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Knowledge, Attitude, Practice, and Perceptions among nurses in governmental hospitals towards standard isolation precautions in the West Bank, Palestine

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Dedication

My beloved mother.

The ink stopped when I started to start with organized words so that I could commiserate with you.

You were like water and air to me.

My dear husband.

You knew the meaning of family life in its highest form, and you were the best example of sublime human values.

She did not hesitate, even for a single moment, to spend time on my education.

Friends and loved ones

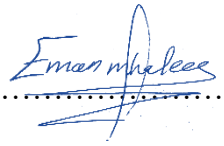
I dedicate my research to you

Finally, I also dedicate this work to my breather who has supported me throughout the process. I will always appreciate what he has done during the process of preparing this research.

Declaration

I Certify that this thesis submitted for the degree of Master in Infectious Diseases Prevention and Control is the result of my own research, except where otherwise acknowledged, and that this thesis (or any part of the same) has not been submitted for higher degree to any other university or institution.

Eman Mhalees

Signature: 

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Abstract

Background: The transmission of hospital-acquired infections, which might manifest as blood, secretions, bodily waste, bodily fluids, or mucous membranes that may contain infectious organisms, should be prevented by taking standard isolation precautions. The moral duty to care for sick people helps them regain their health and provides them with high-quality treatment care falls on medical personnel and in particular nurses. As a result, healthcare professionals should be properly informed and follow best practices when it comes to rigorously adhering to conventional isolation precautions for infection prevention.

Aim: This study aims to assess the level of knowledge, attitude, practice, and perception of nurses toward standard isolation precaution in the West Bank.

Methodology: A descriptive cross- sectional design with a sample consisted of 804 nurses was conducted at three governmental hospitals in the West Bank (Palestinian medical complex, Al-watani hospital, and Hebron hospital). All nurses in these hospitals were targeted. Data was collected by using self-administered questionnaire that consisted of 29 items to construct six sections covering social demographics, work characteristics, determinants and health care worker activities, knowledge, attitudes, practices, and perception of nurses toward standard isolation precautions, and hospital measures toward standard isolation precautions.

Findings: In this study, online self-administered questionnaires (804) were distributed, (352) participants completed the questionnaires, and most of the participants were males (58.5%) while (41.5%) were females. The majority of nurses aged between 30 to 45 age group (n= 211. Results of the study revealed that answers from the participants predicted that most of the nurses have good knowledge and satisfactory attitude, practice, and perception toward standard isolation precautions.

Furthermore, nurses ‘perception, Knowledge, attitude, practice, and Hospital measures toward their institutional measures was good with regard to infection prevention and control (a mean of 3.77 with a SD of 0.30), (mean 3.59 with SD 0.41), (mean 3.6 with SD 0.42), (mean 3.15 with SD 0.39), and (mean 3.65 with SD 0.35) respectively. And the response rate was 48%.

Conclusion: Using standard isolation precaution is very important for nurses to control hospital acquired infection. Study findings also showed that most of the nurses contributing

to the study have good knowledge level about standard isolation precautions, and satisfactory attitudes toward standard isolation precautions. Study findings also predicted that most of the nurses have satisfactory practice and perception, and they do use standard isolation precautions to control infection.

Keywords: Knowledge, Attitude, Practice, Perception, Standard Isolation Precautions, Palestinian nurses.

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List of Abbreviations

WHO	World Health Organization
IPC	Infection prevention and control
PPE	Personal Protective Equipment
SARS	Severe acute respiratory syndrome
HBV	hepatitis B virus
SPs	Standard Precautions
HCWs	Healthcare Workers
HIV	Human immunodeficiency virus
HCAIs	healthcare-associated infections
CDC	Centers for Disease Control and Prevention
LMICs	low- and middle-income countries
IRB	institutional review board
MDROs	Multidrug-resistant organisms
EIC	environmental infection control
KAP	knowledge, attitude, and practice
HCPs	healthcare professionals
MOH	Ministry of Health
HAIs	Hospital Acquired Infections

Chapter One:

Introduction and theoretical background

1.1 Introduction

Nurses are health-care providers who have an important role in guarding patients and enhancing their recovery to improve health outcomes (Thapa & Subedi, 2022). The nursing profession is committed to providing care for individuals and promoting global health (Zhang, Tai, Pforsich, & Lin, 2018).

The World Health Organization (WHO) states that nurses account for half of all medical professionals in several nations and play a critical role in planning, implementing, and managing health initiatives at the front-line and administrative levels. They provide primary healthcare, including promotion, prevention, treatment, and rehabilitation, in addition, nurses are on the front lines of illness prevention (National Academies of Sciences).

Infections linked to healthcare have become a global medical concern in healthcare settings (Chiarello et al., 1999), as a primary level of infection control, nurses should be well-informed and follow a standard isolation precautions when delivering patient care (Suliman, Aloush, Aljezawi, & Al Bashtawy, 2018).

Regular Infection prevention and control (IPC) measures known as "standard precautions" ought to be used with all patients in all healthcare environments, the use of standard precautions such as hand hygiene, use of Personal Protective Equipment (PPE), respiratory

hygiene, environmental controls (cleaning and disinfection), waste management, packing and transporting of patient-care equipment, linen and laundry, and waste from isolation areas, prevention of needle-stick or sharps injuries helps to prevent the spread of infectious diseases in hospitals by preventing the contact of blood, body fluids, excretions, and tissues with potentially infectious organisms (Garner, 1996).

The Severe acute respiratory syndrome (SARS) pandemic highlighted how crucial it is for healthcare institutions to follow basic IPC safeguards. Standard Precautions noncompliance was frequently linked to the spread of SARS within healthcare settings. Standard precautions should be promoted as a top priority in all healthcare institutions due to the growing risk of respiratory infectious illnesses (Garner, 1996).

Infections can be spread from hospital staff to the patients and other workers, the use of standard isolation precaution is a strategy to prevent the spread of infectious pathogens and protect patients, caregivers, and medical staff from infectious agents (Barikani & Afaghi, 2012).

Because nurses are responsible for providing treatment to patients who are exposed to infectious pathogens, standard isolation measures are regarded to be more important for them than for other healthcare team members (Efstathiou, Papastavrou, Raftopoulos, & Merkouris, 2011).

In short-term and long-term care settings, nurses' roles have to maintain patient safety and prevent injury during the providing of care (Lin et al., 2019). Nurses are required to follow organizational strategies including assessing patients, planning treatment, monitoring and surveillance activities, double-checking, providing help, and interacting with other healthcare professionals (Vaismoradi, Jordan, & Kangasniemi, 2015). Clear policies, strong leadership, research-driven safety efforts, staff training, nurses’ adherence to the principles of patient safety and patient involvement are necessary for the implementation of initiatives meant to stop practice mistakes and to create safety, more sustainable healthcare systems (Rashvand et al., 2017).

Infection with the hepatitis B virus (HBV) is one of the world's most serious public health issues. Recent estimates indicate that around one-third of the global population is infected with HBV (Abdela, Woldu, Haile, Mathewos, & Deressa, 2016).

In underdeveloped nations, where HBV is widely widespread in the general population and the health conditions are subpar, healthcare workers are at significant risk of contracting the virus at work (Anagaw et al., 2012).

By following the general measures, such as wearing protective barriers like gloves, sterilizing medical equipment, maintaining an appropriate hospital waste management system, and receiving vaccinations, it is possible to avoid contracting the hepatitis B virus (Rachiotis, Goritsas, Alikakou, Ferti, & Roumeliotou, 2005), Additionally, post-exposure prophylaxis can be used to prevent HBV following unintentional contact with tainted bodily fluids or blood (Rachiotis et al., 2005).

Standard isolation precautions should be followed to prevent the transmission of hospital-acquired infections. These infections might manifest as blood, secretions, bodily waste, fluids, and mucous membranes. The people with the moral duty to tend to the ill, enhance their recovery, and provide them with exceptional treatment care are nurses (Faryad, Inayat, Afzal, & Hussain, 2018).

Regardless of whether a patient has a confirmed or suspected illness, Standard Precautions (SPs) are the basic infection prevention and control (IPC) procedures that apply to all patient care activities at all times and in every setting where healthcare services are rendered. In addition to shielding healthcare workers (HCWs) against illness, these evidence-based procedures stop infectious agents from spreading among clients, visitors, and the surrounding area (Senbato et al., 2024).

A study conducted by Faryad and colleagues reported that the majority of the nurses had a strong understanding of typical isolation precautions, but their attitudes toward these measures were unsatisfactory. The results of the study also indicated that the majority of nurses have inadequate procedures and do not follow the recommended isolation precautions to prevent infection (). This study aims to evaluate nurses' knowledge, attitudes, practices, and perceptions of nurses toward standard isolation precaution in Westbank.

1.2 Background

In a variety of healthcare settings, HCWs are crucial in helping patients with prevention, diagnosis, treatment, and care. The WHO defines HCWs as those engaged in activities to promote health including physicians, nurses, laboratory technicians, and pharmacists, in addition to those engaged in activities to provide supporting services, such as officers, drivers, cleaners, and cooks (Kisting, Wilburn, Protsiv, & Hsu, 2010; Organization, 2015).

In healthcare settings, health professionals are exposed to a variety of occupational hazards including biological, chemical, ergonomic, physical, and stress/violence, (Aluko et al., 2016; Wilburn & Eijkemans, 2004).

Blood-borne infections, including hepatitis B, hepatitis C, and Human immunodeficiency virus (HIV), represent a significant danger to HCWs, especially HCWs who treat patients and into contact with blood and other fluids through sharps or needle stick injuries (Aluko et al., 2016; Hosoglu et al., 2011).

Hospital-acquired infections, also known as healthcare-associated infections (HAIs) usually acquired after hospitalization that manifest in patients 48 hours after being admitted to the medical facility. But it's sometimes forgotten that caregivers, particularly medical professionals (HCPs), are equally vulnerable (Angela Revelas, 2012). Occupational infections are the general term for HAIs that affect healthcare professionals. Hepatitis B, hepatitis C, TB, HIV, and other occupational illnesses can be fatal (Karaaslan & Kepenekli Kadayifci, 2014; Zingg et al., 2015).

Hospital-acquired infections have an impact on the length of extra hospital stays extra costs for medical care, morbidity, lost wages, reduced productivity, and a rise in antibiotic usage, which raises the risk of antibiotic resistance and increases death (Karaaslan & Kepenekli Kadayifci, 2014; Stewart et al., 2021).

The prevalence of HAIs is increasing despite improvements in medical treatment and technology (Moralejo, El Dib, Prata, Barretti, & Corrêa, 2018). The World Health Organization (WHO) reports that, the prevalence of HAIs varies from 5.7% to 19.1% in hospital settings worldwide According to recent research, the prevalence of HAIs is 3.2% in the USA (Suetens et al., 2018) and 6.5% in Europe (Magill et al., 2018).

When comparing low-income nations to high-income ones, the burden of HAIs is notably larger in the former (Habibi et al., 2008). HAIs increase hospital stays for longer time,

increased mortality, increased health care costs, and put a financial burden on families and communities as a whole (Anderssonet al., 2010). Therefore, it would seem that preventing and controlling HAIs is a crucial public health issue (Byarugaba, 2004).

Most hospital acquired infections have been caused by contaminated hands of HCWs and healthcare equipment (Lahsaeizadeh, Jafari, & Askarian, 2008). When healthcare workers neglect to wash their hands correctly after treating a patient and interacting with another patient, the pathogens that cause HAIs are frequently spread from one patient to another (Wu et al., 2021).

According to the WHO, the main factors causing HAIs include insufficient environmental hygiene and waste disposal practices, inadequate infrastructure, a lack of people and equipment, overcrowding, a lack of national standards, and a lack of understanding about basic infection control measures (Abalkhail & Alslamah, 2022)

The standard precautions, created by the Centers for Disease Control and Prevention (CDC), design specific steps that must be considered to stop the spread of pathogens and subsequently stop HAIs (Siegel, Rhinehart, Jackson, & Chiarello, 2007). Standard infection control measures demand that all patients in all settings are likely to be adherence to a consistent regimen at all times (Moralejo et al., 2018). This recommendation is based on the idea that all patients, even asymptomatic individuals, especially those who may be at risk for transmitting infectious pathogens (Siegel et al., 2007).

Numerous researches come to the conclusion that following the basic universal precautions is essential to reduce healthcare-associated infections among patients and healthcare staff (Chan et al., 2002; García-Zapata et al., 2010). Hand hygiene, wearing a gown, washing and disinfecting equipment, using facial protection (masks and goggles), throwing away sharp items, handling medical waste, and coughing etiquette are among the basic precautions (Moralejo et al., 2018).

A study conducted by Hein and colleagues in Burkina Faso, reported that HCWs had 30% compliance rate with hand hygiene standards. The level of compliance with hygiene protocols was low (36.85%) (Hien et al., 2013). It was revealed that ineffective and inconsistent use of PPE is linked to around 42% of Corona Virus Disease-2019 cases among healthcare workers (Jin et al., 2020).

Additionally, this assessment indicated insufficient adherence and ignorance of SPs through the use of personal protective equipment (De Carli, Abiteboul, & Puro, 2014). It has become more important to use teaching methods to healthcare professionals to use SPs-which are described as "a group of infection prevention practices that apply to all patients, regardless of infection status" in healthcare settings in order to lower the occupational hazards among HCWs. It is predicated that all bodily fluids-blood, mucous membranes, secretions, and excretions-apart from perspiration and non-intact skin-may contain infectious pathogens that might spread (De Carli et al., 2014; Hosoglu et al., 2011).

The primary obstacles to adhering to hand hygiene guidelines have been identified including heavy work load, drawn-out clinical procedures, and skin conditions (Patarakul, Tan-Khum, Kanha, Padungpean, & Jaichaiyapum, 2005).

One of the most important aspects of risk management training in healthcare settings is infection control education in particular; continuing training should emphasize the application of a number of common precautionary measures and enforce safe practices to the risk in the workplace(De Carli et al., 2014; Hosoglu et al., 2011).

The level of knowledge, attitudes, and practice of standard precautions for infection control among health care professionals is still suboptimal, and their application is not sufficiently reported, despite the fact that these precautions are nowadays widely promoted in many countries and numerous pertinent guidelines are issued (Johnson, Asuzu, & Adebiyi, 2012; Kermode et al., 2005; Luo et al., 2010; Okechukwu & Motshedisi, 2012).

Several research studies reported that inability to follow basic infection control procedures among HCWs was linked to their ignorance of the subject, unfavorable attitudes, and lack of support from both institutions and patients (Askarian, Shiraly, & McLaws, 2005; Sax et al., 2005),

1.3 Significance of the study

Nurses have frequent interaction with and caring for patients, the study's findings will be helpful for nurses to prevent hospital-acquired infections by adhering to standard isolation precautions. Additionally, it will benefit the research participants to understand the need to follow conventional isolation procedures and the implications for patients and themselves.

The findings of this study will operate as a benchmark for further research and offer the data required to enhance nurses' knowledge, attitudes, and behaviors. The Palestinian Ministry of Health and hospital managers may utilize the study's findings as guidance when making choices about patient safety in clinical practice.

The results of this study will make it possible for hospital management to increase efforts on displaying infection control procedures and policies in Palestinian healthcare facilities.

1.4 Problem statement

Low- and middle-income countries (LMICs) are known to have greater infection rates and a higher risk of HAIs than high-income countries due to disease endemicity and resource constraints.

The difficulty of diagnosing infections and the absence of accepted diagnostic criteria have an impact on the absence of HAI surveillance systems. In addition, LMICs lack surveillance mechanisms for tracking and recording occupational illnesses. Consequently, there is continued disregard for industrial safety and a significant underreporting of infectious illness prevalence (Duodu et al., 2022; Sutton, Brewster, & Tarrant, 2019).

If nurses do not follow established isolation procedures, they put themselves and their patients at high risk of contracting dangerous infections. The morbidity and mortality rate in hospitals may be lowered if nurses practiced conventional isolation precautions with the necessary knowledge, attitudes, and practices. Numerous studies have been published in this field to assess health professionals' knowledge, attitudes, and practices regarding universal precautions in different healthcare settings around the globe (Nugmanova et al., 2015; Powers et al., 2016).

The majority of studies reported a lack of understanding of infection control procedures (Arinze-Onyia et al, 2018; Hanafi et al., 2011; Nugmanova et al., 2015), and poor adherence (Hosoglu et al., 2011) using the common safety measures used by medical personnel.

According to certain research, having an infection-control policy, offering recurring safety injection and precautionary practice training sessions, and setting up a robust infection reporting system in healthcare settings have an impact on the level of knowledge and adherence to infection prevention and control practices among healthcare workers (Giard et al., 2016; Gulifeiya & Rahmah, 2008; Nagao et al., 2007; Powers et al., 2016).

Even though this topic is important, there isn't much pertinent research conducted in the West Bank of Palestine. The purpose of this study is to assess the knowledge, attitudes, practices and perception of employed nurses towards standard isolation precautions in governmental hospital, West Bank, Palestine.

1.5 Aim of the study

The main aim of our study is to assess nurse's knowledge, attitudes, practice, and perceptions and hospital prevention measures towards standard isolation precautions in governmental hospitals in the West Bank, Palestine.

1.6 Specific objectives

1. To describe hospitals' preventive measures towards standard isolation precautions in governmental hospitals in the West Bank.
2. To assess the nurses' knowledge, attitudes, practice and perception towards standard isolation precautions in governmental hospitals in the West Bank.
3. To determine the relationship between nurses' socio-demographic characteristics, work characteristics and nurses' knowledge, attitudes, practices, and perception towards standard isolation precautions in the West Bank.
4. To assess the relationship between nurses' socio-demographic characteristics, work characteristics and hospitals towards standard isolation precautions.

1.7 Research questions

1. What is the level of nurses' knowledge towards the standard isolation precautions in governmental hospitals in the West Bank?
2. What is the level of nurses' attitudes towards the standard isolation precautions in governmental hospitals in the West Bank?
3. What is the level of nurses' practice towards standard isolation precautions in governmental hospitals in the West Bank?
4. What is the level of nurses' perception towards standard isolation precautions in governmental hospitals in the West Bank?
5. What is the relationship between the socio-demographic characteristics, work characteristics and nurses' knowledge, attitudes, practices, and perception towards standard isolation precautions in governmental hospitals in the West Bank?
6. What is the relationship between hospitals' measures and nurses' knowledge, attitudes, practices and perception towards standard isolation precautions in governmental hospitals in the West Bank?
7. What is the relationship between nurses' socio-demographic characteristics, work characteristics and hospitals' measures towards standard isolation precautions in governmental hospitals in the West Bank?

Chapter Two:

Literature review

2.1 Introduction

This chapter provides an overview of earlier research on health care-acquired infections, focusing on assessing nurses' knowledge, attitudes, practice and perception towards standard isolation precautions. Owing to the little studies and research on this subject in Palestine, the researcher has reviewed the literature from other countries.

Nosocomial infections are not present or not yet incubated at the time of hospital admission are known as hospital-acquired infections (also known as healthcare-associated infections). These infections include bloodstream infections linked to central lines, urinary tract infections related to catheter use, surgical site infections, pneumonia associated with ventilator use, pneumonia acquired in hospitals, and Clostridium difficile infections. A productive cough, dysuria, palpitations, stomach discomfort, rebound soreness, changed mental status, and tenderness around the Costo-vertebral angle are all signs that point toward an infection (Angela Revelas, 2012).

Multidrug-resistant organisms (MDROs) that cause HAIs have a significant effect on costs, morbidity, and death. These infections might be caused by a variety of bacteria, including MDROs, which are highly contagious and quickly develop antibiotic resistance (Salmanov et al., 2023).

2.2 Local and regional studies

According to our knowledge, there are no published studies that specifically evaluate nurses' knowledge, attitudes, practice and perception towards standard isolation precautions in Palestinian hospitals. A study carried out by Ayed and colleagues in 2015 assessed the practices and understanding of nursing personnel about infection control measures in Palestinian hospitals. According to the study results, it was reported that 54% of the sample had a fair knowledge level (about 80%). Nonetheless, good practice (80%) was presented in the majority of nurses (91.1%). The mean knowledge scores for age, years of experience, and attended training course did not differ statistically significantly (f = 2.263, 1.607, 0.210) at P- value < 0.05 (0.08, 0.19, 0.65), respectively. They recommended to updating nurses' knowledge and practice through ongoing in-service education programs and continuing education and training programs, the significance of adhering to the most recent evidence-based infection control practices, offering newly licensed nurses regular training programs on infection control, and conducting replication of the study using an observation checklist to evaluate the standard of practice (Ayed, Fashafsheh, Eqtait, & Harazneh, 2015).

According to a census study evaluating environmental infection control (EIC) at intensive care units in Gaza Strip governorates reported that all ICU HCPs in the survey exhibited a good attitude toward EIC, with the exception of a few things where their perspective needed to be improved. The study results reported that. 64.66% of ICU HCPs expressed doubts about removing syringes from used needles before discarding them (t-value =1.291, P-value= 0.201 (Khadoura, Afifi, & Aljeesh, 2014).

Another study conducted to evaluate infection prevention and control practices at operating rooms at nonprofit organizations hospitals in the Gaza governorates reported that the majority of healthcare workers were aware of IPC methods and their importance in lowering nosocomial infections. Additionally, most HCWs expressed positive sentiments toward IPC procedures (Alhumaid & Al Mutair, 2021).

When providing care to all patients, standard precautions are the fundamental part of infection control measures that should be used as a level of precautions, standards, protocol, and recommendations. Depending on the patients' presumed infection status, these measures may increase or decrease the risk of cross-infections. Thus, it is imperative that nurses possess adequate and competent knowledge and adhere to updated standard precautions. A cross-sectional study carried out by Ayed and colleagues in 2015 to assess the nurses'

knowledge and adherence to standard precautions at the hospitals in the southern region of Palestine reported that 37.8% of participants knew conventional precautions well, and 38.2% of participants knew conventional precautions fairly. Nonetheless, a little over 24% of the nurses reported inadequate knowledge. About 53% of the participants overall had a fair level, 45.6% had an excellent level, and 1.5% had a bad level based on their compliance. The study concluded that the staff nurses knew and followed basic safeguards to a good degree. Even still, 25% of them continued to have inadequate knowledge. The study recommended for regularly updating educational programs about knowledge and compliance and offering new nurses training on standard precautions (Ayed et al., 2015).

2.3 Arab world countries studies

HAIs are linked to length of hospital stay, greater death rates, and higher health-care costs. HAI prevention and management is a major public health priority. A study conducted by Abalkhail and colleagues (2021), in Qassim, Saudi Arabia, among 213 HCWs' to assess knowledge, attitude, and practice (KAP) of conventional infection control procedures. A standardized questionnaire was used to perform cross-sectional surveys. Independent sample t-tests and multivariate logistic regression analysis were used to examine KAP predictors.

The prevalence of good (≥ 80% accurate response) knowledge, attitude, and practice were 67.6%, 61.5%, and 73.2%, respectively. The predictors of good knowledge included the age of the HCWs (> 34 years. Adjusted odds ratio was 30.5; P- value was less than 0.001, and training (13.3, P-value less than 0.001). Positivity at work was significantly predicted by having over 6 years of work experience (5.5, P-value less than 0.001). On the other hand, training (3.5, P-value less than 0.01), prior exposure to HAIs (2.5, P-value < 0.05), and having more than six years of experience (2.9, P-value less than 0.01) were the indicators of effective practice. On the other hand, knowledge was inversely correlated with being older (> 34 years) (P-value =0.34) and female (P- value= 0.22).

The study results suggested that providing HCWs with training might help them become more knowledgeable about standard infection control measures and anticipated to facilitate positive attitude and practice (Adil Abalkhail et al., 2021). Another study conducted by Al-Ahmari and colleagues (2021), among 212 primary care professionals in Abha City, of Saudi Arabia. The purpose of the study was to assess the knowledge, attitudes, and practices of employed medical staff members with relation to standard infection control procedures. The researchers created an electronic questionnaire that they utilized to gather data. It was

divided into five sections: statements about participant attitudes, knowledge questions about infection control and standard precautions, health care providers' practices regarding infection control, and perceived barriers to applying standard precautions adequately. 51.9% of participants had fewer than five years of experience in PHC, the majority of participants (68.9% and 45.3%, respectively) were physicians with a bachelor's degree. Sixty-eight percent of PHC centers have a dedicated room specifically designated for disposing of medical waste. 55.7% of participants went to infection control training sessions, while 72.6% of them read a message regarding coronavirus. Almost one-third (31.6%) of the participants had inadequate understanding of infection control, 88.2% had a favorable attitude toward infection control policies and procedures, and 49.5% had inadequate practice. The participants' knowledge and attitude did not differ significantly based on their socio-demographic characteristics, but those who received infection control training and those with less than five years of primary care experience had significantly better practices (p- values = 0.040 and 0.032, respectively).

Although most health workers reported a positive attitude, their understanding and application of conventional infection control practices are not at the highest level. As a result, it is advised that PHC settings strengthen oversight and impose stricter training on infection control policies and procedures (Al-Ahmari, Alkhaldi, & Al-Asmari, 2021).

2.4 International studies

A study conducted by Ogoina and colleagues (2011-2012), among 290 healthcare workers at two tertiary institutions in Nigeria. A standardized, self-administered questionnaire measuring the fundamental components of KAP of routine precautions was used to gather data. Professional differences in median KAP scores were determined, and percentage KAP scores were computed. 111 physicians (38.3%), 147 nurses (50.7%), and 32 laboratory scientists (11%) participated in the study.

The median practice score was 50.8%, and the overall median knowledge and attitude ratings for conventional precautions were above 90%. The majority of HCW complained about not having enough resources to follow common measures and had little awareness about injection safety. More experienced doctors and nurses, house officers, laboratory scientists, and younger staff of nurses had less awareness and adherence to conventional precautions. The findings pointed to a typically low level of HCW in Nigeria compliance with standard precautions of infection. on Nigeria, policies that support HCW training on standard

precautions and ensure the consistent supply of resources for infection control and prevention in healthcare facilities are required (Ogoina et al., 2015).

Another study conducted by Abuduxike and colleagues (2021), among 233 health workers from a hospital in Northern Cyprus aimed to determine the associated variables and assess health care personnel' standard precautions knowledge, attitude, and behavior. Additionally, an attempt was made to determine the percentage of individuals who had experienced needle stick injuries (NSIs) and the related variables.

Regarding standard precautions, 57.5% of the staff members showed an acceptable level of knowledge (> 5 right answers), 37.3% exhibited a satisfactory positive attitude (> 3 correct answers), and 30.9% demonstrated decent practice (> 3 correct answers). One of the variables was the profession; compared to nurses, doctors had lower rates of adequate knowledge and practice (OR = 0.269, 95% CI: 0.10–0.70, and OR = 0.248, 95% CI: 0.08–0.77, respectively). Support workers were 71% less likely to encounter NSIs than nurses and paramedics, with 31.6% of the 174 participants reporting having experienced one. The results showed that participants did not follow conventional precautions to the required standard, which underscored the need for a recurring, occupation-specific training program (Abuduxike, Acar Vaizoglu, Asut, & Cali, 2021).

The study's survey conducted by Thazha and colleagues (2022), revealed good IPC practices, favorable attitudes, and a high degree of knowledge. The most regularly followed IPC practice was "changing gloves between contacts with different patients," whereas the least frequently followed was "washing hands after removal of gloves ". Better knowledge was linked to several factors, including being an older nurse, having completed a graduate degree, completing a risk assessment course, owning enough PPE at work, and being aware of safety regulations. Age, education, and nursing background were all linked to more optimistic outlooks. Improved IPC procedures were related to MLT status, risk assessment training, having enough PPE, and knowledge of safety regulations.

Planning and implementing conclusions to preserve high awareness, positive attitudes, and effective IPC practices by addressing the causes linked to these variables found in this study is necessary (Thazha et al., 2022).

A study conducted by Saqlain and colleagues (2020), among healthcare professionals in Pakistan to assess their knowledge, attitudes, and practices surrounding the Coronavirus illness (COVID-19- pandemic). The results demonstrated that HCWs' understanding of

COVID-19 is good (93.2%), and they have a favorable attitude (mean 8.43 and good practice (88.7%). HCWs believed that the biggest obstacles to infection management were a lack of resources for infection control (50.7%) and inadequate awareness of transmission (40.6%). Pharmacists reported to be more likely than other HCWs to exhibit good practice (odds ratio 2.247, 95% confidence range 1.11–4.55, P- value=0.03). According to this study, HCWs in Pakistan possess high expertise; nonetheless, certain areas of knowledge and practice need an improvement (Saqlain et al., 2020).

A study conducted by Lobo and colleagues (2019), to describe the knowledge, practice, compliance, and attitude of healthcare professionals toward infection control methods (Lobo, Sams, & Fernandez, 2019). Health professionals from Mangaluru's A. J. Hospital and Research Center participated in cross-sectional research. Purposive sampling was used to choose 80 staff nurses from the medical, surgical, and orthopedic wards.

Knowledge and practice scores as well as attitude showed a linear relationship. Overall, there was no relationship found between an individual's practice scores and attitude. It is advised that hospitals use infection control procedures to stop the spread of infections. HCW attitudes and understanding will determine how well they are implemented (Lobo, Sams, & Fernandez, 2019.

A descriptive cross-sectional study conducted by (Ather, Khan, & Shabnum, 2020), among 180 health care workers in Bahria international Hospital Lahore. The study results showed a significant link between knowledge and practice. The results of the regression test indicate that the independent variable (knowledge) accounts for 60% (F=.141, P- value less than 0.001) of the variation in the dependent variable (practice).

According to study results, the majority of healthcare professionals are knowledgeable about conventional precautions, but their adherence to infection prevention and control measures is lacking, it is critical for healthcare staff to follow conventional precautions (Ather et al., 2020).

2.5 Awareness of infection prevention and control measures to reduce HCAI

HCWs are at a higher risk of contracting nosocomial infections, these infections are linked to higher rates of morbidity and death among hospitalized patients. A study conducted by Iliyasu and colleagues (2016) in a tertiary referral institution in North-Western Nigeria to investigate the knowledge and practices of infection control among healthcare workers reported that out of the 200 participants, 152 were nurses and 48 were doctors. With nurses having superior knowledge, 139/152 (91%) (P-value = 0.001), the majority of responders, 174/198 (87.9%), correctly selected hand washing as the most effective technique to avoid HCAI. The majority of respondents felt that the best ways to prevent HCAI were to avoid getting hurt by sharp objects (172/200; 86%), apply barrier precautions (180-200; 90%), and practice good hand hygiene (182/200; 92%). Of the respondents, only 88/198 (44.4%), 122/198 (61.6%), and 84/198 (42.4%) were aware of the dangers of infection from coming into contact with blood contaminated with hepatitis B, hepatitis C, HIV, respectively. The study revealed gaps in the understanding and practice of infection control among doctors and nurses; thus, it will be advantageous for all HCW to undergo formal refresher trainings on a regular basis (Iliyasu et al., 2016).

Over six months, a cross-sectional analytical investigation was carried out by Riasat and colleagues (2019) at the Pak-Emirates Military Hospital in Rawalpindi, Pakistan. Study groups included registered nurses and physicians in active practice. The research groups completed a self-administered questionnaire under observation.

The majority of participants (83.8%) accurately recognized hand washing as the best way to avoid HCAIs, with physicians knowing more about this than nurses (63.1%). The majority (97.5%) said that the best way to prevent HCAIs was to avoid getting hurt with sharp objects, utilize barrier precautions (97.5%), and practice good hand hygiene (98%). Physicians and nurses did not differ in their infection control methods (P-value=0.456). It was shown that women knew more about HCAIs than men did (54.1% ±2.50; P-value=0.001).

There are gaps in the knowledge and procedures of both groups of healthcare professionals, which emphasizes the necessity of regular refresher training and the creation of a system for keeping an eye on safe practices. Compared to doctors, nurses showed a larger knowledge gap, indicating the need for workshops, seminars, and/or comprehensive curriculum to enhance nursing education (Riasat, Malik, Yousaf, & Imam, 2019).

A study conducted by Centeleghe and colleagues (2024), aimed to ascertain how HCPs now see and comprehend typical cleaning and disinfection procedures as well as microbiological contamination, including biofilms, in healthcare settings. It was evident that differing opinions on the frequency of surface decontamination had an impact on infection control in specific healthcare settings. Even though infection control techniques for both detection and prevention were more uniform across all responders, it is still unclear if these precautions are being taken. This suggests that in the continuous fight against HCAI, more study and instruction are required (Centeleghe, Norville, Maillard, & Hughes, 2024).

A cross-sectional study conducted by (Asfaw, 2021), among 139 nurses at Aksum Saint Mary Hospital .The study results revealed that 52.5% of nurses had strong knowledge, and 48.6% had good practices for preventing HAIs. Knowledge was substantially correlated with both work experience [AOR = 2.3, 95% CI (1.54–3.91)] and formal training [AOR = 1.6, 95% CI (1.15–3.82)].

It was discovered that nurses' knowledge and practices related to HAI prevention were deficient. While having a better educational status was linked to excellent practice, experience and reading HAI prevention recommendations were positively correlated with knowledge. Additionally, completing formal training and being more experienced were positively correlated with good practice. Enhancing nursing knowledge and practice with relation to HAI prevention requires regular educational programs, in-service training, and making sure the relevant guidelines are available (Asfaw, 2021).

The two most important strategies for reducing HCAIs are good hand cleanliness and the sparing use of antibiotics. Since healthcare workers' hands are the most prevalent means of spreading healthcare-associated microorganisms from patient to patient and throughout the healthcare environment, hand cleanliness can help avoid a sizable proportion of healthcare-associated infections. Evidence currently available shows that multimodal intervention techniques result in better hand hygiene and a decrease in healthcare-associated infections (HCAI) (Haque & McKimm, 2020).

The development of strong knowledge improvement and the removal of infrastructural impediments are largely dependent on the introduction of alcohol-based hand massages and ongoing educational initiatives. In order to maximize the use of antibiotics, stop the emergence of resistance, and enhance patient outcomes, antimicrobial stewardship is also

essential. To assist avoid antibiotic resistance, all system players must implement coordinated efforts (Bankar, Ugemuge, Ambad, Hawale, & Timilsina, 2022).

2.6 Attitude towards infection prevention and control

There might be a poor level of compliance with national and international guidelines for IPC best practices related to a number of known factors for this, including employee attitudes. A study conducted by Ward (2012), aimed to investigate the views of nursing students and their mentors toward IPC, as there is a dearth of literature on the subject from the perspective of nursing students studying in clinical placements.

Nursing students found that IPC was viewed as an extra labor burden rather than a crucial component of patient safety and high-quality treatment, and they typically felt that competent professionals had a negative attitude toward it. Mentors noted that their regions and organizations had more optimistic views, albeit this was not always reflected in their remarks. Mentors were more likely than students to believe that staff attitudes may have an impact on students' practice and learning.

Practice nurses should be more conscious of how nursing students may interpret their views toward IPC and the potential repercussions for student learning and practicing. Employees must endeavor to recognize obstacles to appropriate infection control procedures and devise solutions (Ward, 2012).

(Tangeraas Hansen, Storm, Syre, Dalen, & Husebø, 2023) to possess a thorough grasp of nurses' attitudes on antibiotic stewardship, infection control procedures, and self-efficacy when providing hospital care for patients with bacterial illnesses resistant to several drugs. Both quantitative and qualitative methods were employed in a descriptive and convergent mixed-methods design.

The majority of nurses had strong self-efficacy, appropriate behavioral intentions toward antibiotic stewardship and infection control, and intermediate understanding. They did, however, express unfavorable feelings about nursing care and their level of knowledge. Regarding their professional impact and involvement in antibiotic stewardship procedures, the nurses were unsure of themselves. Possible factors included conflicted views about the role of nurses and organizational and relational difficulties.

When caring for patients who have bacterial infections that are resistant to many drugs, nurses report having moderate attitudes and high self-efficacy. According to this study,

nurses' views on infection prevention and control as well as antibiotic stewardship practices are challenged by relational and organizational aspects in their workplace. Appropriate infection prevention and control behaviors are supported by actions that enhance their emotional and cognitive capacities. The function of antibiotic stewardship has to be clarified (Tangeraas Hansen et al. 2023).

The current study's findings show that while nurses in the majority of studies exhibited a sufficient understanding of and positive attitude towards healthcare-associated infections, they still require the systematic and integrated application of the suggested interventions due to average and subpar practices (Nasiri et al. 2019).

2.7 Practices of nurses in infection prevention and control

By using common sense measures and keeping the medical facility clean, nurses are essential in stopping and containing the spread of the virus. Infections can spread among patients, healthcare providers, and outside guests in hospitals when they are present (Jefferson et al., 2020).

Healthcare-associated infections are acknowledged as a major global public health issue because they significantly affect the rates of morbidity and death in the intra- and extra-hospital setting, increasing hospital stay duration and expenses. For instance, one of the main causes of mortality is nosocomial infection. Infection management and prevention are essential to a healthy healthcare system (A. Revelas, 2012).

A study conducted by Salem, 2019 (Salem, 2019), revealed that while most of the study sample understood the basics of infection management, they did not practice using gloves or washing their hands-the two most important ways to stop the spread of infection.

Nurse managers are responsible for overseeing staff nurses' adherence to hospital regulations and for supervising them in the application of infection prevention standards and practices. The administrators ought to encourage practice feedback, one-on-one encouragement, and suitable prizes for excellent work. (Salem, 2019

Infections linked to healthcare are a serious public health concern in both industrialized and poor nations. A study conducted by Alojaimy et al. (2021), aimed to evaluate the infection prevention and control (IPC) knowledge and practices of nurses employed in a Saudi hospital, as well as to investigate any relationships between these practices and the socio-demographic traits and work/training experience of the nurses, and concluded IPC behaviors and

knowledge ratings were positively correlated with nurses' high educational attainment, regardless of the nurses' prior employment history or country. It is advised to conduct further research in order to create IPC programs that work, independent of the educational background of the nurses (Alojaimy et al. 2021).

Chapter Three:

Conceptual framework

3.1 Introduction

The research framework was used to explain nurses' knowledge, attitudes, practice, and perception towards standard isolation precautions. Identification of the nurses' attitudes that influence health workers was used to develop strategies to support health care workers with infection control practices at the hospitals.

The conceptual framework links each concept together, to explain the relationships between them to describe phenomena.

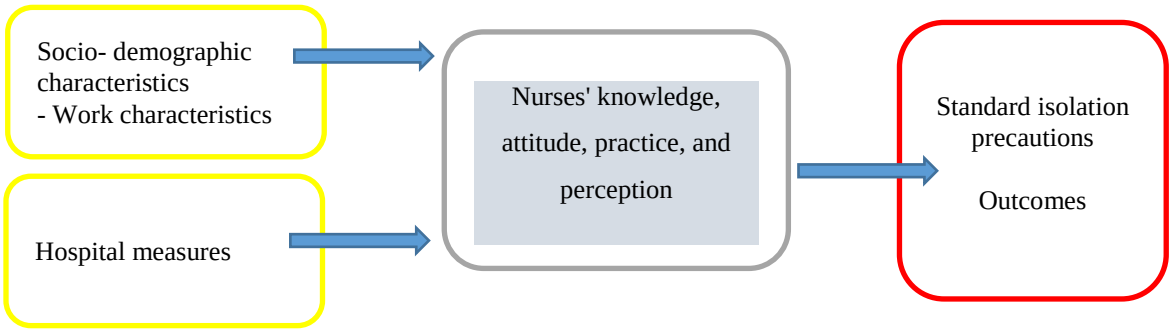

Figure 3.1: Conceptual framework

3.2 Study dependent variables

Knowledge: Understanding the concept and getting a new idea through training sessions, ability to learn, remember, and apply knowledge; it is a combination of understanding, experience, judgment, and skill (WHO, 1995).

Attitudes: Changing feelings about infection control and prevention after training sessions, propensities to view and interpret events in accordance with particular predispositions, to react in a particular manner to particular situations, or to arrange viewpoints into logical and connected structure(WHO, 1995).

Practice: Acting and acquiring a new skill through training sessions, application of information and regulations that results in action. Good practice is an art form that is carried out ethically and is connected to the advancement of knowledge and technology(WHO, 1995).

Perception: Perception is a key component of several theoretical frameworks used in nursing research, the opinions, perceptions, and knowledge nurses hold about the nursing profession as a result of their training experiences, both past and present (The professional image of nursing as perceived by nurses working in tertiary hospitals Enugu, Southeast Nigeria, 2016).

Operationally, the knowledge, attitudes, practices, and perception of nurses regarding standard isolation precautions are individually measured by a set of questions in the self-administered questionnaire in this study as it is explained in the method chapter.

3.3 Study independent variables

There are many studies which prove the role of independent variables (characteristics of both: participants and hospitals) gender, marital status, level of education, Job title, type of task, work schedule, working experience in nursing, present main work unit, working experience in the unit, economic status, have you had previous exposed to needle stick injury or sharp injury?, did you attend or participated in a training workshop about standard isolation precautions?, does your institution have an infection control committee?, when was this committee established?, and meeting holds by the infection control committee.

For this study, the independent variables included:

a- Socio-Demographic variables:

The following independent socio-demographic variables are used in this study and therefore considered important:

Age group: This refers to less than 30. 30-45, and ≥ 45 on questioners

Gender: This refers to male and female respondents on questionnaires.

Marital status: This refers to the social status of the respondent. It was categorized into two groups: Single and Married. This variable may have an effect on psychological status for staff and may affect negatively or positively on health care acquired infection.

Level of Education: This refers to the level of education obtained by respondents' staff which may give us an expectation that increase the level of education leads to decrease of health care acquired infection. It was classified into three groups: Diploma degree, bachelor's degree, High diploma, master's degree, Doctoral degree, and others if there any other degrees.

Duration of working experience (in years): This refers to the duration of working experience by years from graduation until now.

b- Work characteristics

Current department: This referred to the current department that participants work in, during study data collection. During data analysis it's classified into three groups, open department, closed departments and administration departments

Job title: This referred to the job title of the participant in the work during study data collection. It is classified into four groups: Head Nurse, Assistant, Registered, and LPN.

Shift Work: This referred to the typical shift work of participants in this study for permanent morning, permanent evening, permanent night, and rotation.

Work is classified into three groups, Direct patient care, administrative work and both.

c- Hospital preventive measures

Hospital measures: Core measures are national standers of care for common conditions. These standards are based on research, reduce patient complications and improve outcomes. Learning a hospital's core measure compliance helps patients understand how their hospital compares to its competitors. (Core Measures - Central Maine Healthcare, 2021). Operationally, the hospital preventive measures regarding standard isolation precautions are measured by a set of questions in the self-administered questionnaire in this study as it is explained in the method chapter.

Chapter Four:

Methodology

4.1 Introduction

The methodology used to evaluate nurses' knowledge, attitudes, practices, and perceptions of standard isolation precautions and hospital preventive measures on nurses' knowledge, attitudes, practices, and perceptions of standard isolation precautions is outlined in this chapter. A quantitative descriptive cross-sectional design was used to accomplish this goal.

This chapter includes: the study setting, study design, study population and sample criteria, instruments of the study, data collection process, statistical analysis, sample frame, ethical considerations, and statistical analysis.

A well-constructed 5- point Likert scale questionnaire was used as the major tool in gathering the data needed for knowledge in this study, and 5- point Likert scale for attitude, practice, and perception. The knowledge questionnaire adapted from the study conducted by Barikani &Afaghi (2012). The questionnaire of attitude and practice and perception adapted from the study conducted by Mohammad Zadeh (2013).

The data was collected through a questionnaire, and the questionnaire was distributed to participants through a convenient sampling method. The participants were instructed to complete the questionnaire to best of their ability and returned the questionnaire. The collected data were analyzed through SPSS version 24.0, and data were computed using frequency tables and charts.

4.2 Study design

A quantitative descriptive, cross-sectional design was selected for the study to achieve the aim of this study. All data was obtained from nurses in governmental hospitals from all

departments. Data was collected by using prepared self-administered questionnaire was distributed after obtaining the approval from Palestinian Ministry of Health and Al-Quds University ethical board as a google form distributed to matron and head nurses in each hospital. The questionnaire was distributed in the participants' workplace to achieve more attention and focus on filling in the questionnaire from the respondents. This survey questionnaire takes about 10–15 minutes to be filled in. The questionnaire consisted of 29 items designed by the researcher. All questions were translated into Arabic language to facilitate answering by the nurses.

The questionnaire consisted of six parts:

Part 1. Socio demographics and work characteristics such as:

Age, gender, marital status, level of education, Job title, type of task, typical shift work, work schedule, working experience in nursing, present main work unit, working experience in the unit, economic status, have you had previous exposed to needle stick injury or sharp injury?, did you attend or participated in a training workshop about standard isolation precautions?, does your institution have an infection control committee?, when was this committee established?, and meeting holds by the infection control committee.

Part 2. This section investigated the Knowledge of nurses towards standard isolation precautions in hospitals. There are 10 questions in this part. Participants were asked to answer these questions using the (X) or (√) at their convenience. The answers ranged from (strongly agree, agree, disagree, neutral, strongly disagree).

Part 3. Attitudes of nurses toward standard isolation precautions, there are 9 questions in part 4 that examined the nurse's attitudes. The answers ranged from (strongly agree, agree, disagree, neutral, strongly disagree).

Part 4. Practices of nurses toward standard isolation precautions, there are 10 questions in this part that examined nurse's practices. The answers ranged from (strongly agree, agree, natural, disagree, strongly disagree).

Part 5: perception of nurses toward isolation precautions, there are 17 questions in this part that examine nurse's perception. The answers ranged from (strongly agree, agree, disagree, neutral, strongly disagree)

Part 6: hospital measures about standard isolation precautions, there are 14 questions in this part that examine hospital measures toward isolation precautions in governmental hospitals. The answers ranged from (strongly agree, agree, natural, disagree, and strongly disagree).

4.3 Study Setting

The study is conducted at major governmental hospitals that have the largest number of nurses and working on infection control protocols in the West Bank included Governmental Hospital, (Palestine Medical Complex in Ramallah, Hebron Hospital in Hebron, and Alwatani hospital in Nablus). These hospitals are governed by Palestinian Ministry of Health which provides health services that are free or with small fees of charge for patients using Palestinian health insurance. These hospitals have infection control committees and large number of qualified nurses.

The total number of beds in the hospital is 734 beds. The total number of employed nurses in the hospitals is 804 nurses.

4.4 Study population

The study population included all 804 employed nurses (staff nurses, assistant head nurses, head nurses, and directors of nursing.

4.5 Study sample and Inclusion/exclusion Criteria

4.5.1 Study sample

A convenience sampling technique was used to recruit nurses working at all governmental hospitals in the West Bank. Governmental hospitals are Hebron Governmental Hospital, Palestine Medical Complex (Ramallah) and Alwatani hospital (Nablus). These hospitals have infection control committees.

4.5.2 Sample size

The total number of nurses within the selected hospitals is 804 nurses and midwives. According to creative research system and survey monkey, sample size calculation must be not less than 270 questionnaires for this total population (system, 2020).

The researcher managed to collect more than 270 questionnaires to increase research power calculations. The researcher started the data collection from these 3 hospitals after getting approval from Palestinian Ministry of Health, the total number of questionnaires which were distributed for all hospitals was 804 questionnaires, 352 of participants completed the questionnaires, with a response rate of 0.48%. This response rate was not achieved easily. Research questionnaire selected depends on some previous studies, like Zambia study in 2017, and other question's modified and developed with my advisor, and take validity and approval after modification from 3 academic and professional arbitrators.

The study sample included the total number of nurses in the hospitals (804).

Table 4.1: Distribution of nurses and beds in the hospitals.

Governmental Hospital	Number of beds	No of participants / Total No of Nurses
Palestine Medical Complex (Ramallah)	312	340
Hebron hospital (Hebron)	302	350
Alwatani hospital (Nablus)	64	114
Total	**767**	**804**

4.6 Data Collection and ethical consideration

An online questionnaire was used to gather the data. All information submitted was handled with the utmost discretion, and the researcher promises not to share any personal information found in this survey. It is anticipated that the questionnaire will take participants ten to fifteen minutes to complete.

In order to reach all nurses at each unit, the questionnaire was sent to the nurses via Google Form or delivered to the nursing management of each department in each hospital. A period of one to two weeks was provided. As soon as it was feasible or after all staff members had completed their questionnaires, the head nurses were asked to complete them. Participants were given an information sheet explaining the purpose of the study and the confidentiality of the data, and participation was entirely optional.

4.7 Statistical Analysis

The collected data was entered and analyzed using Statistical Package for the Social Sciences IBM SPSS version 24.

Continuous variables will be expressed as means and standard deviations as appropriate. Frequencies and percentages were calculated for all categorical variables.

The results that were produced by the Likert scale format were analyzed (Likert scale and measurement scale).

The level of statistical significance will be set to P <0.05 (95% confidence interval).

4.8 Validity and reliability of the instrument

To verify the validity of the tool of study, it will be presented to a group of reviewers who are specialized in this field. All their notes were considered. The reliability of the tool was obtained by the Cronbach alpha reliability measure. Reliability is defined as the extent to which an instrument consistently measures a concept. In addition, to check the tool's reliability, it will be applied to a sample of nurses (pilot) before beginning the study.

To verify the validity of the tool of study, it was presented to a group of reviewers who are specialized in this field. All their notes were taken into consideration. In addition, to check the reliability of the tool it was applied on a sample of nurses, which included 15 males and females other than those in the sample.

We conducted a pilot study, we distributed the questionnaire online, the first 50 completed the questionnaire, we took them and analyzed depend on and Cronbach alpha was as follows:

Table 4.2: Cronbach alpha for each part

Dimensions	Number of phrases	Cronbach alpha
Knowledge	10	0.837
Attitude	10	0.866
Practice	9	0.562
Perception	17	0.879
Institutional measures	12	0.817
All tools	58	0.926

4.9 Study Limitations

Many limitations may be encountered in the results of the study such as:

- Not all the nurses will be cooperative in completing the questionnaire.
- This study examines nurses' knowledge, attitudes, and practices, rather than directly observing their preventive performance because it's deceptive not an observational study.

There is no approved scale to measure nurses 'knowledge, attitudes, practice and perceptions of isolation precautions in Palestine.

4.10 Ethical Considerations

Ethical approval was obtained from the institutional review board (IRB) at Al-Quds University to conduct this study. The approval to collect data was attained from Palestinian Ministry of Health. Implied written consent was obtained from each participant prior to beginning the study. The participants were provided with information about the purposes of the study and were informed that the collected data was strictly confidential and would only be used for scientific purposes. Additionally, they were informed that their participation was voluntary. It took the participants about 10-15 minutes to complete the questionnaire.

Chapter Five:

Results

As mentioned in the previous chapter, a cross-sectional study was utilized. A sample of 352 nurse in Palestine Medical Complex (Ramallah), Hebron hospital (Hebron), and Alwatani hospital (Nablus) was obtained. Data was collected by the head nurse and entered, analyzed using Statistical Package for the Social Sciences IBM SPSS version 24.

The results of the study are assessed using a mean scale to interpret participants' responses and categorize them into levels of agreement or frequency. Here's the key for interpreting the scale:

Mean	scale
2.33	Low
2.34 – 3.66	Intermediate
3.67 – 5	high

This chapter presented the findings of the current study as the following:

Section one: Demographic Analysis

Section Two: Analysis of Research Questions (respondents for the dimensions of nurses).

Section Three: Analysis of Research Questions (Knowledge)

Section Four: Analysis of Research Questions (Attitude)

Section Five: Analysis of Research Questions (Practice)

Section Six: Analysis of Research Questions (Perception)

Section Seven: The KAP dimensions among nurses about toward standard isolation precautions scores grouped by demographic characteristics.

Section Eight: Hospital measures towards standard isolation precautions scores grouped by demographic characteristics.

5.1 Section One: Demographic Analysis

Table 5.1.A: Section One: Demographic Analysis

Variable	Sub variable	n	%
Gender	Male	206	58.5
	Female	146	41.5
Marital status	Madrid	275	78.1
	Un married	77	21.9
Age	Less than 30 years	96	27.3
	30-45 years	211	59.9
	≥ 45 years	45	12.8
Educational level	Diploma	22	6.3
	Bachelor's	217	61.6
	Master	101	28.7
	Baby with Diploma	12	3.4
economic status	Very good	71	20.2
	Good	235	66.8
	Poor	46	13.1
Work experience	< 5 years	55	15.6
	5 to <10 years	96	27.3
	≥ 10 years	201	57.1
Job title	Head Nurse	60	17
	Assistant	19	5.4
	Registered	239	67.9
	LPN	34	9.7
How long have you been working in your department?	< 1 years	29	8.2
	1 to 5 years	142	40.3
	≥ 5 years	181	51.4
Your typical shift work:	Permanent Morning	124	35.2
	Permanent Evening	20	5.7
	Permanent Night	10	2.8
	Rotation	198	56.3
Type of your task	Direct patient care	156	44.3
	Administrative work	32	9.1
	Both	164	46.6
Have you been exposed to needle stick injury or sharp injury?	No	161	45.7
	Yes	191	54.3
Did you attend or participate in a training workshop about standard isolation precautions?	No	183	52
	Yes	169	48
Does your institution have an infection control committee	No	2	0.6
	Yes	304	86.4
	I don’t know	46	13.1
When was this committee established	1 years	26	7.4
	3 years	42	11.9
	4 years	91	25.9

Table 5.1.B: Section One: Demographic Analysis

	I don't know	193	54.8
The infection control committee holds a meeting	Weekly	33	9.4
	Monthly	54	15.3
	Annually	53	15.1
	I don't know	212	60.2
How would you rate the effectiveness of the training prevention you received about standard isolation precautions?	Not at all effective	102	29
	Moderately effective	216	61.4
	Extremely effective	34	9.7

Gender: Among the 352 participants, 58.5% (206) identify as male, and 41.5% (146) identify as female. This gender distribution slightly favors male representation, which may influence perceptions, attitudes, and behaviors related to the study topic. Gender diversity in the sample ensures that results can be analyzed across gender lines for any potential differences in experience or outcomes.

Marital Status: The sample is predominantly married, with 78.1% (275 participants) reporting this status, while 21.9% (77 participants) are unmarried. Marital status may affect factors like stress levels, health behaviors, and access to support networks, making it an essential variable for understanding its potential influence on participant responses.

Age: Participants are divided into three age categories, with 27.3% (96) under 30, a majority of 59.9% (211) aged between 30 and 45, and 12.8% (45) aged 45 or older. This distribution suggests a workforce largely within the middle-aged range, possibly contributing mature perspectives and experience levels, yet with a notable younger cohort as well.

Educational Level: The educational background of participants varies, with the majority (61.6%, 217) holding a bachelor's degree, 28.7% (101) a master's degree, 6.3% (22) a diploma, and a small group of 3.4% (12) with a bachelor's plus a diploma. This educational diversity could influence responses, as higher education often impacts awareness and attitudes toward workplace policies and practices.

Economic Status: In terms of economic standing, 66.8% (235 participants) describe their economic status as "Good," 20.2% (71) as "Very good," and 13.1% (46) as "Poor." Economic status may impact participants' work satisfaction, stress levels, and overall outlook, providing a broader understanding of background influences on work attitudes.

Work Experience: Work experience spans from under five years (15.6%, 55 participants) to five to ten years (27.3%, 96 participants) to over ten years (57.1%, 201 participants). The

experience level distribution suggests a workforce with significant expertise, which may contribute to advanced knowledge and practices, particularly in healthcare.

Job Title: The sample has a majority of Registered Nurses (67.9%, 239), with 17% (60) as Head Nurses, 9.7% (34) as Licensed Practical Nurses (LPNs), and a smaller group (5.4%, 19) as Assistants. Job titles likely affect responsibilities and perspectives on workplace procedures and training needs.

Departmental Tenure: Participants report varied tenure within their departments, with a majority (51.4%, 181) having worked for five or more years, 40.3% (142) between one and five years, and 8.2% (29) for less than one year. Longer tenure might correlate with greater familiarity with workplace protocols and policies.

Shift Work: Shift patterns reveal that 35.2% (124) work permanent morning shifts, while the majority (56.3%, 198) are on rotational shifts, and a small percentage have permanent evenings (5.7%, 20) or night shifts (2.8%, 10). The prevalence of rotational work could affect stress and job satisfaction, which is relevant to understanding well-being and performance.

Task Type: When asked about their primary tasks, 44.3% (156) indicated direct patient care, while 9.1% (32) engaged in administrative work, and 46.6% (164) managed both. Direct patient care involves frequent exposure to potential hazards, while administrative roles might emphasize policy knowledge and enforcement.

Needlestick or Sharp Injury Exposure: Of the participants, 54.3% (191) have experienced a needlestick or sharp injury, while 45.7% (161) have not. Such exposure rates highlight occupational risks within this sample, which are crucial for understanding safety and health practices.

Training on Isolation Precautions: Slightly over half of participants (52%, 183) reported no training in standard isolation precautions, with 48% (169) having received it. Training rates could impact adherence to infection prevention protocols and overall safety awareness.

Infection Control Committee Presence: Nearly all (86.4%, 304) confirmed that their institution has an infection control committee, while 0.6% (2) reported no committee, and 13.1% (46) were unsure. This committee's presence may enhance institutional compliance and focus on infection control.

Committee Establishment Timeline: Responses varied regarding the committee's establishment, with 7.4% indicating it was set up one year ago, 11.9% three years ago, and 25.9% four years ago, while the majority (54.8%) were unsure. The establishment timeline may reflect evolving institutional priorities on infection control.

Committee Meeting Frequency: Frequency of committee meetings varied, with 9.4% reporting weekly meetings, 15.3% monthly, 15.1% annually, and 60.2% unsure. Meeting regularity might influence the effectiveness of infection control measures and policy updates.

Training Effectiveness: Participant ratings on the effectiveness of isolation precaution training revealed that 61.4% found it "Moderately effective," 29% rated it as "Not at all effective," and 9.7% found it "Extremely effective." These ratings provide insight into areas needing improvement to enhance training outcomes.

5.2 Section Two: Analysis of Research Questions (respondents for the dimensions of nurses).

Table 5.2: The mean and standard deviation of the sample respondents for the dimensions of nurses toward standard isolation precautions

Content	Number of phrases	Mean	SD	Level
Knowledge	10	3.59	0.41	Intermediate
Attitude	10	3.60	0.42	Intermediate
Practice	9	3.15	0.39	Intermediate
Perception	17	3.77	0.30	High
Hospital measures towards standard isolation precautions	9	3.65	0.35	Intermediate
All tools	59	3.58	0.36	Intermediate

From Table 5.2 here's an interpretation of the mean and standard deviation results for the dimensions related to nurses' perspectives on standard isolation precautions:

Knowledge: With a mean of 3.59 (SD = 0.41), nurses' knowledge about standard isolation precautions falls within the intermediate level. This suggests a moderate level of familiarity and understanding, indicating some knowledge gaps that may benefit from further education or clarification.

Attitude: Nurses' attitudes toward standard isolation precautions have a mean of 3.60 (SD = 0.42), also rated at an intermediate level. This moderate attitude level reflects a generally positive, yet not overwhelmingly strong, disposition towards the importance or utility of these precautions.

Practice: The mean score for practice is 3.15 (SD = 0.39), indicating an intermediate level. This suggests that while nurses engage in precautionary practices, there may be inconsistencies or areas where adherence to standard isolation precautions could improve.

Perception: With a mean of 3.77 (SD = 0.30), perception is the only dimension rated at a high level. This indicates that nurses have a strong, positive perception of the importance or value of standard isolation precautions, which could serve as a motivational factor in their adherence to these practices.

Hospital Measures towards Standard Isolation Precautions: This dimension has a mean of 3.65 (SD = 0.35), categorized as intermediate. It suggests that hospital-provided measures are moderately supportive but may lack certain elements that could strengthen compliance and effectiveness.

All Tools (Overall): The combined score across all dimensions is a mean of 3.58 (SD = 0.36), placing it within the intermediate range. This overall score reflects a moderate level of knowledge, attitude, practice, perception, and support for standard isolation precautions, indicating room for improvement to elevate all aspects to a consistently high level.

These findings suggest that while nurses generally support and perceive the importance of standard isolation precautions positively, there are moderate levels of knowledge, practice, and institutional support that could be enhanced to ensure comprehensive adherence and effectiveness.

Here the means and the standard deviations (SD) were calculated according to nurses toward standard isolation precautions as shown in Table 4.

5.3 Section Three: Analysis of Research Questions (Knowledge)

Table-5.3A.: Mean and Standard deviation of the nurse Knowledge of nurses toward standard isolation precautions.

Parameter Response: Knowledge of nurses toward standard isolation precautions			
#	**Content**	**Mean**	**SD**
1	Hand hygiene should be practiced before and after patient care.	3.50	0.77
2	Hand hygiene should be performed before and after using gloves.	2.93	0.80
3	Hand hygiene should be done after accidental contact with blood, blood-containing fluids, secretions, or contaminated items.	3.21	0.78
4	Gloves should be worn when handling mucous membranes or non-intact skin.	3.85	0.82

Table-5.3.B: Mean and Standard deviation of the nurse Knowledge of nurses toward standard isolation precautions.

5	Eye protection goggles should be worn to safeguard mucous membranes.	3.22	0.97
6	Hands should be washed with Betadine solution after contact with blood, bloody fluids, body secretions, or infectious materials.	3.42	1.18
7	A surgical mask should be worn to protect the nose and mouth during invasive procedures and activities.	3.15	0.78
8	Needle should not be bent before disposal.	3.06	0.70
9	Needle should not be recapped before disposal.	3.00	0.79
10	Gowns should be worn when there is a risk of contamination from high-risk procedures and activities.	3.91	0.75
	Total	3.59	0.41

Table 5.3 presents the mean and standard deviation of nurses' knowledge regarding standard isolation precautions. Overall, the mean score across all items is 3.59 (SD = 0.41), indicating an intermediate level of knowledge. The highest mean score (3.91, SD = 0.75) pertains to the use of gowns when there is a risk of contamination, reflecting strong awareness in this area. Similarly, knowledge about glove use when handling mucous membranes or non-intact skin also ranks high (mean = 3.85, SD = 0.82). However, knowledge of hand hygiene practices, such as performing hand hygiene before and after using gloves, is comparatively lower, with a mean of 2.93 (SD = 0.80), indicating some gaps. Additionally, understanding the need to avoid bending or recapping needles before disposal scored relatively low, with means of 3.06 (SD = 0.70) and 3.00 (SD = 0.79), respectively. These findings suggest that while nurses have a solid foundation in key precautionary measures, there are specific areas where further training could enhance their overall knowledge.

5.4 Section Four: Analysis of Research Questions (Attitude)

Table- 5.4: Mean and Standard deviation of the nurse Attitude of nurses toward standard isolation precautions

Parameter Response: Attitude of nurses toward standard isolation precautions			
#	**Content**	**Mean**	**SD**
1	It is important to wash your hands when drawing a blood sample or coming into contact with a patient's secretions.	4.87	0.84
2	Wearing a gown when attending to an infectious patient is important even if some care tasks are difficult to perform.	3.67	1.06
3	Gloves should be worn when inserting or removing a nasogastric tube.	4.25	1.05
4	Respiratory masks and goggles are necessary for intubation/extubation and suctioning of the tracheal tube as they may facilitate the healthcare professional's competence.	3.38	1.11
5	Wearing a gown is necessary when entering the ICU.	3.38	1.10
6	Accidental exposure to a contagious disease can occur by chance.	3.25	0.59
7	Hand washing before wearing gloves is a simple but important action.	3.01	0.84
8	It is necessary to assume that all patients are infectious until proven otherwise	3.09	1.04
9	Precautions are required for infectious patients in the reception and waiting rooms.	3.08	1.02
10	Maintaining a distance of 90 cm from a respiratory infectious patient is an effective in preventing transmission.	3.38	1.10
	Total	3.60	0.42

Table 5.4 presents the mean and standard deviation of nurses' knowledge and attitudes toward standard isolation precautions. The highest mean score (4.87) relates to the importance of hand washing when handling blood samples or patient secretions, highlighting strong consensus among nurses on this critical safety practice. Other highly rated practices include wearing gloves for nasogastric tube procedures (mean 4.25) and the necessity of wearing a gown when dealing with infectious patients (mean 3.67). Moderate importance is placed on using respiratory masks and goggles during high-risk procedures (mean 3.38) and maintaining a 90 cm distance from patients with respiratory infections (mean 3.38). Lower mean scores are observed for the assumption that all patients might be infectious (mean 3.09) and the necessity of precautions in waiting rooms (mean 3.08). Overall, the total mean score is 3.60, with a standard deviation of 0.42, reflecting a generally favorable attitude toward precautionary measures but indicating variability in perceived importance across different isolation practices.

5.5 Section Five: Analysis of Research Questions (Practice)

Table-5.5: Mean and Standard deviation of the nurse practice of nurses toward standard isolation precautions

Parameter Response: Practice of nurses toward standard isolation precautions			
#	**Content**	**Mean**	**SD**
1	After using needles, I do not bend or recap them before disposal.	3.55	0.63
2	I perform hand hygiene after touching the patient's surroundings.	3.50	0.64
3	I practice hand hygiene after coming into contact with the patient's blood, bloody fluids, or secretions.	3.28	0.82
4	I wear gloves when touching the patient, using instruments, handling skin, wounds, mucosal membranes, blood, and during invasive procedures.	3.27	0.80
5	I wear a gown if there is a risk of blood or body secretions coming into contact with you.	3.27	0.84
6	I use a mask if there was a risk of blood splashing onto your face during the last event.	3.26	0.71
7	I maintain a distance of 90 cm from patients suspected of having respiratory infections.	3.23	0.92
8	Decontamination workers and sweepers should wear both gloves and gowns.	3.21	0.92
9	I use a new sterile syringe and needle for each instance of aspirating from multi-dose vials.	3.14	0.81
	Total	3.15	0.39

Table 5.5 presents the mean and standard deviation for nurses' reported practices in adhering to standard isolation precautions, illustrating their practical adherence levels. Key practices include refraining from bending or recapping needles after use (mean = 3.55, SD = 0.63) and performing hand hygiene after contact with patients' surroundings (mean = 3.50, SD = 0.64). Other practices, such as hand hygiene after contact with blood or bodily fluids (mean = 3.28, SD = 0.82) and wearing gloves or gowns when handling potentially infectious materials, show moderate adherence. Overall, the total mean score for nurses' practice toward these precautions is 3.15 (SD = 0.39), suggesting a generally consistent but improvable level of compliance.

5.6 Section Six: Analysis of Research Questions (Perception)

Table-5.6: Mean and Standard deviation of the nurse perception of nurses toward standard isolation precautions

Parameter Response: Perception of nurses toward standard isolation precautions			
#	**Content**	**Mean**	**SD**
1	Adhering to the six moments of hand hygiene is crucial for infection control.	3.99	0.94
2	Handwashing with soap for 20 seconds can prevent the transmission of infections.	3.84	0.94
3	Handwashing before any contact with a patient is essential.	3.77	1.04
4	Handwashing before any clean or aseptic procedures is essential.	3.76	1.03
5	Handwashing after any contact with a patient is vital	3.77	1.09
6	Handwashing after contact with the patient's immediate surroundings is essential.	3.75	1.06
7	Handwashing after any contact with a patient's body fluids is vital.	3.74	1.04
8	Handwashing before putting on PPE is essential.	3.66	1.07
9	Handwashing after removing PPE is vital.	3.61	1.04
10	It is vital to use hand sanitizer to address invisible dirt.	3.50	1.03
11	After applying sanitizer, wait until your hands are completely dry before touching any surfaces.	3.48	1.05
12	The PPE donning protocol requires using hand sanitizer multiple times during the procedure.	3.99	0.94
13	A head cover should be worn during any procedures.	3.84	0.90
14	Wearing a surgical mask at all times is essential in wards where infectious disease cases may be admitted.	3.75	1.01
15	Wear goggles during specific procedures that could cause splashes to the eyes, such as suctioning or aerosol therapy, when dealing with suspected infectious diseases.	3.79	0.99
16	Wear boots while performing procedures in the patient’s area for suspected or confirmed cases of highly infectious droplet-borne diseases.	3.72	1.01
17	Boots and shoe covers should be worn first before putting on other PPE items.	3.89	1.01
	Total	3.77	0.30

Table 5.6 illustrates the meaning and standard deviation of nurses’ perceptions regarding the importance of adhering to standard isolation precautions, with an emphasis on hand hygiene and personal protective equipment (PPE). Nurses perceive adherence to the "six moments of hand hygiene" (mean = 3.99, SD = 0.94) and using hand sanitizer during PPE donning (mean = 3.99, SD = 0.94) as highly critical for infection control. Other essential perceptions include handwashing before and after patient contact, after contact with patient surroundings, and before and after donning PPE, all with mean scores around 3.7-3.8, suggesting a strong awareness of the importance of these actions. Additionally, wearing protective gear like masks, goggles, and boots during procedures involving potential exposure is viewed as necessary. The overall perception means of 3.77 (SD = 0.30) reflects a generally positive

attitude toward maintaining rigorous hygiene and precautionary standards in infection control practices.

5.7 Section Seven: Mean and Standard deviation of the Hospital measures towards standard isolation precautions

Table-5.7: Parameter Response: Hospital measures towards standard isolation precautions

Parameter Response: Hospital measures towards standard isolation precautions			
#	**Content**	**Mean**	**SD**
1	The medical instruments and equipment are completely sterilized in the sterilization department in the hospital	3.05	0.89
2	The Infection control committee in the hospital is responsible for conducting periodic meetings to increase the staff awareness about standard isolation precautions	3.55	0.48
3	The hospital's infection control committee follows and monitors the work of the medical staff and the results of cultures from patients.	3.45	0.42
4	The hospital director and supervisors monitor the employee's knowledge about the isolation precautions.	3.56	0.49
5	Hospital administrators and supervisors monitor all patients at risk for infection to take the necessary precautions towards standard isolation precautions.	3.59	0.42
6	The patient is usually examined to detect colonization of microorganisms regardless of whether there is enough evidence of infection or not.	3.45	0.40
7	I believe that isolation precautions, policies, rules, standards and regulations are adequate in the hospital.	3.55	0.29
8	The hospital is well prepared for the knowledge, training and equipment needed to prevent an outbreak of infection.	3.45	0.38
9	All medical staff participate every year in training courses / workshops about standard isolation precautions.	3.55	0.41
10	The necessary personal protective equipment (PPE) to deal with patients are always available in the hospital at all times.	3.45	0.35
11	Specific vaccinations are always provided to medical staff in order to prevent health care acquired infections.	3.22	0.50
12	The hospital conducts a periodic survey of all employees about standard isolation precautions.	3.50	0.54
	Total	3.48	0.35

Table 5.7 provides an overview of hospital measures to support standard isolation precautions, as rated by staff. Key actions include periodic meetings by the infection control committee to enhance staff awareness (mean = 3.55, SD = 0.48), regular monitoring by directors and supervisors of staff knowledge regarding isolation precautions (mean = 3.56, SD = 0.49), and proactive monitoring of at-risk patients (mean = 3.59, SD = 0.42). Staff generally perceive that adequate policies, standards, and PPE availability contribute to infection control, with a mean rating of 3.55 for training participation and PPE accessibility. However, measures like routine sterilization in the sterilization department (mean = 3.05, SD = 0.89) and provision of vaccinations to prevent healthcare-acquired infections (mean =

3.22, SD = 0.50) indicate room for improvement. Overall, the total mean score of 3.48 (SD = 0.35) reflects a reasonably consistent hospital effort toward maintaining infection control, though some measures may benefit from further strengthening.

5.8 Section Eight: The KAP dimensions among nurses about toward standard isolation precautions scores grouped by demographic characteristics

Table-5.8. A: The KAP dimensions among nurses about toward standard isolation precautions scores grouped by demographic characteristics

	Knowledge		Attitude		practice		Perception		KAP	
Variable	Mean ± SD	p	Mean ± SD	P	Mean ± SD	p	Mean ± SD	p	Mean ± SD	p
Gender										
Male	3.52±0.49	.9	3.66±0.5	.8	3.18±0.6	.12	3.61±0.8	.17	3.73±0.4	.62
Female	3.52±0.48		3.65±0.4		3.31±0.5		3.75±0.7		3.76±0.4	
Age in years										
Less than 30 years	3.52±0.5	.0	3.72±0.4	0.0	3.39±0.6	0.0	3.40±0.7	.0	3.80±0.4	0.0
30-45 years	3.54±0.4		3.69±0.5		3.12±0.6		3.39±0.6		3.74±0.4	
≥ 45 years	3.63±0.4		3.71±0.4		3.41±0.5		3.49±0.7		3.88±0.3	
Marital Status										
Married	3.52±0.5	.9	3.75±0.4	.11	3.36±0.5	0.1	3.77±0.7	.03	3.81±0.4	.06
Un married	3.52±0.4		3.58±0.4		3.14±0.5		3.60±0.7		3.70±0.4	
Education level										
Diploma	3.38±0.5	.01	3.76±0.5	.02	3.17±0.5	.01	3.68±0.6	.02	3.70±0.4	.01
Bachelor's	3.51±0.5		3.62±0.4		3.22±0.6		3.64±0.7		3.72±0.4	
Master	3.63±0.5		3.74±0.5		3.32±0.4		3.73±0.6		3.77±0.4	
Baby with Diploma	3.41±0.4		3.56±0.6		3.23±0.5		3.45±0.6		3.48±4	
Economic status										
Very good	3.47±0.5	.5	3.83±0.4	.09	3.44±0.5	.05	3.70±0.7	.07	3.82±0.3	.33
Good	3.54±0.6		3.64±0.5		3.23±0.6		3.64±0.8		3.75±0.4	
Poor	3.44±0.5		3.62±0.4		3.11±0.6		3.50±0.6		3.68±0.4	
Job title										
Head Nurse	3.38±0.5	.4	3.87±0.4	.06	3.24±0.5	.9	3.57±0.6	.6	3.75±0.4	.9
Assistant	3.64±0.5		4.22±0.6		3.66±0.7		3.65±0.7		3.75±0.4	
Registered	3.53±0.2		3.54±0.3		3.23±0.4		3.71±0.4		3.71±0.2	
LPN	3.54±0.5		3.53±0.4		3.27±0.4		3.90±0.7		3.72±0.3	

Table-5.8. B: The KAP dimensions among nurses about toward standard isolation precautions scores grouped by demographic characteristics

How long have you been working in your department?										
< 1 years	3.33±0.5	.04	3.45±0.5	0.0	3.32±0.6	.02	3.55±0.7	.03	3.67±0.4	.02
1 to 5 years	3.41±0.5		3.67±0.4		3.29±0.6		3.56±0.8		3.72±0.4	
≥ 5 years	3.47±0.3		3.70±0.4		3.33±0.6		3.58±0.4		3.75±0.2	
Your typical shift work:										
Permanent Morning	3.56±0.4	.09	3.67±0.5	.9	3.21±0.5	.5	3.56±0.7	.4	3.76±0.4	0.8
Permanent Evening	3.64±0.4		3.64±0.5		3.15±0.5		3.77±0.6		3.77±0.3	
Permanent Night	3.46±0.5		3.66±0.5		3.27±0.7		3.68±0.8		3.73±0.4	
Rotation	3.26±0.5		3.60±0.5		3.97±0.2		3.58±0.6		3.63±0.3	

Variable	Mean ± SD	p	Mean ± SD	P	Mean ± SD	p	Mean ± SD	p	Mean ± SD	P
Type of your task										
Direct patient care	3.58±0.49	.01	3.66±0.5	.01	3.35±0.6	.03	3.61±0.8	.01	3.73±0.4	.02
Administrative work	3.52±0.48		3.65±0.4		3.31±0.5		3.55±0.7		3.69±0.4	
Both	3.26±0.5		3.60±0.5		3.27±0.2		3.58±0.6		3.63±0.3	
Have you been exposed to needle stick injury or sharp injury?										
No	3.52±0.5	.0	3.52±0.4	0.0	3.39±0.6	0.0	3.55±0.7	.07	3.80±0.4	0.0
Yes	3.54±0.4		3.69±0.5		3.44±0.6		3.69±0.6		3.84±0.4	
Did you attend or participate in a training workshop about standard isolation precautions?										
No	3.52±0.5	.0	3.45±0.4	.01	3.36±0.5	0.0	3.37±0.7	.03	3.21±0.4	.02
Yes	3.62±0.4		3.52±0.2		3.38±0.4		3.55±0.6		3.40±0.4	
Does your institution have an infection control committee										
No	3.43±0.3	.01	3.44±0.4	.01	3.32±0.4		3.63±0.6	.01	3.57±0.3	.01
Yes	3.63±0.5		3.74±0.5		3.42±0.4		3.73±0.3		3.72±0.5	
I don't know	3.33±0.7		3.34±0.3		3.29±0.3		3.53±0.2		3.60±0.5	
When was this committee established										
1 years	3.53±0.4	.06	3.27±0.5	.2	3.21±0.5	.5	3.46±0.7	.2	3.36±0.4	0.6
3 years	3.61±0.4		3.34±0.5		3.15±0.5		3.57±0.6		3.47±0.3	
4 years	3.63±0.5		3.66±0.5		3.27±0.7		3.68±0.8		3.53±0.4	
I don't know	3.28±0.5		3.60±0.5		3.07±0.2		3.28±0.6		3.23±0.3	

Table-5.8. A: The KAP dimensions among nurses about toward standard isolation precautions scores grouped by demographic characteristics

How would you rate the effectiveness of the training prevention you received about standard isolation precautions?										
Not at all effective	3.33±0.4	.02	3.37±0.5	.02	3.21±0.5	.01	3.36±0.7	.02	3.36±0.4	0.03
Moderately effective	3.41±0.2		3.37±0.4		3.15±0.5		3.37±0.6		3.37±0.3	
Extremely effective	3.53±0.5		3.56±0.5		3.27±0.7		3.58±0.8		3.53±0.4	

Table 5.8 summarizes the mean and standard deviation (Mean ± SD) for nurses' knowledge, attitude, practice, and perception (KAP) scores regarding standard isolation precautions, categorized by variables such as gender, age, marital status, education level, economic status, job title, experience, and shift work. The p-values indicate the significance of differences within each variable.

Gender: Male and female nurses have nearly identical KAP scores, with no statistically significant differences across knowledge, attitude, practice, and perception.

Age: Nurses aged ≥45 years show higher knowledge (3.63 ± 0.4) and KAP (3.88 ± 0.3) compared to younger groups, with significant differences for knowledge, attitude, practice, and overall KAP ($p < 0.05$).

Marital Status: Married nurses score slightly higher than unmarried nurses across KAP dimensions, with perception significantly higher for married nurses ($P = 0.03$).

Education Level: Nurses with a master's degree tend to have slightly higher KAP scores, but differences are significant for KAP ($P = 0.01$).

Economic Status: Nurses with a "very good" economic status score slightly higher in practice ($P = 0.05$), but other scores show no significant differences.

Job Title: Assistants score higher in attitude (4.22 ± 0.6) and practice, though differences are only marginally significant ($P = 0.06$).

Experience in Department: Nurses with less than one year show significantly lower scores in knowledge, attitude, and practice compared to more experienced nurses, with p-values under 0.05.

Shift Work: Nurses with permanent morning or evening shifts have slightly higher KAP scores, but differences across shift types are generally not significant.

Overall, age, marital status, job title, and department experience show the most significant variation in KAP scores, suggesting these factors may influence adherence to isolation precautions.

Type of Task: Nurses involved in direct patient care scored significantly higher in knowledge (3.58 ± 0.49, P = .01), attitude, practice, and overall KAP, compared to those performing administrative work or both tasks. This suggests direct patient care staff may be more aware and compliant with isolation precautions.

Needle Stick/Sharp Injury Exposure: Those who had experienced needle stick or sharp injuries had higher scores across all variables, particularly in practice and overall KAP (P = 0.0). This may reflect heightened awareness following exposure to such injuries.

Training Workshop Participation: Nurses who attended workshops scored higher in knowledge, attitude, practice, and perception. The difference was especially significant in knowledge (P = 0.0), indicating training's positive impact on adherence to isolation precautions.

Infection Control Committee Awareness: Nurses at institutions with an infection control committee scored significantly higher across all KAP dimensions (P = .01), highlighting the role of formal infection control measures in reinforcing isolation practices.

Effectiveness of Training: Ratings of training effectiveness correlate with KAP scores. Those who found training "extremely effective" had significantly higher KAP scores, particularly in knowledge and perception (P < .05), suggesting training quality influences compliance and understanding.

Committee Establishment Knowledge: Nurses aware of an established committee scored slightly higher, but differences were not statistically significant. This suggests the presence of a committee has a more immediate effect than the duration of its establishment.

These findings highlight that direct patient care, exposure to injuries, training participation, and effective institutional infection control significantly influence nurses' adherence to and perception of isolation precautions.

Table-5.9. A: Section Nine: Hospital measures towards standard isolation precautions scores grouped by demographic characteristics.

Hospital measures towards standard isolation precautions			**Total**	
Variable	Mean ± SD	P	Mean ± SD	P
Gender				
Male	3.12±0.40	.20	3.28±0.5	.23
Female	3.22±0.38		3.30±0.4	
Age in years				
Less than 30 years	3.12±0.2	.001	3.52±0.4	0.001
30-45 years	3.14±0.3		3.55±0.5	
≥ 45 years	3.23±0.2		3.61±0.4	
Marital Status				
Married	3.12±0.5	.3	3.55±0.4	.12
Un married	3.22±0.4		3.58±0.4	
Education level				
Diploma	3.18±0.2	.01	3.76±0.5	.03
Bachelor's	3.21±0.5		3.62±0.4	
Master	3.23±0.3		3.74±0.5	
Baby with Diploma	3.11±0.3		3.56±0.6	
Economic status				
Very good	3.17±0.2	.4	3.63±0.4	.06
Good	3.14±0.6		3.64±0.5	
Poor	3.04±0.3		3.62±0.4	
Job title				
Head Nurse	3.18±0.5	.2	3.87±0.4	.3
Assistant	3.14±0.4		4.22±0.6	
Registered	3.13±0.8		3.54±0.3	
LPN	3.14±0.2		3.53±0.4	
How long have you been working in your department?				
< 1 years	3.10±0.5	.01	3.45±0.5	0.01
1 to 5 years	3.11±0.4		3.57±0.4	
≥ 5 years	3.17±0.3		3.60±0.4	
Your typical shift work				
Permanent Morning	3.36±0.3	.11	3.67±0.5	.8
Permanent Evening	3.44±0.4		3.64±0.5	
Permanent Night	3.36±0.3		3.66±0.5	
Rotation	3.36±0.5		3.60±0.5	
Type of your task				
Direct patient care	3.18±0.41	.01	3.60±0.5	.01
Administrative work	3.12±0.32		3.55±0.4	
Both	3.16±0.29		3.50±0.5	
Have you been exposed to needle stick injury or sharp injury?				
No	3.12±0.30	.02	3.55±0.4	0.03
Yes	3.24±0.28		3.61±0.5	
Did you attend or participate in a training workshop about standard isolation precautions?				
No	3.32±0.30	.01	3.55±0.4	.01
Yes	3.42±0.38		3.62±0.2	

Table A -5.9. B: Section Nine: Hospital measures towards standard isolation precautions scores grouped by demographic characteristics.

Does your institution have an infection control committee				
No	3.23±0.33	.01	3.46±0.4	.01
Yes	3.33±0.41		3.54±0.5	
I don’t know	3.03±0.50		3.34±0.3	
When was this committee established				
1 years	3.33±0.40	.56	3.47±0.32	.29
3 years	3.31±0.32		3.39±0.32	
4 years	3.33±0.30		3.60±0.40	
I don’t know	3.28±0.50		3.50±0.52	
How would you rate the effectiveness of the training prevention you received about standard isolation precautions?				
Not at all effective	3.33±0.38	.04	3.29±0.38	.02
Moderately effective	3.41±0.29		3.47±0.40	
Extremely effective	3.53±0.42		3.56±0.40	

Table 5.9 explores various demographic variables in relation to nurses' scores on standard isolation precautions in hospital settings.

Gender: Male nurses had a mean score of 3.12 ± 0.40 for hospital measures and 3.28 ± 0.5 overall, whereas female nurses scored slightly higher with means of 3.22 ± 0.38 and 3.30 ± 0.4, though neither showed significant differences ($p = 0.20$ and 0.23, respectively).

Age: Nurses aged 45 and above scored highest (3.23 ± 0.2 for hospital measures and 3.61 ± 0.4 overall) compared to younger age groups, with age showing significant influence on scores ($p = 0.001$ for both hospital measures and overall).

Marital Status: Married nurses had a mean score of 3.12 ± 0.5 for hospital measures and 3.55 ± 0.4 overall, while unmarried nurses scored slightly higher. No significant difference was found in scores based on marital status.

Education Level: Education level significantly influenced scores, with nurses holding a master’s degree achieving the highest scores (3.23 ± 0.3 and 3.74 ± 0.5) compared to those with diplomas ($p = 0.01$ for hospital measures, $p = 0.03$ overall).

Economic Status: While economic status did not yield statistically significant differences, nurses with a "very good" economic status scored slightly higher than those with a "poor" economic status.

Job Title: Among job titles, "Assistant" nurses had the highest scores (3.14 ± 0.4 for hospital measures and 4.22 ± 0.6 overall), though the differences were not statistically significant.

Experience in Department: Length of experience significantly impacted scores, with nurses who had been in their department for ≥ 5 years scoring higher ($p = 0.01$ for both hospital measures and overall).

Shift Work: Nurses working different shifts did not show significant differences in scores. Permanent morning, evening, and night shift workers had similar mean scores, with rotation workers slightly lower overall.

Task Type: Nurses engaged in direct patient care scored significantly higher ($p = 0.01$ for both measures), indicating a possible influence of direct patient care on adherence to isolation precautions.

Needle Stick/Sharp Injury Exposure: Nurses who had experienced needle-stick injuries scored higher than those who had not, with significant differences ($p = 0.02$ for hospital measures, $p = 0.03$ overall).

Training Participation: Participation in training workshops significantly influenced scores, with trained nurses scoring higher on both hospital measures and overall ($p = 0.01$ for both).

Infection Control Committee: Nurses in hospitals with an infection control committee scored higher (3.33 ± 0.41 for hospital measures, 3.54 ± 0.5 overall), with significant differences found ($p = 0.01$ for both measures).

Committee Establishment Year: Scores were similar regardless of when the infection control committee was established, showing no significant impact based on the establishment year.

Training Effectiveness: Nurses who rated their training as "extremely effective" had the highest scores (3.53 ± 0.42 for hospital measures, 3.56 ± 0.40 overall), with training effectiveness showing significant influence ($p = 0.04$ for hospital measures, $p = 0.02$ overall).

Overall, age, education level, task type, experience, needle-stick exposure, training participation, and infection control presence were the most impactful factors on nurses' scores for standard isolation precautions.

Table 5.10: institutional measures and its relationship with KAP

	Knowledge	Attitude	Practice	Perception	KAP
Knowledge	1	0.356**	0.331**	0.482**	0.542**
Attitude	0.356**	1	0.544**	0.512**	0.532**
Practice	0.331**	0.544**	1	0.483**	0.534**
Perception	0.482**	0.512**	0.483**	1	0.498**
KAP	0.542**	0.532**	0.534**	0.498**	1

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

If the level of significance is 0.05 or less, the compared group is considered to be significantly different. We conclude that a positive correlation is a relationship between variables in which an increase in one variable is associated with an increase in the other. All the correlation between Perception (institutional measures) variables are positive with KAP variables even if it's weak. The results indicate that knowledge, attitude and practice will move in the same direction as the institutional measures, i.e. if one of them increase then the others will also increase.

Chapter Six:

Discussion

6.1 Introduction

The current study has several strengths which are as follows: This study was conducted in Governmental hospital to evaluate nurses' knowledge, attitudes, and practices and perception regarding routine isolation precautions. Additionally, this study has concurrently collected rich data on demographic characteristics and knowledge, attitude, practice and perception variables, used a self-administered questionnaire that has already undergone validity and reliability testing, and to guarantee the proper quality of the data gathered for this study, the lead investigator's constant supervision and training of the data collector were strengths.

Worldwide, hospital-acquired infections are a common issue. Therefore, standard isolation precaution nursing skills and improved understanding might be crucial in preventing infection. As a crucial component of patient care, nurses should have the opportunity to practice every day in accordance with conventional isolation precautions. This cross-sectional study was conducted for that reason. In addition to serving as preventive measures for healthcare professionals against infection through professional contact, standard isolation procedures are essential for reducing hospital-acquired infections.

The study concluded that nurses' practices could improve with understanding of standard isolation precautions, however it might also lead to some changes in their behavior. According to the current study's findings, the majority of nurses had an intermediate understanding of standard isolation precautions. The mean (3.50) of the nurses' responses indicated that hand hygiene was important before and after patient care in order to prevent

infection, and they believed that hand washing before and after wearing gloves was essential in order to prevent both hospital-acquired infections and infections from patients.

Most nurses gave good answers to several of the knowledge questions, indicating that they have an intermediate understanding of typical isolation precautions. Regarding another question, there is a high level of awareness that gloves should be worn when working with mucous membranes or skin that are not intact, gowns should be worn when high-risk activities and procedures carry a risk of contamination, and it is crucial to take precautions during invasive procedures.

These results are consistent with a previous study which showed that most survey participants (91.6%) were aware of the common isolation practices used to avoid infections. 97% of respondents were aware that all patients should take routine precautions. 47.7% of respondents who were asked with advice on how to handle sharps instruments stated that they should be capped. The majority of participants (95.8%) are aware that gloves should be worn when drawing blood samples, and 96.5% are aware that hands should be cleaned before and after direct contact with patients. 73% are well aware that hand cleanliness is important while handling a patient's surroundings (Barikani & Afaghi, 2012).

According to the current study's findings, the majority of nurses have a positive attitude toward routine isolation precautions and take precautions to avoid hospital-acquired infections. According to the results, nurses have a strong attitude toward washing their hands after taking a blood sample or handling a patient's secretions (4.87), wearing gowns when caring for an infectious patient is crucial, even if certain care tasks are challenging (3.67), and wearing gloves when putting in or taking out a nasogastric tube (4.25). Attitude satisfies the requirements for normal isolation precautions.

According to (Kamunge, Cahill, Zipp, & Parasher, 2015), who conducted a study on nurses' attitudes toward standard isolation precautions, only 55% of study participants recognized the critical role that standard isolation precautions play in infection control and in preventing infections for both them and their patients. While 98.9% of participants agreed that gloves should be worn when handling patient blood, just 7% of participants said that hand washing is not required after touching a patient's surroundings. The study's findings demonstrated that the majority of nurses had negative attitudes about routine isolation precautions and lacked the necessary understanding of hand cleanliness before and after patient care (Kamunge et al., 2015).

According to the current study, hand washing should be performed after touching a patient's surroundings. This demonstrated intermediate approaches toward standard isolation procedures. Similar to another response, we firmly agreed that nurses' intermediate practices are predicted by hand washing after coming into touch with patient blood, bloody fluid, or secretions. I also firmly believe that gloves should be used while handling the skin, wounds, and mucous membranes of patients who have used instruments. This also foreshadows the intermediary procedures leading to routine isolation measures. Wearing a mask when there is a possibility of blood splashing indicates that these people were acting as intermediaries, which increases the risk of patients infecting healthcare personnel. Answers from the nurses to a follow-up inquiry about the practice of wearing gowns in situations when there is a risk of spilling blood or bodily fluids.

In contrast to another study on nurses' hand hygiene practices reveals that 58.5%, 28.1%, and 63.6% of nurses consistently practiced hand hygiene. hygiene following patient contact, following patient contact with their surroundings, and following glove removal, respectively, indicating that nurses' clinical skills or practices need to be improved. Just 22% of nurses always put on gloves before drawing a patient's blood, which further demonstrates their subpar work. Regarding injection safety, 63.6% of respondents had always disposed of sharps or needles in puncture-proof boxes, 7.9% occasionally bent or broke sharps, and 33.7% typically recapped sharps using two hands (Langoya & Fuller, 2015).

The findings indicate that nurses have a very strong perception of personal protection equipment (PPE) and hand hygiene. Nurses believe that using hand sanitizer when doing personal protective equipment (PPE) and adhering to the "six moments of hand hygiene" (mean = 3.99, SD = 0.94) are crucial for infection control. A significant understanding of the significance of these acts is shown by the mean scores of 3.7-3.8 for handwashing before and after patient interaction, after contact with the patient's surroundings, and before and after doing personal protective equipment. Furthermore, it is considered essential to use protective equipment such as masks, goggles, and boots during procedures that could expose one to harmful substances. According to our research, most nurses had positive feedback on infection control and SP procedures. This result contradicted a prior study conducted in the United Kingdom that revealed that physicians' and many qualified nurses' perceptions were adversely correlated with knowledge; this can be explained by the belief that infection prevention and control were time-consuming and complicated(Deborah J Ward, 2012).

According to a research conducted in Indonesia, it is challenging to adhere to safe sharps handling protocols since doing so is expensive, interferes with patient care, and lacks sufficient sharps containers and equipment(Duerink et al., 2013). The Eskander research linked the inability to wash hands after each intervention and the lack of nursing assistance to noncompliance with infection control SPs. This result is consistent with another study conducted in Egypt(Ibrahim, Said, & Hamdy, 2011).

In other study SPs were seen favorably by around 85% of healthcare workers at Minia University Hospital compared to 82% at Minia General Hospital. The only significant predictor of HCWs' attitudes toward infection control was their knowledge score. The odds of having a negative perception are significantly reduced by 13% for every point increase in knowledge; the multivariable-adjusted odds ratio (95% CIs) was 0.87 (0.81–0.95). Lack of gloves and gowns was the most common obstacle to SP practice(Refeai, Kamal, Ghazawy, & Fekry, 2020).

6.2 Conclusion

As a summary, nurses must take conventional isolation precautions in order to avoid hospital-acquired infections. The results of the study also demonstrate that the majority of the nurses who participated in it knew a lot about basic isolation precautions and had a positive attitude, practice and perception toward it. The results of the study also indicate that nurses follow the best practices and take the recommended isolation precautions to avoid infection.

6.3 Recommendations

1- The infection control team closely monitors nurses' actions and applies basic isolation precautions to prevent infections.
2- Every department's staff should have protective gear provided by the hospital management team and higher authority.
3- The higher authority at the hospital should establish some guidelines and include standard isolation precautions in their standard operating procedures.
4- Hospital administration should set up infection control committees to oversee the resources of conventional isolation precautions that are regularly accessible for infection control, to plan training sessions, and to monitor if the training provided improves attitudes and behaviors.

6.4 Areas for future research

1. Conduct further national studies about nurses' knowledge, attitudes, practice and perception level towards standard isolation precautions and compare them with the results of these local studies.

2. Assess the infection control systems at Palestinian hospitals, such as applying for GCI or ISO in order to enhance the prevention outcomes of HCAI.

3. With the current international health crisis of COVID-19 pandemic, it is necessary to conduct further research investigating the impact of COVID-19 prevention protocols on health care professionals' KAP and commitment level.

4. To conduct studies at the primary health care centers and outpatient clinics.

6.5 Limitations

1- The results of a study conducted in a few government hospitals were not generalized.
2- Do this study again with a larger sample size and sampling probability.
3- Examine the elements that made it difficult to implement standard isolation precautions.
4- This study's disadvantage is that it did not analyze the practices that should be evaluated by observation and that can provide the most accurate depiction of their activities.

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Annexes

Annex 1: Study questionnaire

Informed consent

Self- reported questionnaire on Knowledge, attitude, practice, and perception of nurses in governmental hospitals towards isolation precautions in the West Bank, Palestine

Dear Participant,

My name is Eman Faisal Mhalees a master's degree student of infectious disease prevention and control at Al Quds University-Palestine. I am conducting my research as a part of my study requirements at the university. The overall aim of this study is to assess nurses' knowledge, attitude, practices, and perception towards standard isolation precautions in governmental hospitals in the West Bank. Thank you for taking the time to answer this questionnaire. The participation is voluntary and where you can withdraw from the study at any time. The study is merely scientific, and data will be handled confidentially and will be only used for scientific purposes. The results of the study could be helpful in improving the working conditions at the hospitals. Answering the questionnaire takes about 5–10 minutes. The research team is ready to provide you with the results of this study upon request

Thank you very much for your cooperation.

For further inquiries, you can call: Mobile: 0569741700

Researcher: Eman Faisal Mhalees

Supervisor: Dr. Yousef Jaradat

Section 1: Socio-Demographic Data

- This section deals with personal data. Please mark with cross (X) the one answer to each question which most accurately represents your situation:

Q1. Age group in years: 1. □ Less than 30. □ 30- 45 □ Over 45

Q2. Sex: 1. □ Male 2. □ Female

Q3. Marital Status: 1. □ Married 2. □ Unmarried

Q4. How could you describe your economic status?

1.1. □ Very good 3. □ Good 4. □ Poor

Q5. Educational level: 1. □ Nursing diploma 2. □ Bachelor's in nursing 3. □ Master 4. □ bachelor's in nursing with high diploma

Q6. Years of experience in nursing: 1.□ Less than 5 years 2. □ 5-10 years 3. □ Over 10 years

Q7. Your present main work unit ( )

Q8. Your Job title:

1. □ Head nurse

2. □ Assistant head nurse

3.□ Registered nurse

4 □ Licensed Practical Nurse (LPN)

Q9. How long have you been working in your department?

1. □ Less than 1year
2. □ 1-5 years
3. □ Over 5 years

Q10. Your typical shift work:

1. □ Permanent Morning

2. □ Permanent Evening

3. □ Permanent Night

4. Rotation (Alternating between day work and night work)

Q11.Type of your task:

1**.** Direct patient care

2. Administrative work

3. Both

Q12. Have you been exposed to needle stick injury or sharp injury?

1**.** No 2. Yes

Q13. **Did you attend or participate in a training workshop about standard isolation precautions?**

1. No 2. Yes

Q14. **Does your institution have an infection control committee:**

1. Yes 2. No 3. I do not know

Q15. **When was this committee established**:

1. For one year 2. For 3 years

3. For 4 years 4. I don't know

Q16. **The infection control committee is holding a meeting**:

1. Weekly 2. Monthly 3. Annually 3. I don’t know

17. How would you rate the effectiveness of the training prevention you received about standard isolation precautions?

1. Not at all effective 2. Moderately effective 3. Extremely effective

Section 2: Knowledge of nurses towards standard isolation precautions:

- This section deals with Knowledge of nurses toward standard isolation precautions. Please mark with cross (X) the one answer to each question which most accurately represents your situation:

Statement	Strongly disagree	Disagree	Neutral	Agree	I strongly agree
	1	2	3	4	5
1. Hand hygiene should be practiced before and after patient care.					
2. Hand hygiene should be performed before and after using gloves.					
3. Hand hygiene should be done after accidental contact with blood, blood-containing fluids, secretions, or contaminated items.					
4. Gloves should be worn when handling mucous membranes or non-intact skin.					
5. Eye protection goggles should be worn to safeguard mucous membranes.					
6. Hands should be washed with Betadine solution after contact with blood, bloody fluids, body secretions, or infectious materials.					
7. A surgical mask should be worn to protect the nose and mouth during invasive procedures and activities.					
8. Needle should not be bent before disposal.					
9. Needle should not be recapped before disposal.					
10. Gowns should be worn when there is a risk of contamination from high-risk procedures and activities.					

Section 3: Attitudes of nurses toward standard isolation precautions:

- This section deals with the attitudes of nurses toward standard isolation precautions. Please mark with cross (X) the one answer to each question which most accurately represents your situation:

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	1	2	3	4	5
1. It is important to wash your hands when drawing a blood sample or coming into contact with a patient's secretions.					
2. Wearing a gown when attending to an infectious patient is important even if some care tasks are difficult to perform.					
3. Gloves should be worn when inserting or removing a nasogastric tube.					
4. Respiratory masks and goggles are necessary for intubation/extubating and suctioning of the tracheal tube as they may facilitate the healthcare professional's competence.					
5. Wearing a gown is necessary when entering the ICU.					
6. Accidental exposure to a contagious disease can occur by chance.					
7. Hand washing before wearing gloves is a simple but important action.					
8. It is necessary to assume that all patients are infectious until proven otherwise					
9. Precautions are required for infectious patients in the reception and waiting rooms.					
10. Maintaining a distance of 90 cm from a respiratory infectious patient is an effective in preventing transmission.					

Section 4: Practice of nurses toward standard isolation precautions

- This section deals with the practice of nurses toward standard isolation precautions. Please mark with cross (X) the one answer to each question which most accurately represents your situation:

Statement	Strongly disagree	Disagree	Neutral	Agree	I strongly agree
	1	2	3	4	5
1. After using needles, I do not bend or recap them before disposal.					
2. I perform hand hygiene after touching the patient's surroundings.					
3. I practice hand hygiene after coming into contact with the patient's blood, bloody fluids, or secretions.					
4. I wear gloves when touching the patient, using instruments, handling skin, wounds, mucosal membranes, blood, and during invasive procedures.					
5. I wear a gown if there is a risk of blood or body secretions coming into contact with you.					
6. I use a mask if there was a risk of blood splashing onto your face during the last event.					
7. I maintain a distance of 90 cm from patients suspected of having respiratory infections.					
8. Decontamination workers and sweepers should wear both gloves and gowns.					
9. I use a new sterile syringe and needle for each instance of aspirating from multi-dose vials.					

Section 5: Perception of nurses towards standard isolation precautions

- This section deals with perception of nurses toward standard isolation precautions.
- Please mark with cross (X) the one answer to each question which most accurately represents your situation:

Statement	Strongly disagree	Disagree	Neutral	Agree	I strongly agree
	1	2	3	4	5
1. Adhering to the six moments of hand hygiene is crucial for infection control.					
2. Handwashing with soap for 20 seconds can prevent the transmission of infections.					
3. Handwashing before any contact with a patient is essential.					
4. Handwashing before any clean or aseptic procedures is essential.					
5. Handwashing after any contact with a patient is vital					
6. Handwashing after contact with the patient's immediate surroundings is essential.					
7. Handwashing after any contact with a patient's body fluids is vital.					
8.Handwashing before putting on PPE is essential.					
9. Handwashing after removing PPE is vital.					
10. It is vital to use hand sanitizer to address invisible dirt.					
11. After applying sanitizer, wait until your hands are completely dry before touching any surfaces.					
12. The PPE donning protocol requires using hand sanitizer multiple times during the procedure.					
13. A head cover should be worn during any procedures.					
14. Wearing a surgical mask at all times is essential in wards where infectious disease cases may be admitted.					
15. Wear goggles during specific procedures that could cause splashes to the eyes, such as suctioning or aerosol therapy, when dealing with suspected infectious diseases.					
16. Wear boots while performing procedures in the patient's area for suspected or confirmed cases of highly infectious droplet-borne diseases.					
17. Boots and shoe covers should be worn first before putting on other PPE items.					

Section 6: Hospital measures towards standard isolation precautions

- This section deals with hospital measures toward standard isolation precautions. Please mark with cross (X) the one answer to each question which most accurately represents your situation:

Statement	Strongly disagree	Disagree	Neutral	Agree	I strongly agree
	1	2	3	4	5
1. The medical instruments and equipment are completely sterilized in the sterilization department in the hospital					
2. The Infection control committee in the hospital is responsible for conducting periodic meetings to increase the staff awareness about standard isolation precautions					
4. The hospital's infection control committee follows and monitors the work of the medical staff and the results of cultures from patients.					
5. The hospital director and supervisors monitor the employee's knowledge about the isolation precautions.					
6. Hospital administrators and supervisors monitor all patients at risk for infection to take the necessary precautions towards standard isolation precautions.					
7. The patient is usually examined to detect colonization of microorganisms regardless of whether there is enough evidence of infection or not.					
8. I believe that isolation precautions, policies, rules, standards and regulations are adequate in the hospital.					
9. The hospital is well prepared for the knowledge, training and equipment needed to prevent an outbreak of infection.					
10. All medical staff participate every year in training courses / workshops about standard isolation precautions.					
11. The necessary personal protective equipment (PPE) to deal with patients are always available in the hospital at all times.					

12. Specific vaccinations are always provided to medical staff in order to prevent health care acquired infections.					
13. The hospital conducts a periodic survey of all employees about standard isolation precautions.					

Thank you for your cooperation

Annex 2: MOH Approval

State of Palestine
Ministry of Health
Education in Health and Scientific
Research Unit

دولة فلسطين
وزارة الصحة
وحدة التعليم الصحي
والبحث العلمي

Ref.: ....
Date:..................

الرقم: ١٦٢/١٣٤٠/٢٠٢٤
التاريخ: ٦/٥/٢٠٢٤

الأخ مدير عام الادارة العامة للمستشفيات المحترم،،،

عطوفة الوكيل المساعد لمجمع فلسطين الطبي المحترم،،،

تحية واحترام،

الموضـــوع: تسهيل مهمة بحث

يرجى تسهيل مهمة الطالبة: ايمان فيصل محاليس- ماجستير الوقاية وضبط الامراض المعدية/ جامعة القدس، وباشراف د. يوسف جرادات، في عمل بحث بعنوان:

'Knowledge, attitude, practice and perception of nurses in governmental hospitals towards isolation precautions in West Bank

من خلال السماح للطالبة بجمع المعلومات عن طريق تعبئة استبانة من قبل الطاقم التمريضي بعد اخذ موافقتهم، وذلك في:

- مستشفى عاليه
- مستشفى الوطني
- مجمع فلسطين الطبي

على ان يتم الالتزام باساليب واخلاقيات البحث العلمي، والحفاظ على سرية المعلومات.

على ان يتم تزويد الوزارة بنسخة PDF من نتائج البحث، التعهد بعدم النشر لحين الحصول على موافقة الوزارة على نتائج البحث.

مع الاحترام،

د. عبد الله القواسمي
رئيس وحدة التعليم الصحي والبحث العلمي

نسخة: عميد كلية الصحة العامة المحترم/ جامعة القدس

Telfax.:09-2333901 scientificresearch.doo@gmail.com 09-2333901 :تلفاكس

استكشاف المعرفة والمواقف والممارسات والاعتقاد للتمريض فيما يتعلق بتعليمات العزل في المستشفيات الحكومية في الضفة الغربية

إعداد: ايمان فيصل محاليس

إشراف: الدكتور يوسف جرادات

الملخص

الخلفية: ينبغي منع انتقال العدوى المكتسبة من المستشفيات، والتي قد تظهر على شكل دم أو إفرازات أو فضلات جسدية أو سوائل جسدية أو أغشية مخاطية قد تحتوي على كائنات معدية، من خلال اتخاذ احتياطات العزل القياسية.

يقع الواجب الأخلاقي لرعاية المرضى ومساعدتهم على استعادة صحتهم وتزويدهم برعاية علاجية عالية الجودة على عاتق التمريض. ونتيجة لذلك، ينبغي إعلام المتخصصين في الرعاية الصحية بشكل صحيح واتباع أفضل الممارسات عندما يتعلق الأمر بالالتزام الصارم باحتياطات العزل التقليدية للوقاية من العدوى.

الهدف: تهدف هذه الدراسة إلى تقييم مدى معرفة الممرضين ومواقفهم وممارساتهم واعتقاداتهم فيما يتعلق بتعليمات العزل في المستشفات الحكومية في الضفة الغربية.

المنهجية: تصميم مقطعي وصفي يتكون من 804 ممرضين وممرضات وذلك من خلال تعبئة استبانة الدراسة حيث تم إجراؤها في 3 مستشفيات حكومية وهي مستشفى الخليل الحكومي ومستشفى مجمع فلسطين الطبي ومستشفى الوطني. تم جمع البيانات باستخدام استبانة تم الإجابة عليها ذاتياً من قبل المشاركين بحيث تكونت من 29 عنصرا لبناء ستة أقسام تغطي الصفات الديموغرافية، والمحددات وأنشطة العاملين في مجال الرعاية الصحية، والمعرفة، والمواقف، وممارسات واعتقادات اطقم التمريض تجاه احتياطات العزل القياسية للسيطرة على العدوى بالمستشفيات.

النتائج: تم في هذه الدراسة توزيع (804) استبيانات إلكترونية، وأكمل (352) مشاركاً الاستبيانات، وكان معظم المشاركين من الذكور (58.5%) مقابل (41.5%) من الإناث. غالبية الممرضات الذين تتراوح أعمارهم بين 30 إلى 45 سنة (العدد = 211). وكشفت نتائج الدراسة أن إجابات المشاركين تنبأت بأن معظم الممرضات لديهم معرفة جيدة وموقف وممارسة وتصور مرضي تجاه احتياطات العزل القياسية.

علاوة على ذلك، كان تصور الممرضين ومعارفهم واتجاهاتهم وممارساتهم وإجراءات المستشفى تجاه إجراءاتهم المؤسسية جيدة فيما يتعلق بالوقاية من العدوى ومكافحتها (متوسط 3.77 مع 0.30 SD)، (متوسط 3.59 مع 0.41 SD)، (متوسط 3.77 مع 0.30 SD)، (متوسط 3.59 مع 0.41 SD). 3.6 مع 0.42 SD)، (المتوسط 3.15 مع SD 0.39)، و (المتوسط 3.65 مع 0.35 SD) على التوالي.

الخلاصة: يعد استخدام أساليب العزل أمرًا مهمًا جدًا للممرضين والممرضات للسيطرة على العدوى بالمستشفيات. كما واظهرت نتائج الدراسة أن معظم الممرضين المشاركين في الدراسة لديهم معرفة جيدة حول احتياطات وأساليب العزل، ولكن كان هناك موقف مرضي تجاه احتياطات العزل. تنبات نتائج الدراسة أيضًا بأن معظم فئات التمريض يتمتعون أيضًا بممارسة وإدراك بما يخص الالتزام بالاحتياطات الاحترازية للعدوى، وأنهم يستخدمون احتياطات العزل القياسية للسيطرة على العدوى.