding their adherence to standard precautions (SP) during emergency situations. The study involved conducting interviews with four distinct focus groups comprising nurses, with the aim of exploring and understanding their experiences in relation to following standardized protocols (SPs) during emergency situations. The study's main findings were that nurses conflict between the decision to use SPs for self-defense while also trying to preserve the patient's life. When the patient's life was in danger, participants said they complied with SPs just partially and used only gloves, also the pressure of limited time, which represents a heavy barrier to

compliance with SPs competencies. In addition, the nursing knowledge, attitude, and skills that were learned through formal education and work experience influenced the commitment to SPs in an emergency. Furthermore, Participants also mentioned how they improved their compliance with SPs as a result of an incident involving unintentional exposure to biological materials while responding to an emergency. Finally, Participants listed other reasons such as crowding, distance to PPE, and a lack of a safety climate as hindering their ability to complete compliance with SPs in an emergency.

In 2021, (Abuduxike et al.) are conducted a cross-sectional study among 233 healthcare workers (HCWs) in a teaching hospital in Northern Cyprus. The purpose of the study was to assess the knowledge, attitude, and practice of HCWs towards standard precautions (SPs), and to identify any related factors. The study found that there was a significant gap between the knowledge, practice, and attitude of HCWs toward SPs. While more than half (57.5%) of the staff had a satisfactory level of correct knowledge, the proportion of staff who exhibited both a satisfactory positive attitude and satisfactory practice towards SPs was much lower at 37.3% and 30.9%, respectively. Sociodemographic characteristics, such as gender and marital status, as well as work-related factors, such as work experience, do not play a significant role in shaping the knowledge, practice, and attitude of the participants towards (SPs). Moreover, the study emphasized that there is a need for further education and training to ensure that HCWs commit to SPs and prevent potential exposure to infections (Abuduxike et al., 2021).

A cross-sectional study was conducted by (Al-Faouri et al., 2021)at three hospitals in the North of Jordan. Two were public hospitals, and one was a university-

affiliated hospital; the questionnaire was distributed among 300 registered nurses, of whom 266 completed it. The objective of this research was to evaluate the extent of registered nurses' knowledge and compliance with standard precautions in the northern region of Jordan, as well as to identify factors that may be associated with compliance; the study showed that Jordanian nurses have a high level of knowledge regarding standard precautions, scoring an average of 16.27 out of 20. However, their compliance level was only intermediate, with an average score of 49.15 out of 80. Interestingly, while 74.8% of participants knew that used needles should not be recapped, only 34.6% never recapped them. Furthermore, a significant relationship exists between compliance and knowledge, age, and experience. Notably, nurses working in emergency departments had the lowest compliance levels and knowledge scores compared to those in other units. Although the participants had satisfactory knowledge and compliance levels overall, additional training programs and a greater emphasis on standard precautions from educational institutions are needed to improve compliance with infection-control standards among nurses.

Arinze- Onyia et al., 2018 conducted a descriptive cross-sectional study to assess the knowledge and adherence to standard precautions (SP) among healthcare workers (HCWs) at the University of Nigeria Teaching Hospital in Enugu State. The study included 629 HCWs. The findings of the study appropriate level of knowledge and positive attitude towards standard precautions (SP). However, their practical implementation of these precautions was found to be suboptimal. The factors contributing to this behavior included limited and irregular access to personal protective equipment (PPEs), and a shortage of time, difficulty in using PPEs, belief that PPEs did not offer sufficient protection and perceived that they could perform their work safely

without PPE. Moreover, doctors and nurses had significantly higher exposure to patients' serum. The study also found that training on SP and personal protective equipment (PPE) increased the likelihood of healthcare workers using PPE, but did not significantly reduce exposure to patients' serum.

A cross-sectional study conducted by Sahiledengle et al., 2018 , in Addis Ababa aimed to assess infection prevention practices and identify associated factors among 629 healthcare workers in 30 governmental healthcare facilities. The research revealed that healthcare workers (HCWs) exhibited a relatively low incidence of needle stick injuries and exposure to blood or body fluid splashes. Also, the findings indicate that a significant proportion of healthcare workers (HCWs) demonstrated good knowledge of infection prevention measures, positive attitudes towards infection prevention practices, and good infection prevention practices. Several factors were found to be predictive of effective infection prevention practices; these factors encompassed possessing good knowledge, having a positive attitude, being informed about the availability of standard operating procedures (SOP), and working in a department that had a consistent water supply.

Healthcare professionals globally have encountered various challenges pertaining to infection control practices in the wake of the COVID-19 pandemic. A cross-sectional study was conducted in Korea in 2020, in which a sample of 161 emergency nurses was selected using convenient sampling. The primary objective of the study was to identify the factors that influence infection control practices specifically related to COVID-19. The research revealed that the infection prevention environment associated with COVID-19 had the greatest impact. Additionally, the findings of the study indicate

significant correlations between infection control practices and knowledge about COVID-19, perceived severity, perceived benefits, perceived barriers, and monitoring while wearing personal protective equipment (S. O. Kim & Kim, 2022).

A cross-sectional study conducted by (S. J. Kim & Lee, 2021b) , examined the factors that influence emergency department nurses' compliance with standard precautions. The study involved a sample of 140 nurses who were employed in nine emergency departments located in South Korea. The findings indicated that the average level of adherence to Standard Precaution (SP) scores among emergency department (ED) nurses was significantly elevated. To examine the factors that influenced compliance, the study identified individual factors such as self-efficacy, ethical awareness, and history of a cut or puncture injury, as well as organizational factors such as the safety environment and organizational culture for infection control. In contrast, the participants' general and organizational characteristics did not exhibit any noteworthy variations in compliance with SPs.

In a study conducted by (Alhumaid et al., 2021), a systematic review was carried out to investigate the level of knowledge among healthcare workers (HCWs) regarding infection prevention and control (IPC), as well as the various factors that could potentially impact their adherence to IPC precautions. The review encompassed a total of 30 studies conducted between the years 2006 and 2021. The analysis revealed that healthcare workers (HCWs) demonstrated sufficient understanding of the majority of infection prevention and control (IPC) measures. However, deficiencies were observed in their comprehension of occupational vaccinations, modes of transmission for infectious diseases, and the potential risk of infection resulting from needle-stick

injuries. Various factors contribute to noncompliance with infection prevention and control (IPC) precautions. These factors include knowledge gaps, inadequate education and training, high workload, time constraints, unavailability of equipment, difficulties in using hand hygiene agents, absence of implemented IPC protocols, and healthcare workers' belief that patients do not pose a health risk or serve as a source of infection. Moreover, it was observed that urban hospitals exhibited greater rates of compliance compared to their rural counterparts, while older healthcare workers demonstrated a higher tendency to adhere to infection prevention and control (IPC) practices.

A cross-sectional study was conducted by (Schmitz et al., 2021), to examine the correlation between the utilization of personal protective equipment (PPE) and the occurrence of SARS-CoV-2 infections among emergency department (ED) personnel in the Netherlands. A total of 164 employees working in the emergency department participated in the study. The study revealed that ED staff members had a significantly higher infection rate compared to the general population's prevalence; the difference in infection rates among ED staff members may be attributed to various factors, such as the high number of patient contacts in the ED, the risk of aerosol spread during the procedure, and the work conditions of the ED. Furthermore, the research revealed that there was no significant correlation between the type of personal protective equipment (PPE) utilized and the occurrence of COVID-19 infections.

2.4 Summary

This review addresses critical issues concerning healthcare workers' commitment and knowledge of standard precaution measures, along with the factors that influence

their commitment. It also delves into the prevalence of exposure to biological occupational hazards, with key findings outlined below.

Commitment to standard precautions measures is crucial in protecting healthcare professionals from biological occupational hazards, including the transmission of bloodborne pathogens, injuries caused by sharp objects, and the spread of highly contagious diseases. Nevertheless, the level of commitment is an obvious difference across healthcare sectors, which can be attributed to a range of factors, including disparities in knowledge and attitudes, overwhelming workloads, and conflicting priorities.

One of the most significant hazards for healthcare workers is needlestick injuries (NSIs), which can lead to exposure to bloodborne pathogens and severe infections. safety-engineered needle devices and adherence to standard precautions can significantly reduce NSI rates among healthcare workers. But inadequate training, lack of personal protective equipment (PPE), and non-compliance with standard precautions put healthcare workers at high risk of exposure to blood and body fluids.

Nurses, in particular, are at higher risk for exposure to biological occupation hazards; to mitigate the occurrence of such exposures, it is imperative to prioritize the implementation of various strategies. These include providing adequate PPE, comprehensive training on standard precautions, and ensuring compliance with standard precautions.

A safe and healthy work environment is essential for healthcare workers' compliance with infection prevention protocols. The compliance of healthcare workers

can be influenced by various factors, including organizational culture, resource availability, and personal experience with injuries. In order to enhance adherence, it is imperative to establish efficacious infection control programs and cultivate an organizational culture that facilitates compliance. Maintaining compliance with infection prevention protocols necessitates the provision of continuous follow-up and support.

Finally, protecting healthcare workers from occupational hazards is critical; the implementation of infection prevention and control practices plays a pivotal role in establishing a safer environment for healthcare workers and ultimately improving patient outcomes.

The aforementioned discussion highlights the evident need to address this issue within the Palestinian context, as it signifies a significant gap in the current body of literature. There exists a compelling rationale for further exploration in this domain. This research endeavor is anticipated to enrich our comprehension of Occupational Hazards and Nursing Commitment to Standard Precautions in Palestine. Ultimately, it will yield valuable insights that can empower healthcare practitioners and policymakers to formulate a holistic approach aimed at mitigating occupational hazards, reinforcing commitment to standard precautionary measures, and creating a secure environment for both healthcare professionals and patients.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Overview

This chapter covers the study design and its setting, the study population and sampling method, tool of data collection, pilot study, instruments of data collection with scoring method, data analysis, and ethical issues.

3.2 Study Design

This study employed a cross-sectional design to investigate the prevalence of biological occupational hazards among nurses working in the emergency department of hospitals located in the Northern West Bank region of Palestine, it also investigates factors that may lead to exposure, assesses their commitment and knowledge of standard precautions, and investigate challenges they encounter in commitment to precautionary measures

The selection of this design was based on the following:

1. **Ability to Efficiently Gather Data:** This design has the ability to efficiently gather a wide range of data from diverse participants within a single time frame, capturing information without disturbing the study environment.
2. **Assessment of Prevalence**: This design facilitates the assessment of prevalence.
3. **Cost Minimization**: This design minimizes the cost of data collection.

3.3 Study Setting

This study was conducted across governmental and private hospitals of Nablus, Jenin, Tulkarm, Qalqilya and Salfit in the northern West Bank region.

3.3.1 Nablus Hospitals included in the study were:

Al-Watani Hospital: Established during the Ottoman era in 1888, which made it one of the earliest hospitals in Nablus. The hospital offers services encompassing an emergency department that includes 13 beds staffed by 26 nurses.

- Rafidia Hospital : Located in Rafidiya suburb, west of Nablus city, was founded in 1976 and stands as one of the largest healthcare institutions in the northern West Bank. The hospital offers a comprehensive array of diverse treatment services including an emergency department that comprises 18 beds staffed by 24 nurses.
- Al-Najah National University Hospital: A private hospital situated in the town of Asira al-Shamaliya, under the jurisdiction of Nablus Governorate, it was inaugurated in 2014, and it offers treatment services including an emergency department that includes 9 beds staffed by 14 nurses.
- Nablus Specialized Hospital: A private hospital established in the year 2000. The hospital encompasses a variety of departments including an emergency department with a capacity of 7 beds staffed by a nursing team of 11.
- Arab Women's Union Hospital: A private hospital established by the Arab Women's Union Association in 1970. The hospital encompasses various departments including an emergency department with a capacity of 8 beds staffed by a nursing team of 13.

- Arab Specialized Hospital: Owned by the Arab Medical Specialties Group, a private medical consortium established in 1997. 16 nurses at ED, and it has 7 beds.

3.3.2 Jenin Hospitals included in the study were:

- **Jenin Governmental Hospital**: Established in in Jenin City in 1961, formally known as Martyr Dr. Khalil Suleiman Governmental Hospital, which stands as one of the Palestinian governmental healthcare institutions functioning within the West Bank. The hospital's emergency department houses 20 beds and is supported by a nursing staff of 26.
- **Ibn Sina Specialist Hospital**: Ibn Sina Specialized Hospital is one of the hospitals under the Arab Medical Specialties Group, a private medical hospital in Palestine. The hospital, was inaugurated on 2021. Its emergency department comprises 10 beds and is staffed by a nursing team of 12.
- **Al-Razi Hospital**: operates as a private medical facility affiliated with the Zakat Committee, the emergency department of the hospital includes 7 beds and is attended to by a nursing team consisting of 7 professionals.
- **Al-Amal Hospital**: Established in 1984, constitutes one of the non-governmental medical establishments. It falls under the administration of the Charitable Patient Friends Association, the hospital encompasses an emergency department staffed by 7 nurses and equipped with 4 beds.
- **Shifa' Surgical Hospital**: Originally established in 1948 and classified among the private healthcare institutions. The emergency department is equipped with 2 beds and staffed by a team of 5 nurses.

3.3.3 Tulkarm Hospitals included in the study were:

- Thabet Thabet Hospital: A governmental hospital located in the northern West Bank. It stands as the sole government hospital in the Tulkarm Governorate. Operating since the Ottoman era. The hospital encompasses many departments including the emergency department, which is staffed by 19 nurses and houses 14 beds.
- Al-Israa Specialized Hospital: A private hospital, which was formerly known as Al-Zakat Hospital. Officially inaugurated in the year 2000, the hospital's emergency department is staffed by 8 nurses and comprises 5 beds.

3.3.4 One hospital in Qalqilya and one in Salfit were also included in the study as follows:

- Dr. Darwish Nazal Hospital is a government hospital located in Qalqilya. It was inaugurated at the beginning of 2009 and is equipped with various departments. One of these departments is the emergency department, which consists of 8 beds and is staffed by 12 nurses.
- Yasser Arafat Hospital: Located in the Salfit Governorate. The hospital encompasses various departments including the emergency department, which includes seven beds and is staffed by 13 nurses.

3.3.5 One hospital in Tubas

- Tubas Turkish Governmental Hospital: Inaugurated in early 2014. It comprises four floors housing departments with 7 beds allocated to the emergency department. The nursing team comprises 15 nurses.

3.4 Population of the Study

According to the Ministry of Health's General Directorate of Emergency, there are 228 nurses working in the emergency departments of the sixteen aforementioned hospitals.

3.5 Sample

The eligible number of nurses for the study, considering the inclusion and exclusion criteria, is 189, a sample size of 140 participants was determined using the Raosoft Online sample size calculator. This calculation incorporated a confidence level of (95%), an error rate of (5%), and a response distribution of (50%), in addition to accounting for a (10%) dropout rate.

3.6 Sampling Method

The stratified random sampling technique was employed, wherein each hospital was considered as an individual group or stratum. Stratified random sampling is defined by (Nguyen, 2021) as a method of sampling that involves the division of a population into smaller subgroups known as strata. In stratified random sampling or stratification, the strata are formed based on members’ shared attributes or characteristics, such as income or educational attainment. The first step involved the proportion method. Where the number of nurses from each department was divided by the total number of nurses (189), then this ratio was applied to the sample size (140). Subsequently, a list of nurses' names was compiled, sourced from the heads of the emergency department in each hospital, to create the sampling frame.

To select participants for the study, each nurse was assigned a number in each emergency department. A random selection process was implemented using Microsoft Excel, which served as a tool for generating random numbers.

Table 3.1: Required samples in various hospitals

Hospitals	Population	Eligible population	Proportion	Required sample
Jenin Governmental Hospital	26	24	0.13	18
Ibn Sina Hospital	12	10	0.05	7
Al-Razi Hospital	7	5	0.03	4
Al-Amal Hospital	7	6	0.03	4
Al-Shifa Hospital	5	3	0.02	2
Tubas Governmental Hospital	15	13	0.07	10
Dr. Darwish Nazal Hospital	12	10	0.05	7
Yasser Arafat Hospital	13	11	0.06	8
Thabet Thabet Hospital	19	16	0.08	12
Al-Israa Specialized Hospital	8	6	0.03	4
Al-Watani Hospital	26	23	0.12	17
Rafidia Hospital	24	21	0.11	17
Al-Najah National University Hospital	14	10	0.05	7
Nablus Specialized Hospital	11	8	0.04	6
Arab Women's Union Hospital	13	10	0.05	7
Arab Specialized Hospital	16	13	0.07	10

3.6.1 Inclusion Criteria

1. Nurses working in the emergency departments of Northern West Bank hospitals in Palestine and who have been working in the emergency department for at least 12 months.
2. Nurses who approved to participate in the study.
3. Nurses who are directly involved in patient care.

3.7 Instruments of the Study

This study's instruments were based on quantitative research techniques. A questionnaire based on the study's goals.

3.7.1 Questionnaire Design

The researcher developed a six-part self-administered instrument to achieve the study's objectives. This instrument was crafted following a comprehensive literature review to select the most appropriate questions for each part.

1. The first section of the study's questionnaire included seven demographic and background questions developed by the researcher. Participants were asked to indicate their gender, age, marital status, level of education, years of experience, weekly working hours, and the type of hospital they work, by placing a tick mark (√) next to the appropriate answer.
2. In the second section of the questionnaire a total of 17 items were included to assess the nursing commitment to standard precautions. These items were rated on a scale ranging from 1 to 4 points, with 1 representing "never" and 4 indicating "always." The maximum possible score on this scale was 68. Scores below 70% were considered below average, while scores between 71 and 80% were considered average, scores between 81 and 90% were considered good, and scores above 90% were considered very good. The scoring system was developed based on studies conducted by (Kaushal et al., 2015; Uba et al., 2015).
3. The third section of the questionnaire aimed to assess nurses' knowledge of standard prevention measures through a set of 21 multiple-choice questions,

participants were asked to answer a series of questions with “yes,” “no,” or “unknown” responses. Each correct answer was assigned a score of 1 point, while incorrect or unknown answers were assigned 0 points. The scores were then evaluated based on a predetermined grading system. Scores below 70% were considered below average, while scores between 71 and 80% were considered average, scores between 81 and 90% were considered good, and scores above 90% were considered very good. The scoring system was developed based on studies conducted by (Kaushal et al., 2015; Uba et al., 2015).

4. The fourth section of the questionnaire aims to evaluate the key factors that pose challenges to nurses' commitment of standard prevention measures in the emergency. It comprises 10 items that will be evaluated using a five-point Likert-type scale, where participants rate their level of agreement with each statement on the scale. The rating system ranges from 1 ('strongly disagree') to 5 ('strongly agree').
5. The fifth section of the questionnaire, there are Consists of four questions designed in a multiple-choice format, allowing participants to select one or multiple options as applicable that aim to evaluate the prevalence of occupational hazards in the emergency department.
6. The sixth section of the questionnaire to identify factors that could have played a role in the exposure of participants to biological occupational hazards. This section contains 10 items that will be assessed using a five-point Likert-type scale, where participants will rate their level of agreement with each statement

on the scale. A rating of 5 indicates 'strongly agree,' while 1 indicates 'strongly disagree.

The questionnaire was translated into Arabic by a nursing lecturer who is a native Arabic speaker and proficient in English. To ensure conceptual equivalency, the translated version was then re-translated back into English by a bilingual academic lecturer who was not familiar with the original scale. The translated version was then compared to the original to confirm accuracy and equivalence.

3.8 Pilot Study

The pilot study involved 14 participants who were given a clear explanation of the study's objectives. Its purpose was to gather feedback on the questionnaire, including the participants' opinions, any difficulties they encountered, and the average time it took to complete. Participants found the questionnaire to be clear and did not offer any comments. On average, they took 10-15 minutes to complete the questionnaire. The participants were not included in the final study**.**

3.9 Data Collection

After obtaining the necessary permissions from Arab American University, the Ministry of Health, and private hospitals involved in the study, the researcher met with both the head nurses and department heads during these visits and took the time to explain the study's objectives to them. They were also asked to prepare a list of nurses and their schedules to arrange meetings.

The researcher also provided an explanation of the study's objectives to the nurses to ensure their comprehension. Prior to filling out the questionnaire, each participating nurse was required to sign an informed consent form.

3.10 Ethical Considerations

Ethical approval was obtained from Arab American University, the Palestinian Ministry of Health, and the private hospitals involved in the study. A consent form was provided to every participant before the study, along with a clear explanation of the study objectives and tools, and emphasis was placed on voluntary participation, assuring participants of no adverse consequences for those who declined to participate. Ample time was allocated for questions. No names or personal information about the participants were disclosed. All data was kept confidential and used solely for study purposes. To ensure the confidentiality and security of the research data, the researcher implemented necessary measures, such as using strong passwords and encryption for files.

3.11 Data Analysis

In this study, the data analysis was conducted using SPSS, a statistical package for the social sciences, specifically version 26. Descriptive statistics were employed to calculate the frequency distributions, means, and standard deviations of the parameters. Additionally, inferential statistics such as means, standard deviations; one-way ANOVA, and independent t test were employed to assess the relationships between variables. Probability of error (p-value) < 0.05 was considered significant.

CHAPTER FOUR

RESULT

4.1 Introduction

This chapter provides a comprehensive analysis of the study's outcomes. Including the sample description, the level of Nursing Knowledge regarding standard precautions, Nurses' commitment to standard precaution measures, potential factors that might impact this commitment, the prevalence of biological hazards, and the potential factors that might contribute to the prevalence of such hazards.

4.2 Response Rate

The study included nurses from governmental and private hospitals in the North West Bank, Palestine, working in the emergency department. Out of 140 questionnaires distributed, 133 were completed and returned by participants, resulting in a response rate of 95%.

4.3 Reliability of the Study Scales

Table 4.1 presents Cronbach's Alpha values, which were greater than 0.70, indicating satisfactory internal consistency or questionnaire homogeneity.

Table 4.1: Cronbach's Alpha of the scales

Scale	Item	Cronbach's Alpha
Knowledge regarding SP	21 questions	0.74
Commitment to standard SP	17 questions	0.81
Factors impact commitment	10 questions	0.93
Factors contribute to exposure	10 questions	0.91

4.4 Demographic Characteristics

Table 4.2 summarizes the demographic characteristics of the 133 participants in the study. The majority of the participants were male 60.9% (81). The majority of the participants were married 59.4% (79). The age group with the highest representation was individuals between the ages of (26 - 31), accounting for 39.8% (53) of the sample. In terms of educational level 72.9% (97), held a Bachelor's degree. Regarding the participants' level of experience 44.4% (59) of them had (1-4) years. Regarding weekly working hours 61.7% (82) worked (35-40) hours. Hospital-wise 66.9% (89) were employed in governmental hospitals.

Table 4.2: Demographic data for ED nurses (n = 133)

Characteristics	Variables	Frequency	Percent %
Gender	Male	81	60.9
	Female	52	39.1
Marital status	Single	53	39.8
	Married	79	59.4
	Divorced	1	0.8
Age	20-25 years	48	36.1
	26-31 years	53	39.8
	32-37 years	20	15
	More than 37 years	12	9
Educational level	Diploma	15	11.3
	Bachelor's degree	97	72.9
	Master's degree	21	15.8
Years of experience	1-4 years	59	44.4
	5-9 years	46	34.6
	10-14 years	19	14.3
	15-19 years	9	6.8
Weekly working hours	less than 35 hours	14	10.5
	35-40 hours	82	61.7
	41-48 hours	32	24.1
	more than 48 hours	5	3.8
Types of hospital	Governmental	89	66.9
	private	44	33.1

4.5 Level of Nursing Knowledge Regarding Standard Precautions

Table 4.3 shows the level of nursing knowledge regarding standard precautions. The majority of participants 39.1% (52) demonstrated a good Knowledge. Conversely, a small number of participants 16.5%, (22) exhibited knowledge levels below the average.

Table 4.3: Participants' Knowledge of standard precaution measures

category	Score	Frequency	Percent%
Very good	More than 90%	32	24.1
Good	81%-90%	52	39.1
Average	70%-80%	27	20.3
below average	Below 70%	22	16.5

4.6 The Level of Nurses' Commitment with Standard Precaution Measures

Table 4.4 displays the levels of Nurses' commitment towards standard precautions. The findings revealed that a significant proportion of participants 72.9% (97) were categorized as having a 'Below Average' commitment level. Notably, none of the participants scored within the very good category.

Table 4.4: Level of nurses' commitment with standard precaution measures

category	Score	Number	Percent%
Very good	More than 90%	0	0
Good	81%-90%	7	5.3
Average	70%-80%	29	21.8
Below average	Below 70%	97	72.9

4.7 Mean of Knowledge and Commitment with Standard Precautions

Table 4.5 illustrates the participants' mean knowledge and commitment levels regarding Standard Precautions (SP). The overall knowledge score for SP was 16.6 ± 3.03 out of 21, indicating a good level of knowledge. Meanwhile, the overall commitment score for SP was 45 ± 6.03 out of 68, indicating a below-average level of commitment.

Table 4.5: Mean of knowledge and commitment with Standard Precautions

Item	(mean ± standard deviation)
Knowledge about SP	16.6 ±3.06
Commitment to SP	45 ± 6.03

Maximum Knowledge score was 21, Maximum Commitment score was 68

4.8 Factors Impacting Commitment with SPs among Nurses at ED

Table 4.6 illustrates the factors that might influence commitment to SP measures. The main factors were identified as follows: wearing gloves makes it difficult to feel veins when drawing venous blood or inserting a cannula (4.01±1.26); the negative impact of personal protective equipment, such as thermal stress, fatigue, discomfort, and restricted movement (3.93±1.41); a shortage of nursing staff (3.9±1.37); and applying standard precautions takes a long time (3.83±1.06)

The weighted average for this section was calculated as (3.59±1.17). This indicates the overall trend of the various factors affecting nurses' commitment to following standard prevention measures in the emergency department. According to the 5-point Likert scale, where 3.40 to 4.19 represents an agreement, the calculated average

of 3.59 falls within this interval. Therefore, the general trend suggests agreement with the factors mentioned.

Table 4.6: Factors impacting commitment with SPs among nurses at ED

	Statement	M	SD	DOA
1	Wearing gloves makes it difficult to feel veins when drawing venous blood or inserting a cannula.	4.01	1.26	Agree
2	The negative impact of personal protective equipment, such as thermal stress, fatigue, discomfort, and restricted movement.	3.93	1.41	Agree
3	There is a shortage of nursing staff	3.9	1.37	Agree
4	Applying standard precautions takes a long time.	3.83	1.06	Agree
5	Conflicts with the priority of preserving the patient's life.	3.71	1.22	Agree
6	work pressure.	3.57	1.12	Agree
7	In my workplace, it is common practice not to follow standard precautions measures.	3.32	1.3	Neutral
8	My institution does not have policies to enforce employee compliance with standard precautions.	3.32	1.24	Neutral
9	Lack or inadequate PPE.	3.15	1.24	Neutral
10	Impact on my appearance.	3.04	1.14	Neutral
	Overall Average	3.59	1.67	Agree

DOA=Degree of Agreement, M=mean, SD= standard deviation

4.9 Prevalence of Biological Hazards among Nursing at ED

4.9.1 Prevalence of Infectious Agents among Nursing at ED

Table 4.7 presents the findings regarding participant exposure to infectious agents among the 133 individuals included in the study. The results indicate that a significant majority of participants 69.9% (93), exposure to infectious agents. Notably, the highest prevalence of viral infections was observed among 62.4% (83) of the participants.

Table 4.7: prevalence of infectious agents among nursing at ED

Exposure to Infectious Agents			Yes	No
1	At least one of pathogens (Fungal, Viral, Bacterial)	N	93	40
		%	69.9	30.1
2	Fungal	N	3	130
		%	2.3	97.7
3	Viral	N	83	50
		%	62.4	37.6
4	Bacterial	N	30	103
		%	22.6	77.4

N= number, % = percentage

4.9.2 Prevalence of Blood and Body Fluids Exposures among ED Nurses

Table 4.8 provides an overview of the findings related to participant exposure to Patient Body Fluid among the 133 individuals included in the study. The results reveal that a significant majority of participants 80.5% (n=107), exposure to Patient Body Fluid. Specifically, the highest prevalence of exposure was related to blood, observed among 75.2% (n=100) of the participants, followed by who were exposed to urine 34.6% (n=46).

Table 4.8: Prevalence of blood and body fluids exposures among nurses at ED

	Body fluids		Yes	No
1	Exposure occurrence to any body fluid	N	107	26
		%	80.5	19.5
2	Blood	N	100	33
		%	75.2	24.8
3	Urine	N	46	87
		%	34.6	65.4
4	Feces	N	21	112
		%	15.8	84.2
5	Vomit, Saliva or other secretions	N	32	101
		%	24.1	75.9

N= number, % = percentage

4.9.3 Prevalence of NSIs within the Past Year among Nurses at ED

The prevalence of NSI is shows in the following figure:

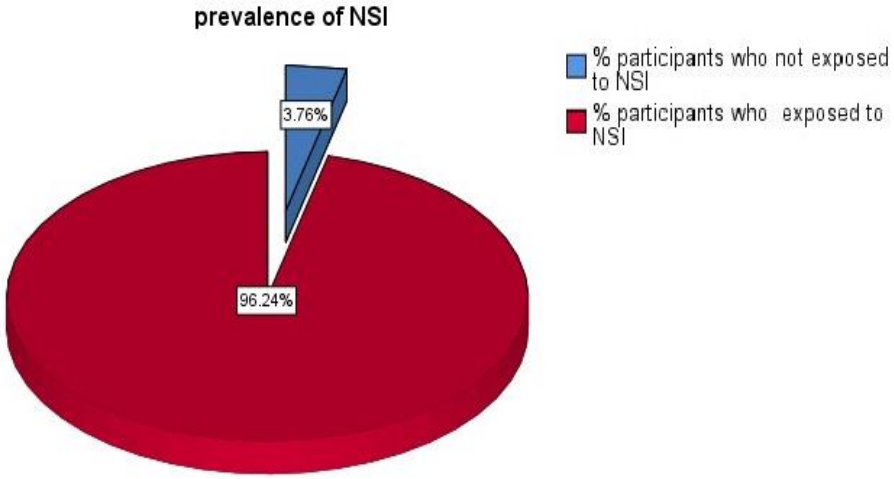

Figure (4.1): Distribution of participants according to exposure to NSI in the past 12 months

Figure (4.1) shows that in the past 12 months, prior to the study,96.2% ***(***n=128) of participants were exposed to NSI as opposed to 3.8% (n=5) who were not exposed to NSI.

4.9.3.1 Frequency of NSIs within the Past Year among Nurses at ED

Table 4.9 presents the findings regarding participant exposure to needlestick injuries (nsis) during the 12 months prior to the study. The results indicate that 49.60% (66) of participants reported being exposed to one to five nsis, while 6.80% (9) of participants reported being exposed to more than ten times.

Table 4.9: Frequency of NSIs within the past year among nurses at ED

	Needle Stick Injury	N	%
1	1-5 times	66	49.60%
2	6-10 times	53	39.80%
3	More than 10 times	9	6.80%

N= number, % = percentage

4.9.4 Prevalence of Infectious Diseases among Nurses at ED

Table 4.10 presents the findings regarding participant exposure to infections among nurses in ED among the 133 individuals included in the study. The results reveal that a significant majority of participants 50.4% (n=67), exposure to COVID-19, while 49.6% (n=66) of participants reported no exposure to the COVID-19. Additionally, there were no participants exposed to Tuberculosis or HIV/AIDS

Table 4.10: Prevalence of Infectious Diseases among Nurses at ED

	infectious diseases		Yes	No
1	Hepatitis B	N	5	128
		%	3.8	96
2	Hepatitis C	N	2	131
		%	1.5	98.5
3	Tuberculosis	N	0	133
		%	0	100
4	HIV/AIDS	N	0	133
		%	0	100
5	COVID-19	N	67	66
		%	50.4	49.6

N= number, % = percentage

4.10 Potential Factors for Exposure to Biological Hazards among ED Nurses

Table 4.11 shows the factors contributing to exposure to biological hazards. The primary factors identified were workload (4.34±1.02), shortage in the number of nursing staff (4.18±0.99), and hurry and inattention (4.04±1.25).

The overall weighted average for these factors is (3.84 ± 0.85), falling within the "Agree" category based on the 5-point Likert scale. Therefore, the general trend suggests agreement with the factors was mentioned.

Table 4.11: Potential factors for exposure to biological hazards among ED nurses

	Statement	M	SD	DOA
1	Workload.	4.34	1.02	Strongly Agree
2	Shortage in the number of nursing staff	4.18	0.99	Agree
3	Stress and fatigue.	4.11	1.17	Agree
4	The hurry and inattention.	4.04	1.25	Agree
5	Not receiving training courses on standard precaution measures	3.86	1.17	Agree
6	Not following the guidelines of standard precaution measures.	3.85	1.22	Agree
7	Lack of awareness about the benefits of applying Standard Precautions	3.64	1.26	Agree
8	Inadequate hand washing facility	3.57	1.33	Agree
9	Lack of personal protection equipment (PPE)	3.55	0.96	Agree
10	The lack of sharps disposal container	3.26	0.87	Neutral
	Overall Average	3.84	0.85	Agree

DOA=Degree of Agreement. M=mean, SD = standard deviation

4.11 Differences in Commitment with SPs among Demographic Data

4.11.1 One-way ANOVA on SPs Commitment and Demographic Data

Table 4.12 displays the results of a one-way ANOVA test conducted to assess whether there are any significant differences in the mean scores of Commitment to

Standard Precautions across various categories, including educational level, experience, weekly working hours, and age. The results indicate that there were no statistically significant differences in the mean scores, with a p-value > 0.05.

Table 4.12: One-way ANOVA on SPs Commitment and Demographic Data

Characteristics	Category	N	Mean	SD	F	Sig.
Educational level	Diploma	15	48.067	4.964	1.9	0.153
	Bachelors	97	44.876	6.145		
	Masters	21	45.81	5.913		
Experience	1-4 years	59	45.661	5.425	1.08	0.362
	5-9 years	46	45.022	6.072		
	10-14 years	19	46.737	6.252		
	15-19 years	9	42.556	8.791		
Weekly working hours	less than 35 hours	14	46.429	7.572	0.158	0.924
	35-40 hours	82	45.293	5.483		
	41-48 hours	32	45.156	6.3		
	more than 48 hours	5	45.4	9.711		
Age	20-25 years	48	45.958	5.623	0.775	0.51
	26-31 years	53	44.472	5.594		
	32-37 years	20	46.5	5.943		
	more than 37 years	12	45.25	9.226		

SD=standard deviation, sig=significant, N =number , Significant at P-value <.05

4.11.2 Independent t-test on SPs Commitment and Demographic Data

Table 4.13 presents the results of independent t-tests conducted to examine potential variations in mean scores of Commitment to Standard Precautions based on gender, marital status, and type of hospital. The analysis revealed a significant difference in mean scores between genders (p-value < 0.05), indicating that females are

more committed than males. However, no significant differences were observed based on marital status or type of hospital.

Table 4.13: Independent t-test on of SP Commitment and Demographic Data

Characteristics	category	N	Mean	SD	t value	Sig.
Gender	Male	81	44.54	5.71	2.03	0.045*
	Female	52	46.69	6.34		
Marital status	Single	53	45.057	5.089	0.6	0.55
	Married	79	45.671	6.619		
Types of hospital	Governmental	89	45.843	5.912	1.25	0.21
	private	44	44.455	6.237		

**=less than 0.05, SD=standard deviation, sig=significant, N =number , Significant at P-value <.05*

4.12 Correlation between knowledge and Commitment with SPs

As seen in Table 4.14, the Pearson correlation coefficient between knowledge and commitment was calculated as 0.039. The statistical analysis revealed that this correlation was not statistically significant (p-value > 0.05). Therefore, the observed weak positive relationship between knowledge and commitment may be attributed to chance rather than a meaningful association.

Table 4.14: Correlation between knowledge and Commitment with SPs

Variables	value
knowledge	r = 0.039
commitment	Sig. = 0.659

r=correlation coefficient, sig=significant, Significant at P-value <.05

4.13 Summary

The analysis found that 39.1% had good knowledge of standard precautions, while 16.5% had below-average knowledge. Also, a significant proportion of participants 72.9% (97) were categorized as having a 'Below Average' commitment towards standard precautions.

Difficulty in palpating veins, the negative impact of PPE, staff shortages, Limited time availability, and conflicts with patients' survival, work pressure are the main factors that influence nurses' commitment to standard precautions.

Moreover, the current study revealed an alarming prevalence of biological occupational hazards, with 81% reporting exposure to body fluids at least once. The most commonly reported body fluid exposure was blood (75%), followed by urine (35%). Additionally, the prevalence of NSIs was 96% in the past 12 months. Furthermore, 50.4% reported exposure to COVID-19. The main causes were workload, a shortage in the number of nursing staff, and stress and fatigue.

Statistically significant differences were found only between gender and nursing commitment of SP measures.

CHAPTER FIVE

DISCUSSION, CONCLUSION & RECOMMENDATION

5.1 Introduction

This chapter aims to provide a comprehensive discussion in line with the purpose of the study. The main objective of this research was to assess the level of nursing commitment to standard precautions and determine the prevalence of occupational infection hazards among nurses working in the emergency department of the Northern West Bank.

5.2 Nurses' Knowledge and Commitment to Standard Precaution

The results of this study indicate a good level of knowledge among the participants. The study showed a mean total knowledge score of approximately 16.6/21 (79%). This level of knowledge aligns with the findings of (Kaushal et al., 2015) and surpasses the results reported in studies by(Ayed et al., 2015; Fashafsheh et al., 2015; Ni et al., 2023). However, it was found lower than the scores reported in the study by .This may due to attributed to the lack of specific training courses on standard precautions for nurses in the targeted hospitals, A study conducted by (Yasmeen et al., 2022) ,highlighted a positive correlation between training and knowledge of standard precautions. Therefore, there is an urgent need for implementing professional programs to improve knowledge of standard precautions among nurses in the ED.

Our study showed that the rates of commitment to standard precautions were found to be 45 out of 68, resulting in an overall commitment rate of 66%. This commitment rate aligns with the findings of (Asmr et al., 2019), but is lower than the

results of previous studies(Ayed et al., 2015; Fashafsheh et al., 2015; Kaushal et al., 2015). The discrepancy observed compared to previous studies could be related to the overcrowded and high workload in the emergency department, which posed challenges for nurses in maintaining their commitment to standard precautions.

In current study, a significant difference in nurses' commitment to Standard Precautions based on gender was observed. Females were more likely to exhibit commitment to SPs compared to males, this result aligns with the study conducted by (Geberemariyam et al., 2018). The higher compliance among female may be attributed to their natural tendency to adhere to organizational rules, their perception of risk, and their extra caution against infections. Additionally, another possible explanation is that male nurses underestimated the burden and consequences of exposure to blood and body fluids, leading to their lack of attention to adhering to these precautions.This highlights the importance of improving compliance with standard precautions and underscores the necessity for ongoing, targeted training programs focused on standard precautions to promote adherence to infection control measures among male healthcare workers.

However, there was no significant correlation between knowledge and commitment toward standard precautions among nursing staff in the ED, contradicting studies by . (Al-Faouri et al., 2021; Kaushal et al., 2015; Sahiledengle et al., 2018; Shajahan et al., 2023; R. Sharma et al., 2021; Sherah, 2015), which reported a positive correlation between knowledge levels and commitment to standard precautions. However, the impact of knowledge on the practice of healthcare personnel has been debated, and previous studies (Anuar et al., 2021; M. K. Sharma et al., 2021), have also

concluded that knowledge about standard precautions does not necessarily affect commitment and application. This discrepancy may be due to the fact that knowledge alone is not the sole determining factor for commitment to standard precaution practices and may be attributed to other factors. To gain a better understanding of this discrepancy, our study focused on the factors that may impact commitment to standard precautions.

The main factors influencing the commitment to standard precautions (SP) found in this study were the difficulty in palpating veins and the negative impact of personal protective equipment (PPE), which were the most prevalent. These findings are consistent with studies conducted by .(Aloushan et al., 2022; Arinze-Onyia et al., 2018; Efstathiou et al., 2011).

Another major factor is that workload negatively affects nurses' commitment to standard precautions. This aligns with (Lien et al., 2018; Ogoina et al., 2015; Parmeggiani; Quan et al., 2015; et al., 2010),demonstrating the impact of high workload, staff shortage, and patient-to-nurse ratios as factors contributing to non-compliance with standard precautions. Therefore, there is a need for strategies for workload management, staffing optimization, and providing comprehensive training and education programs to support commitment to SP guidelines.

On the other hand, studies by (Zeb et al., 2019) found that factors such as equipment availability and their influence on nurses' appearance contribute to non-compliance with standard precautions, which contrasts with our findings. These discrepancies may arise from variations in culture or organizational structure.

5.3 Prevalence of Biological Hazards among ED Nurses

Current study findings revealed that 81% of nurses were exposed to (BBFs) during the past 12 months. This finding is significantly higher than those reported in the studies conducted by (Elabor et al., 2020; Yang et al., 2021). This discrepancy may be attributed to variations in the study settings. For instance, in our study, participants were exclusively nurses in the Emergency Department (ED). In contrast, the above-mentioned studies encompassed all healthcare workers (HCWs) and departments. It could also be due to the higher patient load in our study setting, influencing the compliance with Personal Protective Equipment (PPE) among nurses. This aligns with a recent study carried out in Addis Ababa City by (Adal et al., 2023), where nursing staff in the emergency department exhibited a prevalence rate of 77%, this illustrating the impact of specific work environments on(BBFs) exposure rates.

The current study found that 50.4% of the participants reported being affected by COVID-19, consistent with studies conducted by (Harith et al., 2022; Sabetian et al., 2021),both of which also showed a high prevalence of COVID-19 among healthcare workers in the emergency department (ED). This high prevalence might be explained by the fact that emergency departments are high-risk areas for contracting COVID-19 infection. Emergency department staff are usually in contact with patients of unknown COVID-19 infectivity status, and this risk increases during risky procedures like tracheal intubation or cardiopulmonary resuscitation (CPR). Additionally, low compliance with PPE precautions may occur during the early stages of a pandemic, and the adequacy of PPE could be another issue, insufficient understanding of COVID-19 (Kishk et al., 2021).

The current study found relatively low prevalence rates of infectious pathogens among nurses in (ED), with rates of 3.8% for HBV, 1.5% for HCV, 0.0% for HIV, and 0.0% for TB. These results differ from previous studies in various regions. For example, (Shao et al., 2018) reported a 9.5% prevalence of HBV among healthcare workers in an emergency setting. (Gyang et al., 2016) observed 8.4% HBV and 6.5% HCV among healthcare workers in a semi-urban area in north-central Nigeria. (Elbahrawy et al., 2017) found 7.1% HCV prevalence among healthcare workers in rural Lower Egypt. In Cameroon, (Domkam et al., 2018) reported a 2.61% prevalence of HIV/AIDS among healthcare workers. Additionally, (Agaya et al., 2015), documented a 7.4% TB infection rate, and (Coppeta et al., 2019), found(5.5%)prevalence of latent TB among nurses.

The low prevalence rates of infectious pathogens can be attributed to variations in study settings and the rarity of these pathogens in our population, as supported by (Hamarsheh, 2020), and documented in the Ministry of Health Annual Health Report (2019-June 2020) for Palestine (Ministry of Health Annual Health Report - Palestine 2019-June 2020, n.d.). Additionally, the sample size in our study may have played a role in influencing the observed prevalence rates.

Our study findings reveal that 96% of respondents reported experiencing at least one needlestick injury in the past 12 months. This percentage is significantly higher than the rates reported in other studies. For example, in northwestern Tanzania (Chalya et al., 2015), reported a prevalence rate of 71% among nurses, with 33.3% occurring in the Accident and Emergency Department (ED). In Nigeria, (Isara et al., 2015) reported a prevalence rate of 70% among nurses. In Tehran, (Amini et al., 2015) indicated a prevalence rate of 67.8%, with 33.5% occurred in the ED. In Ghana, (Lori et al., 2016)

reported that 28.9% of needlestick injuries occurred in the ED. In India, (Sriram, 2019) reported a prevalence rate of 9% among healthcare providers. In Singapore, (Seng et al., 2016) reported 9% of NSIs occurred in the emergency department.

The high prevalence of needlestick injuries observed in our study could be attributed to the lack of implementation of standard precautions, pressure on nurses to complete tasks, and the nature of nurses' jobs, as they often perform procedures involving sharp items and the need for acting quickly. Additionally, the absence of engineered safety devices.

The high prevalence of NSIs among nurses in the ED underscores the importance of implementing programs to prevent NSIs. These programs may include specialized training and education aimed at providing comprehensive instruction to nurses on safe needle handling practices. This training encompasses prohibiting recapping, teaching one-handed techniques, proper disposal methods, and promoting the use of safety devices. Additionally, it is essential to monitor and enforce compliance with NSI prevention protocols, with clear consequences for non-compliance. Furthermore, notable reductions in NSIs have been observed when using double pairs of gloves (Mischke et al., 2014) and implementing sharp devices with safety engineering controls (Dulon et al., 2020; Jahangiri et al., 2016)

5.4 Factors Exposing Emergency Department Nurses to BBFs and NSIs

The main factors that respondents believed contributed to the occupational exposure to blood and body fluids (BBFs) and Needlestick Injuries (NSIs) were workload and nursing staff shortages. This finding is consistent with studies conducted by (Bagheri Hosseinabadi et al., 2019; Kasatpibal et al., 2016), which also identified inadequate

staffing and experiencing work overload as risk factors for exposure.Another study conducted by (Türe et al., 2016),found that heavy workloads and extended working hours increase the risk of exposure.These findings further emphasize the critical need to develop strategies to manage workload and address staffing shortages to reduce exposure.

Another major factor that respondents believed contributed to exposure to blood and body fluids (BBFs) and Needlestick Injuries (NSIs) was stress and fatigue. This finding aligns with research conducted by (J. Chen et al., 2014) ,in the USA, where nurses working twelve-hour shifts during the day experienced an unhealthy fatigue-recovery process, resulting in a higher risk of exposure incidents to HIV/AIDS. Another study in Thailand conducted by (Kasatpibal et al., 2016),found that long hours worked per week were potential risk factors for (NSIs)and(BBFs). The findings underscored the significance of fatigue management and job stress mitigation, to minimize the risk of occupational exposure, it is recommended to implement rotating shifts, provide regular breaks, and prevent double-jobbing and double shifts.

The third significant factor that respondents believed contributed to occupational exposure to blood and body fluids (BBFs) and Needlestick Injuries (NSIs) was hurry and inattention. This finding is consistent with the study conducted by (Serinken et al., 2009), which found that hurrying and inattention were the most common causes of injuries observed in the emergency department. Additionally, a study by (Kasatpibal et al., 2016) identified a lack of hazard awareness, outdated guidelines, training without practice, and haste as the primary risk factors for (NSIs) . These findings underscore the need to control the chaotic environment and manage overcrowding in the emergency

department to reduce the occurrence of hurry and inattention, which could help mitigate exposure among nurses

5.5 Conclusion

Standard precautions are a set of infection control practices to prevent the transmission of infections; these precautions are applied to all patients. Also, Standard precautions are the foundation of infection prevention and are crucial in minimizing the risk of spreading infectious agents in any healthcare environment.

Standard precautions are indispensable infection control practices applied to all patients in healthcare settings, serving as the bedrock of infection prevention to minimize the transmission of infectious agents. The emergency department, a critical healthcare environment, faces various infection occupational hazards that pose specific risks to healthcare workers. These hazards include exposure to airborne and bloodborne pathogens, as well as contact with bodily fluids. This study aims to shed light on the level of knowledge, level of commitment, and factors that may influence commitment to standard precautions. Additionally, to explore the prevalence of and potential factors contributing to exposure to biological occupational hazards among emergency nurses in the northern West Bank.

The study revealed that emergency department nurses' average commitment to standard precautions was low, with a total score of 68%; this indicates a significant gap that demands immediate attention. In addition, despite the nurses in the emergency department possess an average level of knowledge regarding standard precautions, no correlation was found between knowledge and actual practice.

Several factors beyond knowledge play a crucial role in determining commitment levels, were identified as major challenges to nurses' commitment to standard protective measures in the emergency department. Among these factors were the practical difficulties posed by wearing gloves, which hindered their ability to feel veins during procedures, and the negative effects of personal protective equipment (PPE), such as heat stress, fatigue, discomfort, and restricted movement. Additionally, the shortage of nursing staff and the time-consuming nature of applying standard precautions, especially in high-pressure emergency situations, further added to the complexity of maintaining compliance.

The study's alarming data revealed that a significant percentage of nursing staff in the emergency department were exposed to infectious agents, with 70% encountering bacterial, viral, or fungal agents. Furthermore, 81% of nursing staff encountered bodily fluids, with blood being the most common. Furthermore, 96% of the nursing staff reported experiencing needle stick injuries; these needles were contaminated with the patient's bodily fluids.

Moreover, it is essential to acknowledge the upper-ranking factors that significantly contribute to nurses' exposure to occupational hazards. Work pressure and the lack of adequate nursing staff emerged as the primary factors responsible for nurses' increased vulnerability to such hazards.

5.6 Recommendations

Based on the study results the researcher recommended the following:

- Providing continuous education for nurses that focuses on the practical aspects and the benefits of standard precaution
- improving occupational behaviors like avoiding needle recapping to reduce NSI and implementing engineered sharps injury prevention devices
- To enhance commitment to standard precautions, it is advisable to implement surveillance, sanctions, and rewards to deter negative behavior and promote positive practices related to Standard Precautions
- To minimize blood and body fluid exposure, use all required personal protective equipment during procedures and patient care.
- Develop strategies to create a favorable and safe working environment by addressing the factors identified in this study as reasons for non-compliance with standard precautions and exposure to biological hazards.
- Conduct further observational studies to assess occupational exposure to biological hazards and commitment to standard precautions

5.7 Limitations

- The use of a questionnaire in our study introduces the potential for self-report bias, as participants may overestimate or underestimate their commitment to standard precautions.
- Response bias may occur due to varying levels of motivation or interest among participants when completing the questionnaire.

- The study only included nursing participants in an emergency department at a specific hospital in the northern-west bank, limiting the generalizability of the findings to other settings.
- The dynamic, fast-paced, overcrowded, and high workload nature of the emergency department setting posed challenges for participants in completing the questionnaire.
- Obtaining an adequate sample size required many visits to the emergency department over several days and spent too much time and effort.

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Appendix: Questionnaire

Dear participant

Thank you for your interest in our research project titled "Occupational Infections Hazard and Nursing Commitment to Standard Precautions at the Emergency Department of Northern West Bank Hospitals Palestine." Our goal is to investigate the prevalence of occupational infection hazards, the level of knowledge and adherence of emergency nurses to standard precautions, and the factors contributing to the occurrence of these hazards in emergency departments. Your participation in this study is voluntary. If you choose not to participate or change your mind at any time during the study, you may withdraw without penalty. Your responses will be kept confidential, and we will not collect any personal information, such as your name or email address. Completing the questionnaire should take no more than 20 minutes. We value your time and appreciate your willingness to assist us in our research. If you have any questions or concerns, please do not hesitate to contact our research team at 0568123903. Thank you for your cooperation and support.

عزيزي المشارك

نشكرك على اهتمامك بمشروع البحث الخاص بنا بعنوان "**المخاطر المهنية ومدى التزام التمريض بالاحتياطات القياسية في قسم الطوارئ في مستشفيات شمال الضفة الغربية في فلسطين"**. يهدف المشروع الى دراسة انتشار مخاطر العدوى المهنية، ومدى معرفة والالتزام الممرضات في قسم الطوارئ بالاحتياطات القياسية، والعوامل التي تساهم في حدوث تلك المخاطر في أقسام الطوارئ.

مشاركتك في هذه الدراسة تعد طوعية. إذا قررت عدم المشاركة، أو تغيير رأيك في أي وقت خلال الدراسة، فيمكنكَ الانسحاب. سيتم الحفاظ على سرية إجاباتك، ولن نقوم بجمع أي معلومات شخصية مثل اسمك أو عنوان بريدك الإلكتروني.

ملء الاستبيان لن يستغرق أكثر من 20 دقيقة. نقدر وقتك ونشكر استعدادك للمساعدة في بحثنا. إذا كان لديك أي أسئلة أو استفسارات، فلا تتردد في الاتصال بفريق البحث على 0568123903.

نشكرك على تعاونك ودعمك

Part 1: Demographic Information: please put a tick mark (√) next to your chosen answer. القسم الاول : البيانات الديموغرافية ، يُرجى وضع علامة (√) بجانب الإجابة التي تختارها.		
Response (الاجابة)	Question (الأسئلة)	#
Male (ذكر) ☐ Female (أنثى) ☐	Gender الجنس	1
من 20 –25 سنة ☐ من 26 –31 سنة ☐ من 32 –37 سنة ☐ اكبر من 37 سنة ☐	Age (العمر)	2
☐ Less than 1 year (اقل من سنة) ☐(1-4) years (1 – 4 سنوات) ☐ (5-9) years (5 – 9 سنوات) ☐ (10-14) years (10 – 14 سنة) ☐ (15-19) years (15- 19 سنة) ☐ More than 20 years (اكثر من20 سنوات)	Years of experience سنوات الخبرة	3
☐ Single (أعزب) ☐ Married (متزوج) ☐ Widowed (أرمل) ☐Divorced (مطلق) ☐ Separated (منفصل)	Marital status (الحالة الاجتماعية)	4
☐ Diploma (دبلوم) ☐ Bachelor's degree (بكالوريوس) ☐ Master's degree (ماجستير)	Educational level (المستوى التعليمي)	5
☐ Less than 40 (اقل من 40 ساعة) ☐ 40-42 (ما بين 40 و 42) ☐ 43-45 (ما بين 43 و 45 ساعة) ☐ More than 45 (اكثر من 45 ساعة)	Weekly working hours (العمل الأسبوعي عدد ساعات)	6
☐Government hospital مستشفى حكومي ☐private hospital مستشفى خاص	Workplace? (مكان العمل)	7

Part II: The purpose of these questions are intended to evaluate the level of commitment of nurses in the emergency department towards standard precaution measures. To indicate your behavior in regards to standard precaution measures, please placing a checkmark (√) in the corresponding box that best describes your behavior.

الجزء الثاني :الغرض من هذه الأسئلة هو تقييم مستوى التزام التمريض في قسم الطوارئ بتدابير الاحتياطات القياسية. للإشارة إلى سلوككم فيما يتعلق بتدابير الاحتياطات القياسية، يرجى تحديد الخيار المناسب عن طريق وضع علامة (√) في المربع المقابل الذي يصف سلوككم بشكل أفضل.

#	الأسئلة	دائما	أحيانا	نادرا	أبدا
1	Before touching the patient, I wash my hands (with soap and water or alcohol-based sanitizer) قبل ملامسة المريض اقوم بغسل يدي (بالماء والصابون أو المطهر الكحولي)				
2	Before cleaning and disinfecting areas where patients are present, I wash my hands (with soap and water or alcohol-based sanitizer). قبل تنظيف وتطهير الأماكن التي يتواجد بها المرضى اقوم بغسل يدي (بالماء والصابون أو المطهر الكحولي)				
3	After touching bodily fluids from the patient, I wash my hands (with soap and water or alcohol-based sanitizer). بعد ملامسة السوائل التي يفرزها جسم المريض اقوم بغسل يدي (بالماء والصابون أو المطهر الكحولي)				
4	After touching the patient, I wash my hands (with soap and water or alcohol-based sanitizer.(بعد ملامسة المريض اقوم بغسل يدي (بالماء والصابون أو المطهر الكحولي)				
5	After touching the patient's surroundings, I wash my hands (with soap and water or alcohol-based sanitizer). بعد ملامسة محيط المريض اقوم بغسل يدي (بالماء والصابون أو المطهر الكحولي)				
6	After removing medical gloves, I wash my hands (with soap and water or alcohol-based sanit بعد نزع القفازات الطبية اقوم بغسل يدي (بالماء والصابون أو المطهر الكحولي)				
7	I wear gloves for every procedure where I deal with patients. أترتدي القفازات لكل إجراء أتعامل فيه مع المرضى				
8	I return the needle to its cover after use. أقوم بإرجاع الابرة الى غطائها بعد استخدامها				
9	I place sharp objects used in a sharp box. أقوم بوضع الادوات الحادة المستخدمة في صندوق الادوات الحادة				

Part II: The purpose of these questions are intended to evaluate the level of commitment of nurses in the emergency department towards standard precaution measures. To indicate your behavior in regards to standard precaution measures, please placing a checkmark (√) in the corresponding box that best describes your behavior.

الجزء الثاني :الغرض من هذه الأسئلة هو تقييم مستوى التزام التمريض في قسم الطوارئ بتدابير الاحتياطات القياسية. للإشارة إلى سلوككم فيما يتعلق بتدابير الاحتياطات القياسية، يرجى تحديد الخيار المناسب عن طريق وضع علامة (√) في المربع المقابل الذي يصف سلوككم بشكل أفضل.

#	الأسئلة	دائما	أحيانا	نادرا	أبدا
10	I dispose of the sharp box when it is 75% full or when the marked line is reached. أقوم بالتخلص من صندوق الأدوات الحادة "box sharp" عندما يكون ممتلئًا بنسبة 75% أو عند الوصول إلى العلامة المحددة على الصندوق				
11	I cover my nose and mouth with tissues or elbow when coughing or sneezing أقوم بتغطية الانف و الفم بالمناديل او مرفق الذراع عند السعال او العطس				
12	I cover my nose and mouth when wearing a medical mask أقوم بتغطية الفم والانف عندما أرتدي الكمامة الطبية				
13	I clean and disinfect surfaces and equipment routinely أقوم بتنظيف وتطهير الأسطح والمعدات بشكل روتيني				
14	I follow the proper procedures for donning and doffing personal protective equipment. أتبع الإجراءات الصحيحة لارتداء وخلع معدات الحماية الشخصية				
15	I wear a mask أقوم بارتداء الكمامة				
16	I wear a face shield when there is a risk of blood or bodily fluid splatters from the patient اقوم بارتداء قناع الوجه عندما يكون هناك خطر حدوث تناثر رذاذ من الدم أو سوائل جسم المريض				
17	I wear a gown when there is a risk of blood or bodily fluid splatters from the patient اقوم بارتداء العباءة عندما يكون هناك خطر حدوث تناثر رذاذ من الدم أو سوائل جسم المريض				

Part III: These questions are intended to evaluate your knowledge of standard prevention measures, please place a checkmark (√) next to your chosen answer.

الجزء الثالث: تهدف هذه الأسئلة إلى تقييم معرفتك بإجراءات الوقاية القياسية ،يرجى وضع علامة (√) بجوار الإجابة التي اخترتها.

#	الأسئلة	صح	خطأ	لا اعرف
1	Standard precautions are a set of preventive measures that involve using gloves, masks, sterilizing medical equipment, and cleaning surfaces to limit the spread of diseases and prevent their transmission. الإجراءات الوقائية القياسية هي عبارة عن مجموعة من الإجراءات الوقائية تتمثل في استخدام القفازات والكمامات وتعقيم الأدوات الطبية وتطهير الأسطح، للحد من انتقال الأمراض و منع انتشارها			
2	Hands should be washed (with soap and water or alcohol-based sanitizer) before touching the patient. يجب غسل اليدين (بالماء والصابون أو المطهر الكحولي) قبل ملامسة المريض			
3	Hands should be washed (with soap and water or alcohol-based sanitizer) after touching the patient. يجب غسل اليدين (بالماء والصابون أو المطهر الكحولي) بعد ملامسة المريض			
4	Hands should be washed (with soap and water or alcohol-based sanitizer) after touching the patient's surroundings. يجب غسل اليدين (بالماء والصابون أو المطهر الكحولي) بعد ملامسة محيط المريض			
5	Hands should be washed (with soap and water or alcohol-based sanitizer) before cleaning and sterilizing areas where patients are located. يجب غسل اليدين (بالماء والصابون أو المطهر الكحولي) قبل تنظيف وتطهير الأماكن التي يتواجد بها المرضى			
6	Hands should be washed (with soap and water or alcohol-based hand rub) after coming into contact with bodily fluids such as blood, urine, saliva, and others that a patient may secrete. يجب غسل اليدين (بالماء والصابون أو المطهر الكحولي) بعد ملامسة السوائل التي يفرزها جسم المريض مثل الدم ، البول واللعاب وغيرها			
7	Using gloves when handling patient body fluids such as urine, vomit, saliva, blood, and others is necessary. يجب استخدام القفازات عند التعامل مع سوائل جسم المريض مثل البول ،القيء ،اللعاب ، الدم وغيرها			
8	Gloves should be used when cleaning medical equipment and tools. يجب استخدام القفازات عند تطهير المعدات والادوات الطبية			

Part III: These questions are intended to evaluate your knowledge of standard prevention measures, please place a checkmark (√) next to your chosen answer.

الجزء الثالث: تهدف هذه الأسئلة إلى تقييم معرفتك بإجراءات الوقاية القياسية ،يرجى وضع علامة (√) بجوار الإجابة التي اخترتها.

#	الأسئلة	صح	خطأ	لا اعرف
9	Gloves should be worn for every procedure involving patient contact. يجب ارتداء القفازات لكل إجراء يتم فيه التعامل مع المرضى			
10	Medical gloves should be changed after touching the patient. يجب تبديل القفازات الطبية بعد ملامسة المريض			
11	Standard precautions recommend using gloves only when there is a risk of injury. توصي الإجراءات الوقائية القياسية باستخدام القفازات فقط عندما يكون هناك خطر حدوث جرح			
12	When there is a risk of splashes or spray of blood and body fluids, the healthcare workers must wear mask عندما يكون هناك خطر حدوث تناثر رذاذ من الدم أو سوائل الجسم، يجب على العاملين في مجال الرعاية الصحية ارتداء الكمامة			
13	When there is a risk of splashes or spray of blood and body fluids, the healthcare workers must wear eye protection عندما يكون هناك خطر حدوث تناثر رذاذ من الدم او سوائل الجسم، يجب على العاملين في مجال الرعاية الصحية ارتداء واقي للعين			
14	When there is a risk of splashes or spray of blood and body fluids, the healthcare workers must wear face shields عندما يكون هناك خطر حدوث تناثر رذاذ من الدم او سوائل الجسم، يجب على العاملين في مجال الرعاية الصحية ارتداء قناع الوجه			
15	When there is a risk of splashes or spray of blood and body fluids, the healthcare workers must wear gown عندما يكون هناك خطر حدوث تناثر رذاذ من الدم أو سوائل الجسم، يجب على العاملين في مجال الرعاية الصحية ارتداء العباءة			
16	Invasive procedures increase the risk of nosocomial infection تزيد الإجراءات التي يحدث فيها اختراق لجسم المريض من خطر الإصابة بعدوى المستشفيات			
17	Standard precautions include guiding principles to protect patients and healthcare workers from exposure to infections. تشتمل الإجراءات الوقائية القياسية على مبادئ توجيهية لحماية المرضى وطاقم الرعاية الصحية من التعرض للعدوى			

Part III: These questions are intended to evaluate your knowledge of standard prevention measures, please place a checkmark (√) next to your chosen answer.

الجزء الثالث: تهدف هذه الأسئلة إلى تقييم معرفتك بإجراءات الوقاية القياسية ،يرجى وضع علامة (√) بجوار الإجابة التي اخترتها.

#	الأسئلة	صح	خطأ	لا اعرف
18	Standard precautions are only applied to patients who have a confirmed diagnosis of infection. يتم تطبيق الإجراءات الوقائية القياسية فقط على المرضى الذين لديهم تشخيص مؤكد للعدوى			
19	Hands that are visibly dirty should be washed with liquid soap and water before alcohol gel is used. يجب غسل اليدين بالماء والصابون قبل غسل اليدين باستخدام الكحول اذا كان الأوساخ ظاهرة			
20	Standard precautions recommend washing hands with soap and water for 10-15 seconds. توصي الإجراءات الوقائية القياسية بغسل اليدين بالماء و الصابون لمدة تتراوح من 10-15 ثانية			
21	Hands should be washed with soap and water immediately after removing medical gloves. بعد نزع القفازات الطبية مباشرةً يجب غسل اليدين بالماء والصابون			

Part IV: The following questions to help us understand the factors that impact nurses' commitment to following standard prevention measures in the emergency department. Please indicate your opinion by placing a checkmark (√) in the box next to each question.

الجزء الرابع : الأسئلة التالية لمساعدتنا في فهم العوامل التي تؤثر على التزام الممرضات باتباع إجراءات الوقاية القياسية في قسم الطوارئ. يرجى وضع علامة صح (√) في المربع المجاور لكل سؤال حسب رأيك.

#	الأسئلة	لا أوافق بشدة	لا أوافق	محايد	أوافق	أوافق بشدة
1	Wearing gloves can make it more difficult to feel veins when drawing venous blood or inserting an IV cannula. ارتداء القفازات يؤدي إلى زيادة صعوبة جس الأوردة عند سحب الدم الوريدي أو إدخال الأنبوبة الوريدية.					
2	I do not follow the standard precautionary measures due to work pressure. لا اطبق الإجراءات الوقائية القياسية بسبب ضغط العمل .					
3	It is a common practice in my workplace not to follow the standard precautionary measures. في مكان عملي ، من الممارسات المعتادة عدم تطبيق الإجراءات الوقائية القياسية					
4	My institution does not have policies that require employees to comply with standard precautionary measures. لا تمتلك مؤسستي سياسات تجبر الموظفين على الالتزام بالإجراءات الوقائية القياسية					
5	Applying standard precautionary measures takes a long time. تطبيق الإجراءات الوقائية القياسية يستغرق وقتا طويلا .					
6	I do not wear PPE due to unavailability. لا ارتدي وسائل الحماية الشخصية (PPE) بسبب عدم توفرها .					
7	There is a shortage of nursing staff, so I do not comply with standard precautionary measures. هناك نقص في كادر التمريض لذلك لا التزم بالإجراءات الوقائية القياسية					
8	The negative impact of personal protective equipment (PPE), such as heat stress, fatigue, discomfort, and restricted movement. التأثير سلبي لمعدات الحماية الشخصية مثل الإجهاد الحراري ،التعب ،الشعور بعدم الراحة وتقييد الحركة					
9	I do not wear PPE due to its impact on my appearance. لا ارتدي وسائل الحماية الشخصية لتأثيرها على مظهري الخارجي.					
10	Compliance with standard precautionary measures sometimes conflicts with the priority of preserving the patient's life. الالتزام بالإجراءات الوقائية القياسية احياناً يتعارض مع اولوية الحفاظ على حياة المريض.					

Part V:The following questions are designed, to assess the prevalence of occupational hazards in the emergency department, please put a tick mark (√) next to your chosen answer. الجزء الخامس: الأسئلة التالية لتقييم مدى انتشار المخاطر المهنية في قسم الطوارئ، يُرجى وضع علامة (√) بجانب الإجابة التي تختارها.	
الأسئلة	#
What types of infections have you been exposed to while working with patients in the emergency department?" (☐ Bacterial / ☐ Viral / ☐ Fungal / ☐ None /) ما أنواع/أنواع العدوى التي تعرضت لها اثناء عملك مع المرضى قسم الطوارئ (☐ لا يوجد ☐ / فطري☐ / بكتيري / ☐ فيروسي)	1
During the last year,how many times have you had needlestick injuries while working in the emergency department and the needle was contaminated with the patient's blood or other body fluids? ☐ None / ☐ 1-5 times / ☐ 6-10 times / ☐ More than 10 times / ☐ I don't know) خلال العام الماضي ، كم مرة تعرضت لإصابات الوخز بالإبر أثناء العمل في قسم الطوارئ وكانت الإبرة ملوثة بدم المريض أو سوائل الجسم الأخرى؟ (☐ أكثر من 10 مرات / ☐مرات 6-10 / ☐ مرات 1-5 / ☐ لا شيء)	2
During the last year, please select the type(s) of body fluid(s) that you were exposed to from the following options. خلال العام الماضي ، يرجى تحديد نوع (أنواع) سوائل الجسم التي تعرضت لها من الخيارات التالية. ☐ Blood الدم ☐ Urine البول ☐ Feces الفضلات ☐ Vomit القيء Saliva or other secretions اللعاب او الإفرازات الأخرى ☐ nothing لا شيء	3
please select the communicable disease(s) that you were exposed to from the following options. If not, select 'nothing': ':، يرجى تحديد الأمراض المعدية التي تعرضت لها من الخيارات التالية. إذا لم يكن الأمر كذلك، يرجى تحديد "لا شيء ☐ فيروس التهاب الكبد بي Hepatitis B ☐ فيروس التهاب الكبد جي Hepatitis C ☐ السل Tuberculosis ☐ فيروس العوز المناعي البشري/متلازمة نقص المناعة المكتسبة HIV/AIDS ☐ فيروس كورونا المستجد COVID-19 ☐ nothing لا شيء	4

ملخص الدراسة

خلفية الدراسة

يعتبر قسم الطوارئ من أهم أقسام مرافق الرعاية الصحية، لكن طبيعة الرعاية الطارئة وضيق الوقت ونقص الموظفين وارتفاع نسبة المرضى إلى الممرضين يزيد من تعرض العاملين في هذا القسم للمخاطر المهنية .

في السنوات الأخيرة، أصبح خطر الإصابة بالعدوى بين العاملين في مجال الرعاية الصحية مصدر قلق على مستوى العالم، يتعرض الممرضون بشكل خاص لمجموعة متنوعة من العوامل المعدية بسبب طبيعة عملهم والتفاعل المباشر مع المرضى والاتصال المتكرر بالسوائل والأسطح الملوثة. وعلى الرغم من وجود تدابير مكافحة العدوى والاحتياطات القياسية للحد من المخاطر المهنية، فإن الالتزام بهذه البروتوكولات من قبل العاملين في مجال الرعاية الصحية، بما في ذلك الممرضين/ات، ما يزال يشكل تحديًا حقيقيًا.

الهدف: تهدف الدراسة الى تقييم معرفة وامتثال الممرضين/ات بتطبيق الاحتياطات القياسية ,تقييم العوامل التي قد تؤثر على الامتثال كما تهدف ايضأ الى تقييم مدى انتشار المخاطر المهنية البيولوجية والاسباب التي قد ساهمت في ذلك في اقسام الطوارئ بالمستشفيات الحكومية والخاصة شمال الضفة الغربية

الطرق: دراسة وصفية مقطعية. شارك في الدراسة مائة وثلاثة وثلاثون ممرضاً من أقسام الطوارئ في المستشفيات الحكومية والخاصة في شمال الضفة الغربية.

النتائج: أظهرت الدراسة نتائج هامة تتعلق بالتزام التمريض بالاحتياطات المعيارية في مستشفيات شمال الضفة الغربية. كان متوسط مجموع نقاط التزام التمريض بهذه الاحتياطات 68%. وبالنسبة لمتوسط مجموع نقاط المعرفة بالاحتياطات المعيارية، فقد بلغ 79%. وأظهرت الدراسة وجود ارتباط يعتد به إحصائيًا بين الالتزام بممارسة الاحتياطات القياسية والجنس. بالإضافة إلى ذلك، لم يظهر أي فروق ذات دلالة إحصائية بين مستوى الالتزام بالاحتياطات القياسية وبين المستشفيات الحكومية والخاصة ، المعرفة.

من جهة أخرى، أظهرت الدراسة انتشارًا عاليًا للمخاطر المهنية بين المشاركين، حيث أصيب حوالي 50.4% منهم بفيروس كورونا المستجد أثناء العمل في قسم الطوارئ. وبالإضافة إلى ذلك، تعرض حوالي 81% من المشاركين لسوائل الجسم المختلفة، و96% منهم تعرضوا للوخز بالإبر الملطخة بالدم أو بسوائل الجسم الأخرى أثناء العمل مع المرضى خلال الاثنا عشر شهرًا السابقة للدراسة.

وبناءً على دراسة العوامل والتحديات التي تؤثر على التزام الممرضين بالاحتياطات المعيارية، تبين أن العوائق الرئيسية تشمل صعوبة الشعور بالأوردة أثناء ارتداء القفازات الطبية والتأثير السلبي لمعدات الحماية الشخصية مثل الإجهاد الحراري، بالإضافة إلى النقص في الكادر التمريضي وضيق الوقت والتعارض مع الأولوية في الحفاظ على حياة المرضى.

ومن الجدير بالذكر أن الغالبية العظمى من المشاركين (87.2%) تعرضوا للمخاطر المهنية بسبب ضغط العمل، و(82.7%) بسبب النقص في الكادر التمريضي.

الاستنتاجات والتوصيات

في شمال الضفة الغربية، كان التزام الممرضين بالاحتياطات المعيارية في أقسام الطوارئ دون المستوى الأمثل. وثمة فجوة بين المعرفة النظرية للممرضين بالإجراءات الوقائية المعيارية وتطبيقهم العملي للإجراءات أثناء التعامل مع المرضى

بالإضافة إلى ذلك، تشهد أقسام الطوارئ في شمال الضفة الغربية معدل انتشار مرتفع لمخاطر العدوى المهنية بين الممرضين.

عبء العمل المرتفع الواقع على الكادر التمريضي وارتفاع نسبة المرضى إلى الممرضات لعبت دوراً أساسياً في تعرض الممرضين في أقسام الطوارئ إلى مخاطر العدوى المهنية.

تعزيز التعليم المستمر حول الاحتياطات المعيارية من خلال تنظيم دورات تدريبية مستمرة للممرضين تركز على الجوانب العملية للالتزام بالإجراءات الوقائية المعيارية.

تنظيم حملات توعوية وتوزيع مواد تثقيفية للممرضين تستهدف تعزز ثقافة السلامة وأهمية الالتزام بالإجراءات الوقائية.

تعزيز الإشراف والمراقبة على تطبيق الاحتياطات المعيارية والسلامة في أقسام الطوارئ.

زيادة الكادر التمريضي العامل في أقسام الطوارئ، ذلك سيقلل من العبء الذي يتحمله الممرضون ويساهم في تحسين جودة الرعاية والسلامة المهنية.

يجب إجراء المزيد من الدراسات الرصدية لتقييم تنفيذ التدابير الاحترازية القياسية. وسيوفر هذا تقييماً أكثر موضوعية للتنفيذ الفعلي للاحتياطات القياسية.

الكلمات المفتاحية: المخاطر المهنية، المعرفة، الاحتياطات القياسية، التزام التمريض، العوامل، قسم الطوارئ، إصابة بوخز الإبر