

Awareness and Practice of Nosocomial Infection Control Among Nurses in Private Hospitals in Puerto Princesa City

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Abstract

Nosocomial infections are also known as healthcare-associated infections (HAIs), a significant concern due to the impact on patient's safety, healthcare cost, and length of stay. Nurses are essential in preventing and managing these infections since they are the front-line healthcare practitioner. This study is to evaluate the level of awareness and practices related to nosocomial infection control in private hospitals in Puerto Princesa City. It particularly examined nurses' familiarity with infection control guidelines, their adherence to standard protocols, and the extent to which training and institutional support influence their infection prevention behaviors. By exploring these elements, the study aimed to determine how educational programs and organizational initiatives contribute to enhancing healthcare staff competencies, subsequently improving patient care quality and ensuring a safer clinical environment.

The study employs a mixed method design to determine the awareness and practice of nosocomial infection control among healthcare personnel in private hospital in Puerto Princesa City. This design of the study focused on providing a thorough overview of nurses awareness and practices to prevent such infections within healthcare settings. The design emphasized the quantitative description of nurses' level of awareness and infection control practice and data collection utilized a structured survey based on the Infection Control Knowledge and Practice Questionnaire (ICKPQ), as well as qualitative description of actual nursing practices via direct observation

Nurses are knowledgeable about nosocomial infection, including their definition, kinds, modes of transmission and hospital policies. They understand the need to follow protocols, preventive measures, droplet and vector-borne transmission. Even with compliance to suggested guidelines, problems such as inconsistent disinfection of IV port can result in infection concerns. This shows that without structural support, appropriate staffing and continuous procedural reinforcement, knowledge alone is insufficient. The implementation of infection control measures in practice can be significantly improved by increasing nurses' knowledge through education and training,

Chapter I

INTRODUCTION

This chapter provides a basic framework for studying the important role of education and training in controlling hospital-acquired infections. It highlights why this topic matters in the field of healthcare. The focus is on the level of awareness of staff from private hospitals in Puerto Princesa City on

nosocomial infections and transmission, aiming to show how effective educational programs and training can improve infection control practices. The study seeks to understand how these programs affect staff skills and patient safety, addressing the critical need for better infection control methods in hospitals.

Background of the Study

Infections that occur in healthcare environments, often referred to as nosocomial infections or hospital-acquired infections (HAIs), represent a significant threat to patient safety and the overall standard of care. These infections arise during medical procedures and were not present when the patient was admitted to the facility. Various pathogens, including bacteria, viruses, and fungi, can be responsible for these infections. Research conducted by Haque and colleagues in 2018 found that roughly 5% to 10% of individuals hospitalized are impacted by HAIs. This statistic emphasizes the critical need for effective infection prevention strategies within healthcare facilities to ensure patient safety and improve overall healthcare results.

The responsibility for preventing and managing nosocomial infections primarily lies with healthcare staff, particularly nurses and frontline workers. These professionals play a crucial role in implementing hygiene practices, maintaining a safe environment and educating patients about infection prevention strategies. The culture of patient safety is heavily influenced by the actions and attitudes of healthcare personnel. In many cases, healthcare workers strive to promote proper hygiene and safe practices but face numerous challenges, including high patient volumes and limited resources. These challenges can impede the capacity of healthcare professionals to manage infections effectively (Sparke et al., 2019). Consequently, it is crucial for healthcare organizations to provide sufficient support to their staff, equipping them with the tools and resources needed to reduce the likelihood of hospital-acquired infections (HAIs).

Occupational exposure to infectious agents presents a significant risk for healthcare workers. Research conducted by Waheed (2017) reveals that adherence to personal protective measures among patients is alarmingly low, with only 50% to 60% complying with recommended guidelines. The failure to adhere to protocols not only raises the likelihood of nosocomial infections but also puts healthcare workers at greater risk of exposure to infectious diseases. Given these insights, it is important to implement targeted strategies that enhance compliance with infection prevention measures. Implementing strategies that involve both patients and healthcare professionals in recognizing the significance of adherence can significantly reduce these risks.

Education and training are essential in improving healthcare workers' understanding and awareness of infection prevention strategies. Research by Goyal and Chaudhry in 2019 evaluated the impact of educational initiatives on healthcare students' comprehension of standard precautions. Their results show that although hand hygiene is broadly acknowledged as a vital practice, continuous training is crucial to reinforce this knowledge and guarantee its consistent application in clinical environments. Furthermore, research by Benah (2018) demonstrated a statistically significant relationship between staff training in occupational health and safety and compliance with infection control protocols. The data suggest that healthcare workers who receive comprehensive education are more likely to adhere to these important practices, ultimately benefiting patient care.

The prevention of surgical site infections (SSIs) is of utmost significance in the medical field, as these infections are recognized as one of the primary causes of patient complications following surgery. SSIs not only pose serious health risks to patients, potentially leading to prolonged recovery times and

additional medical interventions, but they also result in increased healthcare costs due to extended hospital stays and the need for further treatments. Therefore, implementing effective strategies to reduce the incidence of SSIs is essential for enhancing patient safety and optimizing resource allocation within healthcare systems. Staubitz (2019) emphasizes the necessity of a multifaceted approach to reduce the incidence of SSIs. Implementing Lean Principles, which focus on improving quality measures and streamlining processes, can be beneficial in integrating effective interventions. Facilities that adopt such principles often experience enhanced infection control strategies and improved patient outcomes. By prioritizing quality improvement initiatives, healthcare organizations can foster an environment conducive to better health results for their patients.

To effectively combat healthcare-associated infections, healthcare workers must consistently comply with established infection prevention protocols. Research conducted by Sparke et al. (2019) suggests that further investigation into healthcare workers' perceptions of disease causation and infection transmission is essential. Gaining insight into these perceptions can guide the creation and execution of effective infection prevention and control (IP&C) programs. Additionally, fostering an environment where healthcare workers feel empowered to adhere to safety measures is crucial for protecting both patients and themselves. Encouraging open communication and collaboration among staff can lead to greater adherence to infection control practices.

The evidence consistently demonstrates that education and training are vital in controlling nosocomial infections. Identifying the perceptions and attitudes of healthcare staff, particularly in settings like private hospitals, can provide valuable data to inform strategies aimed at raising awareness and enhancing preventive measures. Furthermore, developing clear communication channels regarding infection control can significantly improve care coordination and patient safety. Engaging healthcare workers in discussions about their experiences and challenges can lead to innovative solutions that address the complexities of infection prevention.

In conclusion, this research on hospital-acquired infections is highly significant as it underscores the urgent need for effective infection control strategies within healthcare environments. By understanding the elements that contribute to HAIs, the responsibilities of healthcare professionals, and the significance of education and training, we can achieve better patient outcomes and lower the rates of illness and death linked to these infections. As healthcare systems advance, emphasizing infection prevention and control will be vital for safeguarding patient safety and improving care quality.

Research Gap

The challenge of infections acquired in healthcare settings, commonly referred to as nosocomial infections or hospital-acquired infections (HAIs), is a significant issue that impacts a large number of patients. It is estimated that around 5% to 10% of hospitalized individuals experience HAIs, which can be triggered by various pathogens, including bacteria, viruses, and fungi (Haque et al., 2018). These infections often arise during medical treatment and are not present at the time of a patient's admission, underscoring the necessity for effective infection prevention measures within healthcare facilities.

Healthcare personnel, particularly nurses and frontline staff, are crucial in the prevention and management of nosocomial infections. They are tasked with implementing hygiene protocols, ensuring a safe environment, and educating patients on strategies to prevent infections. However, healthcare workers frequently encounter numerous obstacles, such as high patient loads and insufficient resources, which can impede their ability to effectively manage and control infections (Sparke et al., 2019).

Therefore, it is important for healthcare systems to offer sufficient support to their staff, equipping them with the tools and resources necessary to reduce the risk of HAIs.

The potential for occupational exposure to infectious agents poses a serious concern for healthcare workers. Studies indicate that adherence to personal protective measures among patients is alarmingly low, with compliance rates ranging from 50% to 60% regarding recommended guidelines (Waheed, 2017). This lack of adherence not only elevates the risk of nosocomial infections but also increases the likelihood of healthcare workers being exposed to infectious diseases. Implementing targeted interventions to enhance compliance with infection prevention protocols is crucial, and engaging both patients and healthcare professionals in understanding the importance of adherence can significantly mitigate these risks.

Education and training are crucial in improving healthcare workers' understanding and awareness of infection prevention strategies. Continuous training is necessary to reinforce knowledge and guarantee consistent application in clinical environments (Goyal & Chaudhry, 2019). Research has demonstrated a statistically significant relationship between staff training in occupational health and safety and compliance with infection control protocols (Benah, 2018). Healthcare workers who receive comprehensive education are more likely to adhere to important practices, which in turn benefits patient care.

Preventing surgical site infections (SSIs) is especially important, as these infections are among the most common causes of complications for patients and significantly drive-up healthcare costs. SSIs can lead to extended hospital stays, additional medical treatments, and increased morbidity, all of which impact patient recovery and overall healthcare efficiency. A multifaceted approach is necessary to reduce the incidence of SSIs, and implementing Lean Principles can be beneficial in integrating effective interventions (Staubitz, 2019). Prioritizing quality improvement initiatives enables healthcare organizations to foster an environment conducive to better health results for their patients.

Effective infection prevention requires healthcare workers to consistently comply with established infection prevention protocols. Further investigation into healthcare workers' perceptions of disease causation and infection transmission is essential, as gaining insight into these perceptions can guide the creation and execution of effective infection prevention and control programs. An environment where healthcare workers feel empowered to adhere to safety measures is crucial for protecting both patients and themselves. Open communication and collaboration among staff can lead to greater adherence to infection control practices.

The evidence consistently demonstrates that education and training are vital in controlling nosocomial infections. Identifying the perceptions and attitudes of healthcare staff can provide valuable data to inform strategies aimed at raising awareness and enhancing preventive measures. Developing clear communication channels regarding infection control can significantly improve care coordination and patient safety. Engaging healthcare workers in discussions about their experiences and challenges can lead to innovative solutions that address the complexities of infection prevention.

Research on hospital-acquired infections underscores the pressing necessity for robust infection control measures in healthcare settings. Factors contributing to HAIs, the roles of healthcare professionals, and the importance of education and training are all crucial in improving patient outcomes and lowering the incidence of illness and mortality associated with these infections. Focusing on infection prevention and control is essential for protecting patient safety and enhancing the quality of care. Healthcare

organizations should prioritize these efforts, ensuring that healthcare workers possess the knowledge, skills, and resources needed to deliver high-quality care while effectively reducing the risk of HAIs. Puerto Princesa City, like many provinces and cities in the Philippines, presents a desperate challenge in the realm of healthcare, where private hospitals have become the cornerstone of infectious disease prevention. The limited capacity of government hospitals in the province has created a void that private hospitals have endeavored to fill, albeit with varying degrees of success. A thorough examination of the existing healthcare policies and practices is essential to identify areas that require improvement, particularly in the context of preventing infectious diseases. Multiple factors add to the complexity of this issue, including the World Health Organization's announcement to conclude COVID-19 as a Public Health Emergency of International Concern (PHEIC). This decision has resulted in a sense of complacency among certain healthcare providers, which is concerning. Such complacency presents considerable risks to patients, healthcare workers, and the wider community, highlighting the necessity for ongoing vigilance and strict adherence to evidence-based preventive measures. Research has shown that a multifaceted approach is necessary to effectively prevent infectious diseases, incorporating elements such as staff training, infection control protocols, and patient education. Furthermore, the importance of continuous monitoring and evaluation of these measures cannot be overstated, as it enables healthcare providers to respond promptly to emerging challenges and adapt their strategies accordingly. The healthcare landscape in Puerto Princesa is characterized by a delicate balance of factors, and any efforts to improve infectious disease prevention must take into account the unique characteristics of this setting. The aim of this study is to offer an in-depth analysis of the current status of infectious disease prevention in private hospitals. This understanding seeks to inform the creation of targeted interventions that improve patient care, safeguard the health and safety of healthcare workers, and foster a safer healthcare environment for all involved parties.

Statement of the Problem

This research seeks to thoroughly investigate the elements that lead to nosocomial infections, framed by the following research questions:

1. What is the level of awareness among staff at private hospitals in Region IV-B regarding nosocomial infections and how they are transmitted, in terms of:
 - a. Knowledge of the definitions and types of nosocomial infections;
 - b. Understanding of common transmission routes (e.g., contact, airborne);
 - c. Awareness of risk factors for nosocomial infections;
 - d. Familiarity with hospital policies and protocols related to infection control;
 - e. Ability to identify preventive measures for nosocomial infections;
 - f. Droplet and vector-borne transmission;
 - g. Prolonged hospitalization and invasive procedures and their relationship with infection control; and
 - h. Accurately describe specific hospital policies related?
2. What is the level of practice of nurses in their awareness of recognizing /attending to droplets/vector-borne transmission, in terms of:
 - a. Awareness and recognition;
 - b. Practice and response; and
 - c. Training and resources?
3. What infection control practice do nurses implement to prevent droplet and airborne, in terms of:
 - a. Hand hygiene

- b. Protective Personal Equipment
- c. Safe disposal of infectious waste
- d. Adherence to aseptic procedure

Significance of the Study

This study offers significant advantages to various stakeholders, including the Department of Health, Provincial Health Office, hospital staff, patients, hospital administrators, and future researchers. Each group stands to gain valuable insights that can lead to improved practices and outcomes in healthcare settings.

Department of Health (DOH). The Department of Health plays an important role in managing healthcare-associated infections (HAIs). It is responsible for creating national policies and guidelines to prevent and control these infections in healthcare settings. The findings from this research will help the Department of Health (DOH) assess how effective current training programs and monitoring systems are. Identifying gaps in knowledge among healthcare workers is key to deciding where to focus training efforts. Better training can lead to improved adherence to infection control practices, which is essential for reducing the number of HAIs.

Provincial Health Office (PHO). This research helps improve healthcare quality in the province and supports the goals of the Provincial Health Office (PHO). It is important because it provides insights into how infectious disease prevention is managed in private hospitals, helping the PHO make better decisions and develop policies. By finding gaps in current healthcare practices, the PHO can direct resources effectively to fix these issues, leading to better patient outcomes and less disease spread from patients to healthcare workers. The study's results are also expected to help create targeted actions that enhance patient care, protect healthcare workers, and create a safer healthcare environment.

Hospital Staff. Hospital staff are on the front lines of preventing and controlling nosocomial infections. Their daily engagements with patients and the healthcare setting place them in a distinct position to either facilitate or help curb the transmission of infections. This study emphasizes the importance of staff understanding and following established infection prevention protocols. Highlighting areas where knowledge may be lacking can lead to targeted training initiatives that improve compliance with safety measures. When healthcare workers are well-trained and informed, it not only enhances their performance but also significantly improves patient care and safety.

Patients. Patients can greatly benefit from increased awareness and understanding of nosocomial infections. When patients are educated about infection prevention strategies, they are more likely to engage in practices that protect their health. Fewer healthcare-associated infections mean that patients can avoid complications that may arise during recovery, particularly after surgical procedures. Using effective prevention strategies, such as proper hand hygiene and the correct use of personal protective equipment (PPE), can lead to faster recoveries and lower death rates. Overall, educating patients can improve health outcomes and make the healthcare system more efficient.

Hospital Administrators. Hospital administrators play a vital role in shaping the policies and procedures for infection prevention and control in healthcare settings. This study offers important insights that can help guide their decisions on resource allocation and the creation of training programs. Understanding the factors that contribute to nosocomial infections allows administrators to implement effective strategies that enhance staff training and ensure compliance with infection control protocols. Additionally, a focus on improving infection prevention practices not only benefits patient safety but

also strengthens the hospital's reputation in the community. Administrators who prioritize these efforts demonstrate a commitment to high-quality care and patient well-being.

Future Researchers. The findings of this research enhance our understanding of nosocomial infections and ways to prevent them. Future researchers can use this study as a starting point to explore areas that need more investigation. Highlighting the significance of education and training in infection control promotes further research into specific elements of infection prevention and management. This ongoing research is crucial for developing innovative strategies that can lead to better healthcare practices and improved patient outcomes.

Scope and Delimitation of the Study

This research focuses on examining the awareness and practice of nurses across all wards in the management of nosocomial infections among healthcare staff in private hospital in Puerto Princesa City. It aims to understand the impact of educational programs on staff awareness and their adherence to infection control protocols, which can help improve patient care and safety. The study's goal is to identify successful methods for enhancing compliance with infection prevention practices, which is vital for lowering the risk of hospital-acquired infections. Implementing effective infection control measures is key to stopping the spread of infectious diseases, and this research seeks to contribute to the creation of evidence-based strategies to accomplish this objective.

The study is conducted in Puerto Princesa City, which limits the experiences and policies of hospitals reflected in the study. As the research is confined to private hospitals within the city, it does not include hospitals in other municipalities of Palawan. This geographical limitation means that the findings may not be generalizable to hospitals in other parts of the province, which may have different infection control policies, procedures, and challenges. The study's focus on Puerto Princesa City provides a unique snapshot of the current state of nosocomial infection control education and training in private hospitals within the city, but it may not capture the diverse experiences and perspectives of healthcare professionals working in other parts of Palawan. Moreover, the demographic profile of respondents is limited to healthcare personnel working in private hospitals within Puerto Princesa City, excluding other healthcare workers, such as those employed in public hospitals, clinics, or community health settings. Overall, the study's limitations highlight the necessity for additional research to examine the experiences and viewpoints of healthcare personnel in various healthcare environments and situations. This approach will help achieve a more thorough understanding of nosocomial infection control. This study conducted last September 2025 to November 2025

Definition of Terms

These definitions are defined theoretically and operationally which intended to provide clarity and ensure a common understanding of the terms as they are used within the context of the study.

Awareness of Risk Factors. These refer to the understanding among healthcare personnel regarding various elements that heighten the risk of acquiring nosocomial infections in patients. This includes knowledge of patient demographics, existing health issues, and environmental conditions that may contribute to infection susceptibility.

Compliance Rates. These refer to the degree to which healthcare professionals follow established infection prevention guidelines which are considered essential. High compliance rates are important for effectively reducing the incidence of nosocomial infections and ensuring patient safety.

Education and Training Programs. These refer to essential structured programs designed to improve the knowledge and skills of healthcare workers in infection prevention and control. These initiatives

could include workshops, seminars, and ongoing training sessions that emphasize best practices and the latest developments in infection management.

Effectiveness of Education and Training. It refers to the measure of how well educational initiatives improve healthcare workers' understanding, skills, and practices related to infection prevention. This evaluation includes assessing changes in compliance and infection rates following the implementation of training programs.

Healthcare. It refers to the organized provision of medical services to individuals, encompassing a wide range of services and settings aimed at promoting health and treating illnesses.

Healthcare Workers. These refer to individuals who are engaged in providing care and services to patients within healthcare environments. This group mainly consists of nurses, doctors, and frontline staff responsible for executing hygiene protocols and infection control measures.

Hospital. This refers to the healthcare institution that provides treatment and care for patients, often equipped with specialized medical staff and facilities for diagnosis, treatment, and rehabilitation.

Hospital Protocols. These refer to defined procedures and guidelines established in a hospital setting essential for protecting the health and safety of both patients and staff. These protocols usually include infection control measures, standards for patient care, and emergency response plans.

Infection Control Protocols. These refer to crucial established practices and guidelines that are aimed at preventing the spread of infections in healthcare settings. These protocols encompass hand hygiene, the use of personal protective equipment (PPE), sterilization of medical instruments, and educating patients about infection prevention.

Infection Prevention and Control (IP&C) Programs. These refer to essential comprehensive strategies employed by healthcare institutions to prevent and manage infections. These initiatives include policies, training, and practices aimed at reducing the risk of healthcare-associated infections (HAIs) while safeguarding both patients and healthcare providers.

Knowledge of Definitions and Types of Nosocomial Infections. It refers to the comprehension among healthcare staff regarding what constitutes nosocomial infections, including their various classifications and characteristics.

Nosocomial Infections. These refer to the infections that patients acquire while receiving treatment for unrelated medical conditions in a healthcare facility, which were not present upon admission, and can significantly affect patient recovery and safety.

Patient Safety Culture. This refers to essential shared beliefs, values, and behaviors within a healthcare organization that emphasize patient safety. This culture is influenced by the actions and attitudes of healthcare personnel and plays a key role in effective infection control.

Relevance of Training Content. It refers to the degree to which the subject matter presented in education and training programs corresponds with the actual roles and responsibilities of healthcare workers in preventing infections.

Surgical Site Infections (SSIs). These refer to a specific category of nosocomial infection that arises after surgical procedures at the site of surgery. SSIs are critical to monitor due to their potential to cause serious complications and increase healthcare costs.

Transmission Routes. These refer to the various pathways through which infections can spread within healthcare settings, including contact transmission, airborne transmission, and other methods.

Understanding of Common Transmission Routes. It refers to the knowledge among healthcare staff regarding the pathways through which nosocomial infections are spread, including contact, airborne, and

other transmission methods.

Self-Reported Enhancements in Knowledge and Skills. These refer to the perceived improvements in understanding and ability to implement infection control practices as indicated by healthcare workers after participating in training programs.

Chapter II

REVIEW OF RELATED LITERATURE AND STUDIES

This chapter investigates studies related to infection prevention and control (IPC) within healthcare settings. It highlights the significance of adhering to established protocols to minimize nosocomial infections. The discussion centers on how elements such as training, education, and hospital policies influence compliance. Recognizing risk factors and pathways of transmission is vital for successful infection prevention. The chapter also explores how educational initiatives and mentorship improve healthcare professionals' competencies in IPC. Additionally, it identifies gaps in the existing literature, pointing out areas that need further research.

Related Literature and Studies

Nosocomial infections, also referred to as healthcare-associated infections (HAIs), are a significant global concern affecting various patient populations, particularly vulnerable groups such as pediatric patients. These infections can result in severe health complications, extended hospitalizations, and higher mortality rates, thus placing a substantial strain on healthcare systems. Research from various countries highlights the widespread nature of these infections and the urgent need for effective strategies to address them. For instance, a recent study conducted in Ethiopia highlights that pediatric patients are particularly susceptible to HAIs, which can result in severe health complications and heightened mortality. Despite ongoing efforts to monitor and control HAIs through systems like Nosocomial Infection Surveillance (NIS), significant challenges persist. One of the most pressing issues is the inadequacy of early warning systems, which often struggle to predict outbreaks effectively. This situation underscores the critical need for enhanced education and training for healthcare staff, as improved knowledge and skills are essential for implementing effective infection control practices.

The impact of nosocomial infections extends beyond individual health outcomes; it significantly affects healthcare systems financially and operationally. Research by Sikora and Zahra (2023) notes that reliable data on HAIs is scarce, complicating efforts to address the issue effectively. The World Health Organization (WHO) estimates that approximately 15% of hospital patients are affected by various pathogens, including bacteria, viruses, and fungi. This statistic emphasizes the urgent need for effective surveillance systems to monitor and prevent healthcare-associated infections (HAIs). In high-risk areas, such as surgical and intensive care units, where the rate of nosocomial infections can reach 5% to 10%, implementing effective preventive measures is essential. Strategies like aseptic wound handling, strict hand hygiene, and responsible antibiotic use are key components of infection control. Nonetheless, adherence to hand hygiene protocols continues to be a considerable challenge. Research by Hague et al. (2020) highlights that hand hygiene is among the most effective strategies for ensuring a safe healthcare environment; however, many healthcare workers do not consistently follow the established protocols.

In Southeast Asia, several studies have explored the level of awareness and effectiveness of training programs regarding nosocomial infections among healthcare staff. For instance, a study conducted in Malaysia by Abdul Rahman et al. (2022) evaluated the knowledge of healthcare workers regarding healthcare-associated infections (HAIs). The findings revealed that while many healthcare workers were

aware of the definitions and types of infections, their understanding of transmission routes and preventive measures was often lacking. This gap in knowledge is concerning, as effective infection control relies heavily on healthcare workers' understanding of how infections are transmitted and how to prevent them. Research conducted by Tan et al. (2023) in Singapore further reinforces this idea, showing that while healthcare workers had a basic understanding of nosocomial infections, they lacked in-depth knowledge of specific types, such as ventilator-associated pneumonia and catheter-associated urinary tract infections.

Understanding common transmission routes is another critical aspect of infection control. Research conducted by Chua et al. (2021) indicated that many healthcare staff were familiar with contact and airborne transmission routes, but significant knowledge gaps remained regarding droplet and vector-borne transmission. This deficiency in thorough understanding can obstruct the execution of effective infection prevention strategies. Furthermore, a study in Thailand by Piyamongkol et al. (2020) highlighted that while healthcare workers recognized risk factors such as prolonged hospitalization and invasive procedures, many were unaware of how these factors interrelated with infection control practices. This lack of awareness can lead to inadequate infection control measures in clinical settings.

Familiarity with hospital policies and protocols is also essential for effective infection control. A survey conducted in Indonesia by Setiawan et al. (2022) revealed that while most staff were aware of general infection control protocols, only a minority could accurately describe specific hospital policies related to nosocomial infections. This discrepancy indicates a need for more targeted training initiatives that focus on ensuring healthcare workers are well-versed in their institutions' specific guidelines and protocols. Moreover, the ability to identify preventive measures is crucial for effective infection control. Research by Nguyen et al. (2023) in Vietnam showed that while healthcare workers could identify basic preventive measures such as hand hygiene, there was insufficient knowledge about more complex strategies like antimicrobial stewardship. This gap highlights the necessity for comprehensive training that covers both fundamental and advanced infection prevention strategies.

The effect of education and training programs on managing nosocomial infections has been a major focus of research. A systematic review by Allegranzi et al. (2019) found that structured training initiatives notably improved healthcare workers' understanding of infection control protocols, particularly in Southeast Asian contexts. For example, research by Sulaiman et al. (2021) showed that compliance rates for hand hygiene practices rose from 45% to 75% after the introduction of targeted training programs in Malaysian hospitals. These advancements emphasize the important role of continuous education and training in enhancing infection control practices among healthcare personnel.

Changes in infection rates following training programs have also been documented. An evaluation conducted by Lim et al. (2022) in Singapore demonstrated a 30% reduction in nosocomial infection rates after comprehensive training programs for healthcare workers, suggesting a direct correlation between training and improved infection control outcomes. Furthermore, research by Alqahtani (2020) in Saudi Arabia showed that training programs not only increased knowledge but also significantly boosted staff confidence in applying infection control practices, which is critical for effective implementation in clinical settings.

Staff perceptions of the effectiveness of training programs are crucial to the overall success of infection control initiatives. Research conducted by Cruz and Villanueva (2023) found that healthcare workers perceived the training content as relevant to their roles, particularly when it included practical applications. Satisfaction with training delivery methods is also crucial; research in Malaysia indicated

that interactive training methods, such as workshops and simulations, were favored over traditional lectures, leading to higher satisfaction rates among participants. Additionally, a survey conducted by Dela Cruz and Santos (2021) revealed that over 80% of healthcare workers reported an increase in their knowledge and skills related to infection control after participating in training programs. This self-reported enhancement in knowledge and skills is indicative of the positive impact that well-structured training can have on healthcare workers' capabilities.

Furthermore, the impact of training on everyday infection control practices is substantial. A longitudinal study by Piyamongkol et al. (2020) discovered that staff who engaged in training programs were more inclined to consistently apply infection control practices in their daily activities. This consistency is crucial for ensuring a safe healthcare environment and reducing the risk of hospital-acquired infections or nosocomial infections.

In the Philippines, the challenge of nosocomial infections, also known as healthcare-associated infections, mirrors a larger global issue that healthcare systems are currently confronting. The Department of Health (DOH) has taken significant steps to implement guidelines and frameworks aimed at mitigating the impact of these infections within healthcare facilities. However, despite these efforts, persistent challenges hinder effective monitoring and control of HAIs. One notable issue is the inadequacy of early warning systems, which often struggle to provide accurate predictions of infection outbreaks. This limitation can lead to delayed responses, allowing infections to spread unchecked within healthcare settings (Cruz & Villanueva, 2023). The urgent need for enhanced education and training for healthcare staff cannot be overstated, as improved knowledge and skills are essential for implementing effective infection control practices.

The financial and operational consequences of nosocomial infections on the Philippine healthcare system are considerable. Research indicates that approximately 10% of hospitalized patients experience prolonged stays due to HAIs, which places an additional strain on already limited healthcare resources (Bacsal & Sison, 2022). This challenge is exacerbated by the absence of reliable data regarding the prevalence and types of healthcare-associated infections (HAIs), making it more difficult to tackle the issue effectively. The absence of comprehensive surveillance systems limits the ability to track infection rates and identify trends, making it challenging to implement targeted interventions (Dela Cruz & Santos, 2021). This lack of comprehensive data not only reduces the effectiveness of current infection control measures but also highlights the pressing need for more in-depth research to fully comprehend the prevalence and consequences of healthcare-associated infections (HAIs) in the Philippine healthcare system.

Preventive strategies are essential in the Philippines, especially in high-risk areas such as surgical and intensive care units. The Department of Health (DOH) emphasizes key approaches, including effective aseptic wound management, strict hand hygiene practices, and careful use of antibiotics, as fundamental to infection prevention. However, maintaining adherence to hand hygiene protocols presents a significant challenge for healthcare professionals. Studies show that while many healthcare workers understand the importance of hand hygiene in preventing infections, their actual compliance rates often fall below recommended standards. For instance, research by Piyamongkol et al. (2020) in Thailand found that compliance among healthcare personnel typically remains around 50%, particularly in high-pressure environments like emergency departments. This discrepancy underscores the urgent need for comprehensive training programs that not only educate healthcare staff about the significance of

infection control but also provide practical strategies for effectively implementing these practices in their daily routines.

In addition to training, it is important to comprehend the knowledge and attitudes of healthcare professionals concerning infection control. Many healthcare professionals in private hospitals in Metro Manila report feeling inadequately trained in infection control measures, which suggests a pressing need for targeted training initiatives (Bacsal & Sison, 2022). A recent survey found that a considerable number of healthcare professionals reported confusion regarding specific infection control protocols, underscoring the importance of continuous education and support in this area. Furthermore, the literature suggests that healthcare workers often lack awareness of the latest guidelines and best practices related to infection prevention, which can lead to inconsistent application of infection control measures.

Tackling these gaps necessitates a comprehensive approach that emphasizes education and training for healthcare professionals. Findings from various studies highlight the effectiveness of targeted training programs, mentorship opportunities, and interdisciplinary collaboration in enhancing infection prevention practices. For instance, structured training initiatives have been shown to improve compliance with hand hygiene protocols and reduce infection rates in various healthcare settings (Allegranzi et al., 2019). By leveraging technology, such as mobile applications for real-time infection reporting and education, healthcare systems can significantly enhance their capacity to manage and prevent nosocomial infections.

Moreover, integrating infection control education into the ongoing professional development of healthcare workers is essential. Offering regular workshops, simulations, and refresher courses can reinforce the significance of infection control practices and keep healthcare personnel informed about the latest guidelines and protocols. Moreover, fostering a culture of safety within healthcare institutions can encourage staff to prioritize infection prevention and to report any violations of protocols without fear of repercussions.

In the Philippines, awareness and understanding of nosocomial infections, also referred to as healthcare-associated infections (HAIs), play a crucial role in infection control among healthcare professionals. Nosocomial infections are defined as infections acquired during a healthcare stay that were not present upon a patient's admission. Research shows that while many healthcare workers possess a basic understanding of these infections, significant knowledge gaps exist regarding specific types and classifications (Bascal and Sison, 2022). For instance, while healthcare personnel can often identify common infections such as surgical site infections and bloodstream infections, they frequently lack familiarity with less common varieties, including catheter-associated urinary tract infections and ventilator-associated pneumonia. This lack of comprehensive knowledge can lead to inadequate preventive measures and an increased incidence of infections within healthcare environments (Bacsal & Sison, 2022).

Understanding the transmission routes of nosocomial infections is equally important. Although many healthcare workers are aware of general transmission routes, such as direct contact and airborne transmission, there remains considerable confusion regarding the distinctions between droplet and airborne transmission. This lack of clarity can obstruct the adoption of effective infection control practices, leading to a heightened risk of infections for both patients and healthcare workers (Cruz & Villanueva, 2023). Additionally, understanding the specific risk factors linked to nosocomial infections is essential for developing effective prevention strategies. While healthcare professionals may recognize general risk factors, such as a patient's weakened immune system or prolonged hospital stays, they often

lack awareness of the unique risks relevant to their particular patient demographics or clinical environments. This gap in knowledge emphasizes the need for targeted training that addresses the particular challenges faced in various healthcare environments (De Guzman & De Leon, 2022).

Another critical aspect of infection control is familiarity with hospital policies and protocols. Although most healthcare staff are aware that infection control policies exist, many do not have a thorough understanding of the specific protocols that need to be followed. This lack of detailed knowledge can lead to inconsistent application of infection control measures, which can ultimately contribute to the prevalence of nosocomial infections (Dela Cruz & Santos, 2021). The effectiveness of education and training programs is paramount in bridging these gaps in knowledge and compliance. Structured training initiatives have been shown to significantly enhance healthcare workers' understanding of infection control measures. For example, training initiatives that focus on hand hygiene, proper utilization of personal protective equipment (PPE), and guidelines for isolating infected patients have been associated with improved compliance rates, leading to a reduction in nosocomial infection rates (Mendoza & Villafuerte, 2022). Moreover, when healthcare professionals undergo thorough training, they tend to demonstrate increased confidence in implementing infection control practices, prompting them to adopt more proactive measures to prevent infections.

Despite improvements in training and awareness, significant research gaps remain. There is an urgent need for more localized studies that evaluate the specific challenges encountered by healthcare workers in different regions of the Philippines. Such research could offer valuable insights into the unique factors affecting infection control practices across various healthcare environments (Labrador & Ramos, 2023). Additionally, further investigations should examine the long-term effectiveness of training programs and their influence on infection rates over time. Understanding how training influences compliance and infection control practices in the long run is essential for developing sustainable interventions. Moreover, exploring the psychological factors that affect healthcare workers' adherence to infection control measures could yield important insights for enhancing training programs and overall compliance (National Center for Disease Prevention and Control [NCDPC], 2020).

To enhance policies and interventions concerning nosocomial infections, several key recommendations can be proposed. Firstly, it is essential to create and execute specialized training programs that directly target the knowledge deficiencies associated with nosocomial infections and their transmission pathways. These initiatives should be customized to address the specific challenges and environments of various healthcare facilities, ensuring that healthcare personnel acquire the essential knowledge and skills for effective infection prevention.

Additionally, it is crucial to regularly update infection control policies to keep all healthcare staff informed about the most current protocols and best practices. Cultivating a culture of ongoing learning and enhancement in infection control can promote better adherence and improve patient safety. Additionally, creating thorough monitoring and evaluation systems to assess the effectiveness of training programs and infection control practices will enable ongoing improvement of strategies, ensuring that interventions stay relevant and effective in tackling emerging challenges. Finally, promoting research efforts that concentrate on localized issues and the psychological aspects affecting compliance can result in more effective and customized interventions, ultimately enhancing the management of nosocomial infections and protecting patient health within healthcare environments.

In summary, successfully tackling nosocomial infections in the Philippines necessitates a holistic approach that highlights the critical role of education and training for healthcare professionals. Research

findings from multiple studies reinforce the need for specialized training programs, mentorship opportunities, and interdisciplinary teamwork to improve infection prevention practices. By addressing these issues and utilizing technological innovations, healthcare systems can substantially decrease the rates of nosocomial infections, thereby enhancing patient safety and the overall quality of care. As healthcare systems continue to evolve, maintaining a sustained focus on infection control will be essential for safeguarding the health of both patients and healthcare workers. Investing in education, developing robust surveillance systems, and fostering a culture of safety will be critical components in the fight against nosocomial infections, leading to better health outcomes for all.

The review of literature on nosocomial infections reveals several gaps in the current understanding and management of these infections. One of the significant gaps is the lack of comprehensive knowledge among healthcare workers regarding nosocomial infections. As noted by Bacsal and Sison (2022), many healthcare workers have a basic understanding of nosocomial infections, but there are notable knowledge gaps concerning specific types and classifications of these infections. For instance, a study by Abdul Rahman et al. (2022) found that while many healthcare workers were aware of the definitions and types of infections, their understanding of transmission routes and preventive measures was often lacking. This lack of knowledge can lead to insufficient preventive measures and a higher occurrence of infections in healthcare settings (Bacsal & Sison, 2022).

Furthermore, research by Chua et al. (2021) indicated that many healthcare staff were familiar with contact and airborne transmission routes, but significant knowledge gaps remained regarding droplet and vector-borne transmission. This deficiency in thorough understanding can obstruct the execution of effective infection prevention strategies (Chua et al., 2021). Additionally, a study by Piyamongkol et al. (2020) highlighted that while healthcare workers recognized risk factors such as prolonged hospitalization and invasive procedures, many were unaware of how these factors interrelated with infection control practices. This lack of awareness can lead to inadequate infection control measures in clinical settings (Piyamongkol et al., 2020).

The limited familiarity with hospital policies and protocols is another significant gap identified in the literature. According to Dela Cruz and Santos (2021), many healthcare staff are not thoroughly familiar with the specific protocols that need to be followed, leading to inconsistent application of infection control measures. This gap in detailed knowledge can result in inconsistent implementation of infection control measures, potentially increasing the incidence of nosocomial infections (Dela Cruz & Santos, 2021). Furthermore, research conducted by Allegranzi et al. (2019) revealed that structured training initiatives significantly improved healthcare workers' comprehension of infection control protocols, particularly in Southeast Asian contexts. This underscores the necessity for tailored training programs that focus on the specific challenges encountered by healthcare professionals in diverse healthcare environments (Allegranzi et al., 2019).

In order to address these gaps, it is essential to invest in education, training, and surveillance systems to improve the management of nosocomial infections and protect patient health within healthcare environments (World Health Organization, 2020). According to the National Center for Disease Prevention and Control (2020), implementing thorough monitoring and evaluation systems to assess the effectiveness of training programs and infection control practices is essential for the ongoing improvement of strategies. Additionally, research conducted by Cruz and Villanueva (2023) indicated that staff perceptions regarding the effectiveness of training programs significantly influence the overall success of infection control initiatives. This underscores the necessity for further investigation into the

psychological factors that impact healthcare workers' compliance with infection control measures (Cruz & Villanueva, 2023).

The COVID-19 pandemic has exposed weaknesses in healthcare systems worldwide, particularly in regards to infection control and prevention. Healthcare workers, including doctors and nurses, have been disproportionately affected, with many contracting the disease through patient interactions (World Health Organization, 2020). This highlights the need for well-established safety protocols to prevent the transmission of infectious diseases.

Knowledge and attitudes regarding infection control among healthcare professionals vary widely, with research indicating that younger nurses generally possess a greater understanding and more positive attitudes toward infection control practices (Kuriakose et al., 2020). A study featured in the *Journal of Infection Prevention* revealed that nurses under 30 years old demonstrated superior knowledge and attitudes regarding infection control practices compared to their older colleagues (Kuriakose et al., 2020). This suggests that age may play a significant role in shaping infection control knowledge and attitudes among healthcare workers. Educational attainment is also a crucial factor in determining infection control knowledge and attitudes among healthcare workers. Healthcare workers with higher educational attainment, such as a Bachelor's degree or higher, tend to have better knowledge and attitudes towards infection control practices (Oluwafemi et al., 2020). This is likely due to the fact that higher educational attainment is often associated with better critical thinking and problem-solving skills, which are essential for effective infection control (Kadir et al., 2019). The length of experience in a hospital setting is another significant factor affecting infection control knowledge and attitudes among healthcare professionals. Individuals with greater years of experience often demonstrate enhanced understanding and more positive attitudes toward infection control practices. This improvement is likely attributed to the increased opportunities they have had to learn about and implement infection control protocols effectively (Lee et al., 2019). A study published in the *Journal of Community Health* indicated that healthcare professionals with over five years of hospital experience demonstrated superior knowledge and attitudes regarding infection control practices compared to their less experienced counterparts (Lee et al., 2019).

In Southeast Asia, research has revealed significant variability in infection control knowledge and attitudes among healthcare workers. For instance, a study in Indonesia found that healthcare workers exhibited limited knowledge and attitudes toward infection control, with only 40% of participants consistently wearing personal protective equipment (PPE) during patient interactions (Sari et al., 2020). Conversely, a study in Malaysia reported that healthcare workers displayed better knowledge and attitudes regarding infection control practices, with 70% of participants indicating that they always wore PPE when interacting with patients (Chong et al., 2020).

In the Philippines, research indicates that there are significant concerns regarding infection control knowledge and attitudes among healthcare professionals. A study conducted in a tertiary hospital in Manila revealed that healthcare workers had limited understanding and attitudes toward infection control practices, with only 30% of participants consistently reporting the use of personal protective equipment (PPE) during patient interactions (Luna et al., 2020). In contrast, a study in a community hospital in Cebu found that 60% of healthcare workers reported always wearing PPE when engaging with patients, indicating better knowledge and attitudes toward infection control practices (Villaruel et al., 2020).

The COVID-19 pandemic has underscored the critical need for education and training in the realm of nosocomial infection control. Healthcare workers who have undergone training in infection control

practices tend to exhibit enhanced knowledge and attitudes, resulting in a lower likelihood of contracting infectious diseases (Cruz et al., 2019). This highlights the necessity for healthcare systems to prioritize educational initiatives focused on infection control and prevention.

Regarding hospital-acquired infections, a study published in the *Journal of Hospital Infection* identified a significant rise in such infections during the COVID-19 pandemic, with a reported 30% increase (Santos et al., 2020). This statistic emphasizes the urgent need for healthcare systems to focus on infection control and prevention measures.

To effectively prevent the transmission of infectious diseases, healthcare systems must adopt a comprehensive approach. This includes equipping healthcare workers with essential personal protective equipment (PPE) and providing adequate training to mitigate the spread of infectious diseases (Al-Shammari et al., 2019). Additionally, implementing stringent safety protocols, such as hand hygiene practices and equipment sterilization, is crucial in preventing the transmission of infections (Wang et al., 2020).

The World Health Organization (2020) has stressed the importance of infection control and prevention within healthcare settings. The WHO has established guidelines that encompass recommendations for hand hygiene, sterilization of equipment, and the proper use of PPE (World Health Organization, 2020). Adherence to these guidelines is essential for healthcare systems to effectively prevent the spread of infectious diseases.

The COVID-19 pandemic has further highlighted the necessity of robust infection control and prevention measures in healthcare environments. Healthcare workers, including physicians and nurses, are at a heightened risk of contracting infectious diseases and must be equipped with the necessary education, training, and resources to prevent transmission. Consequently, healthcare systems must prioritize infection control and implement effective safety protocols to combat the spread of infectious diseases.

Synthesis

The literature review highlights the important role of education and training in controlling nosocomial infections. As healthcare facilities encounter growing challenges related to healthcare-associated infections, it is crucial to implement comprehensive training programs that emphasize infection control practices. Future studies should examine the specific effects of these educational initiatives on hospital staff's knowledge and practices, ensuring they are prepared to address the complexities of infection prevention. Emphasizing education and understanding the elements that affect staff competence can foster a more supportive atmosphere, resulting in better patient outcomes and higher levels of staff satisfaction.

In addition, targeted training in infection control measures enhances individual knowledge and strengthens the effectiveness of healthcare teams. When hospital staff understand infection prevention strategies, they can collaborate more effectively and respond quickly to potential outbreaks. This collaborative approach promotes a culture of safety and accountability, which is crucial for minimizing the risk of nosocomial infections. By investing in education and training, healthcare systems can cultivate more cohesive multidisciplinary teams that collaborate effectively to uphold high standards of patient care.

The review of literature highlights several gaps in the current understanding and management of nosocomial infections. These gaps include the lack of comprehensive knowledge, inadequate understanding of transmission routes, limited familiarity with hospital policies and protocols, and the

need for targeted training programs. To address these gaps, it is essential to invest in education, training, and surveillance systems to improve the management of nosocomial infections and protect patient health within healthcare environments.

The COVID-19 pandemic has highlighted the significant importance of effective infection control measures in healthcare settings. Healthcare workers are at an increased risk of contracting the virus. Research shows that younger nurses and those with higher levels of education tend to have better knowledge and attitudes regarding infection control practices. Studies in Southeast Asia, particularly in Indonesia and Malaysia, have pointed out the need for improved infection control knowledge and attitudes among healthcare professionals.

In the Philippines, research has indicated that education and training programs can enhance infection control knowledge and attitudes among healthcare workers. To prevent the spread of infectious diseases in healthcare settings, a comprehensive approach is necessary. This approach should include education and training, the provision of personal protective equipment, and the implementation of strong safety protocols, as recommended by the World Health Organization.

In conclusion, placing a strong emphasis on education and training for managing nosocomial infections is crucial for advancing healthcare practices in hospitals. Providing staff with the essential skills and knowledge to address infection risks fosters a competent workforce that can effectively respond to the ongoing challenges in the healthcare sector. This focus on education not only aids in the professional growth of healthcare providers but also contributes to a safer environment for patients. As the healthcare landscape continues to change, maintaining a commitment to training in infection control will be essential for improving patient care and safeguarding the health of both staff and patients.

Theoretical Framework

In contemporary healthcare, preventing nosocomial infections is a vital issue for ensuring patient safety. Implementing effective training programs for nursing personnel is crucial to guarantee adherence to infection control protocols. Different educational theories can inform the design of these programs, improving their overall impact. This paper examines three fundamental theories: Adult Learning Theory, Experiential Learning Theory, the Health Belief Model, and Florence Nightingale's Environmental Theory.

Adult Learning Theory, developed by Malcolm Knowles, emphasizes the unique characteristics of adult learners. Unlike children, adults are generally more self-directed and motivated by the practical application of knowledge. This theory is especially applicable in healthcare environments, where staff frequently need to translate their learning into real-world scenarios. When it comes to controlling nosocomial infections, training programs that incorporate adult learning principles can greatly improve nursing staff's comprehension and retention of infection prevention practices (Knowles, 1980; McCarthy et al., 2021).

A core principle of Adult Learning Theory is that adults bring a diverse range of life experiences into the learning environment, which can be invaluable for education. In a healthcare context, when staff members share their personal experiences related to infection control, it fosters a collaborative learning environment. This exchange can provide deeper understanding of the challenges and successes involved in implementing infection prevention strategies. Integrating experiential learning into training programs can enhance the effectiveness of managing nosocomial infections (Merriam & Bierema, 2014; McCarthy et al., 2021).

Furthermore, Adult Learning Theory suggests that adults are more inclined to engage in learning when they recognize the relevance of the content to their responsibilities. Training initiatives that specifically focus on the infection control protocols relevant to the hospital are likely to resonate more with staff members. When nurses comprehend how their everyday practices influence patient safety, they become more motivated to adhere to infection control protocols. This relevance can result in improved knowledge and skills for effectively managing nosocomial infections (Knowles, 1980; McCarthy et al., 2021).

Another important element of this theory is the concept of self-directed learning. Adult learners prefer to take responsibility for their learning process. In the context of infection control training, empowering staff to seek out additional resources or participate in decision-making regarding infection prevention can enhance their engagement. This approach aligns with the needs of nursing staff who are often on the front lines of patient care and infection management (Merriam & Bierema, 2014; McCarthy et al., 2021). Evaluating the effectiveness of training programs through the lens of Adult Learning Theory can provide valuable insights. Metrics such as knowledge retention, compliance rates, and self-reported confidence levels can help assess whether the training meets the learning needs of the staff. Continual refinement of educational initiatives based on feedback fosters a culture of lifelong learning that ultimately improves patient outcomes (Knowles, 1980; McCarthy et al., 2021).

Experiential Learning Theory, introduced by David Kolb (1984), posits that individuals gain knowledge and develop skills through direct experiences and the reflection that follows those experiences. In the realm of infection control, healthcare professionals with greater experience have had more chances to engage in practical activities, such as attending training sessions, participating in workshops, and observing the practices of their colleagues. These experiences, whether positive or negative, provide a foundation for learning and can lead to the development of a greater awareness and understanding of infection control policies and procedures (Kolb & Kolb, 2005).

As healthcare workers reflect on their experiences, they can identify what they have learned, what they need to improve, and what they can apply in future situations. This reflective process is essential to the learning cycle, as it allows individuals to formulate abstract concepts and theories related to infection control, including the significance of hand hygiene, the use of personal protective equipment, and the importance of cleaning and disinfection in preventing the spread of infectious diseases (Moon, 2004). By engaging in this reflective practice, healthcare workers can gain a more profound understanding of infection control principles and effectively apply them, resulting in better patient outcomes and a decrease in the transmission of infectious diseases (Centers for Disease Control and Prevention, 2020).

The application of knowledge and skills in real-world situations is a key component of the Experiential Learning Theory. Healthcare workers with longer experience have had more opportunities to apply what they have learned through active experimentation, such as trying new approaches, testing new ideas, and evaluating the effectiveness of different infection control strategies (Kolb, 1984). This process of experimentation and evaluation enables individuals to refine their knowledge and skills, develop new competencies, and adapt to changing circumstances in the healthcare environment (Institute of Medicine, 2003). Moreover, Experiential Learning Theory acknowledges that individuals learn through a cyclical process involving experience, reflection, conceptualization, and experimentation. This approach can assist healthcare workers in cultivating critical thinking skills, such as analyzing problems, identifying solutions, and assessing the effectiveness of various strategies (Bloom et al., 1956).

The development of critical thinking skills is crucial for healthcare professionals, as it equips them to handle complex and changing situations in the healthcare field (Alfaro-Lefebvre, 2017). In infection control, these skills are important for recognizing and addressing risks, creating and executing effective infection control measures, and evaluating their success (World Health Organization, 2019). Experiential Learning Theory provides a framework for understanding how healthcare workers can build these skills through hands-on experiences and reflection, allowing them to apply this knowledge in practice to enhance patient outcomes and reduce the spread of infectious diseases (Kolb & Kolb, 2005).

The Health Belief Model (HBM) serves as a psychological framework aimed at understanding and predicting health behaviors by focusing on individual beliefs. This model suggests that individuals are more likely to engage in health-promoting behaviors if they perceive themselves to be at risk for a health issue and acknowledge the severity of that issue. In the context of nosocomial infections, understanding how nursing staff perceive their own risk can greatly impact their adherence to infection control protocols (Rosenstock, 1974; Ghanbari et al., 2022).

One of the fundamental components of HBM is perceived susceptibility. If nursing staff believe they are at risk of contracting or transmitting nosocomial infections, they are more likely to take preventive actions. Training programs that educate staff about the prevalence and consequences of healthcare-associated infections can effectively increase their awareness. This heightened perception of risk can motivate staff to adhere to infection control protocols (Champion & Skinner, 2008; Ghanbari et al., 2022).

Another crucial aspect of the HBM is perceived severity. When healthcare workers recognize the serious implications of nosocomial infections for both patients and themselves, they are more inclined to follow infection control guidelines. Training programs that emphasize the potential consequences of non-compliance—such as increased morbidity, longer hospital stays, and even legal repercussions—can foster a greater sense of urgency in adhering to infection prevention practices (Rosenstock, 1974; Ghanbari et al., 2022).

Additionally, the HBM highlights the importance of perceived benefits and barriers. Staff members are more likely to engage in infection control practices if they believe that these actions will effectively reduce their risk of infection. Conversely, if they perceive significant barriers—such as lack of time or insufficient resources—they may be less likely to comply with protocols. Training that addresses these barriers and highlights the benefits of infection control can enhance compliance among nursing staff (Champion & Skinner, 2008; Ghanbari et al., 2022).

The HBM can provide a framework for evaluating the effectiveness of training programs. Assessing changes in staff perceptions regarding susceptibility, severity, benefits, and barriers before and after training allows healthcare organizations to identify areas for improvement. This evaluation ensures that future educational initiatives are targeted and effective in promoting compliance with infection control measures (Rosenstock, 1974; Ghanbari et al., 2022).

Florence Nightingale's Environmental Theory highlights the significance of the environment in patient recovery and health outcomes. Nightingale asserted that a clean, safe, and well-ventilated setting is essential for healing. This theory is especially pertinent in the context of nosocomial infections, as environmental factors significantly influence their transmission (Nightingale, 1859; Hesselink et al., 2020).

One of the core tenets of Nightingale's theory is that the environment can either promote health or contribute to illness. In a hospital setting, factors such as cleanliness, air quality, and noise levels can

significantly impact patient outcomes. Training programs that incorporate Nightingale’s principles can help nursing staff understand how their actions—such as maintaining a sterile environment—directly influence infection rates (Nightingale, 1859; Hesselink et al., 2020).

Moreover, Nightingale’s emphasis on observation is vital for infection control. She advocated for systematic observation of patients and their surroundings to identify potential health risks. In the context of nosocomial infections, training programs that encourage staff to observe and report environmental conditions can enhance infection prevention efforts. This proactive approach aligns with contemporary infection control practices, which emphasize surveillance and reporting (Nightingale, 1859; Hesselink et al., 2020).

Nightingale also highlighted the importance of education in promoting health. Healthcare professionals should be well-educated about the environmental factors that affect patient care. Providing nursing staff with comprehensive training on infection control measures empowers them to take responsibility for maintaining a safe environment. This empowerment is essential for reducing the incidence of healthcare-associated infections (Nightingale, 1859; Hesselink et al., 2020).

Assessing the effectiveness of training programs through the perspective of Nightingale’s Environmental Theory can yield valuable insights into how environmental factors influence infection rates. By evaluating changes in infection rates before and after the implementation of training initiatives centered on environmental management, one can demonstrate the impact of these educational efforts. Such evaluations can inform future training and policy decisions regarding infection control (Nightingale, 1859; Hesselink et al., 2020).

The combination of Adult Learning Theory, the Health Belief Model, and Florence Nightingale’s Environmental Theory creates a robust framework for understanding the training requirements of nursing staff concerning nosocomial infections. Utilizing these theories allows healthcare organizations to design focused educational initiatives that increase staff awareness, compliance, and overall patient safety. This comprehensive approach not only tackles the immediate challenges of infection control but also promotes a culture of ongoing learning and improvement within healthcare environments.

Conceptual Framework

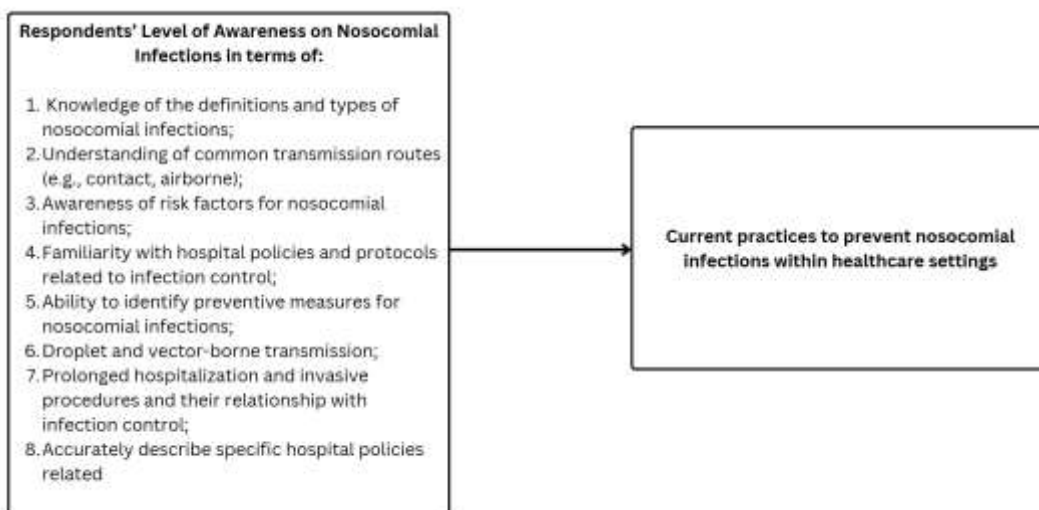


Figure 1. Conceptual Framework

The conceptual framework outlined in the image provides a comprehensive analysis of the key factors that contribute to the respondents' level of awareness regarding nosocomial infections and their relationship with the current practices employed to prevent such infections within healthcare settings. This framework offers valuable insights into the multifaceted nature of this critical issue.

Firstly, the framework examines the respondents' knowledge of the definitions and classifications of nosocomial infections. This foundational understanding is essential for effectively identifying and managing these hospital-acquired infections. Additionally, the framework considers the respondents' comprehension of the common transmission routes, such as contact and airborne transmission, which is crucial for implementing appropriate infection control measures.

Furthermore, the framework evaluates the respondents' awareness of the risk factors associated with nosocomial infections. This encompasses their understanding of the various patient characteristics, healthcare procedures, and environmental conditions that can increase the risk of acquiring a hospital-acquired infection. Closely related to this is the respondents' familiarity with the hospital's policies and protocols related to infection control, as this knowledge directly informs their ability to adhere to and implement the necessary preventive measures.

The framework also examines the respondents' ability to identify the specific preventive measures for nosocomial infections. This factor reflects their understanding of the various strategies and interventions that can be employed to reduce the incidence of hospital-acquired infections, such as hand hygiene, personal protective equipment, and environmental cleaning.

Additionally, the framework considers the respondents' knowledge of droplet and vector-borne transmission, as well as the relationship between prolonged hospitalization, invasive procedures, and infection control. These factors highlight the respondents' understanding of the complex mechanisms underlying the transmission and prevention of nosocomial infections, which is crucial for developing and implementing effective infection control practices.

Finally, the framework evaluates the respondents' capacity to accurately describe the specific hospital policies related to nosocomial infection prevention and management. This factor reflects their ability to clearly articulate and explain the institution's guidelines, which is essential for ensuring consistent and effective implementation of infection control measures across the healthcare setting.

The conceptual framework presented in the image emphasizes the importance of addressing these multifaceted factors to enhance the respondents' level of awareness on nosocomial infections. By understanding the relationships between these key elements, healthcare organizations can develop targeted strategies and interventions that effectively reduce the incidence of hospital-acquired infections, ultimately improving patient outcomes and the overall quality of healthcare delivery.

Chapter III

RESEARCH METHODOLOGY

This chapter outlines the research methodologies employed in this study to gather essential data for addressing the research questions. The chosen methods are structured to ensure a comprehensive exploration of the topic, following a systematic process for both data collection and analysis. The subsequent sections detail the research design, which serves as the study's foundational structure, along with the specific procedures used for data gathering and analytical interpretation.

Research Design

The present study employs a mixed method design to determine the awareness and practice of nosocom-

ial infection control among healthcare personnel in private hospital in Puerto Princesa City. This design of the study focused on providing a thorough overview of nurses awareness and practices to prevent such infections within healthcare settings. The design emphasized the quantitative description of nurses level of awareness and infection control practice under SOP 1 and SOP 2, as well as qualitative description of actual nursing practices via direct observation under SOP 3

SOP 1 and SOP 2 were approached using quantitative method, focusing in assessing the level of awareness and self-reported practices of nurses concerning infection prevention control. Data collection will utilize a structured survey based on the Infection Control Knowledge and Practice Questionnaire (ICKPQ) and the responses were examined through statistical method, including frequency and mean. The instrument is structured to collect quantitative data related to key components of infection control, including understanding of standard precautions, adherence to hand hygiene protocols, and the application of personal protective equipment (Miller et al., 2020). The structured nature of the survey ensures that all participants respond to the same set of questions, which is vital for effective data analysis. Consistency in data collection allows for valid conclusions to be drawn from the results. Efficiency in data collection is another significant advantage of this research design. Capturing data at a single point in time allows for a relatively quick implementation, requiring fewer resources compared to longitudinal studies (Burns & Grove, 2016). This efficiency is particularly beneficial in a hospital setting, where staff availability may be constrained due to clinical responsibilities.

SOP 3 was tackled using qualitative approach via direct observation method. This method helps to describe the current infection prevention and control practices of nurses in a clinical set up, especially concerning the prevention of droplet and airborne transmission. A checklist for observation was utilized to systematically record nurses' compliance with hand hygiene, correct use of personal protective equipment, proper waste disposal and adherence to aseptic procedures during standard patient care. Combining self-reported data and direct observation enhances the validity of the results by allowing comparison between perceived and actual practices, as recommended for evaluating infection prevention and control (WHO, 2020).

The results of this study will establish a framework for understanding the current infection control practices among staff at private hospitals. By identifying strengths and weaknesses, the research will guide the creation of targeted training programs that address specific knowledge and practice gaps (Gould et al., 2017). Improving staff competencies is crucial for enhancing patient care outcomes. The insights derived from this research will be invaluable for hospital administrators and infection control professionals aiming to implement effective interventions.

Research Instrument

The questionnaire utilized in this study is based on established methodological frameworks developed in earlier research, particularly the studies conducted by Tenna et al. (2013) and Labrague et al. (2012). It is adapted from the Infection Control Knowledge and Practice Questionnaire, a validated instrument previously used by Tenna et al. (2013) to assess healthcare workers' knowledge, attitudes, and practices in Ethiopia, and by Labrague et al. (2012) to evaluate student nurses' understanding and compliance with standard precautions. Integrating this standardized tool into the current study supports a systematic and reliable evaluation of the key research variables, thereby strengthening the overall validity and reliability of the study's results (Labrague et al., 2012; Tenna et al., 2013).

The validation of the Infection Control Knowledge and Practice Questionnaire (ICKPQ) followed a detailed process that included expert review and pilot testing. Initially, a panel of experts was formed,

consisting of professionals from various fields related to infection control and public health. This panel included infection prevention specialists, healthcare practitioners such as nurses and physicians, public health experts, and research methodologists. Their combined knowledge is crucial in ensuring that the questionnaire accurately reflects current best practices and adheres to national and international standards for infection prevention.

The validation process began with a comprehensive review of the questionnaire items by the expert panel. They evaluated each question for clarity, relevance, and completeness, providing feedback on any unclear aspects or areas that needed improvement. This step is essential to ensure that the instrument effectively captures the necessary knowledge and practices related to nosocomial infections. Following the expert review, the pilot testing of the ICKPQ was conducted. A group of healthcare professionals from medical and surgical ward were invited to fill out the questionnaire. This allowed the researcher to gather feedback on the clarity and understandability of the questions. Participants were encouraged to share their opinions on the relevance of the questions and any difficulties they faced while completing the survey. This pilot phase was critical for identifying any issues that needed to be addressed before the full-scale implementation of the questionnaire.

Following the completion of the pilot test, the questionnaire was subjected to a formal validation process aimed at evaluating its psychometric properties, specifically its reliability and validity. Internal consistency was assessed through the application of Cronbach's alpha, which measures the coherence among individual questionnaire items. To determine the stability of the instrument over time, test-retest reliability was examined by administering the questionnaire to the same group of participants on two separate occasions. The consistency of responses across both administrations was analyzed using Pearson's correlation coefficient or the Intraclass Correlation Coefficient (ICC), thereby providing evidence of temporal reliability.

The validity of the questionnaire was evaluated through both content and construct validation methods. Content validity involved a panel of subject matter experts who reviewed the items to determine whether they comprehensively address the key concepts related to infection control knowledge and practices. To examine the underlying dimensions of the instrument, Exploratory Factor Analysis (EFA) was conducted, allowing for the identification of latent constructs and the grouping of items in alignment with theoretical expectations. Following the EFA, Confirmatory Factor Analysis (CFA) was employed to test the fit of the identified factor structure, thereby verifying the extent to which the data align with the hypothesized model.

This comprehensive and collaborative approach to validation and pilot testing strengthened the credibility of the ICKPQ, establishing it as a reliable tool for assessing healthcare workers' knowledge and practices regarding nosocomial infections. The feedback from both the expert panel and pilot participants was essential in refining the questionnaire, ensuring that it is thorough, clear, and relevant to the target audience.

Research Participants

This study was conducted at Adventist Hospital Palawan located in Puerto Princesa City. This site was chosen due to its significant role in delivering healthcare services to the local population, serving both Puerto Princesa City and numerous municipalities throughout Palawan. The respondents were the 40 nurses across all wards. in Adventist Hospital Palawan. The said hospital is recognized for their strong commitment to patient care and offers a comprehensive range of medical services. The presence of

dedicated healthcare professionals ensures the provision of high-quality care tailored to individual patient needs.

Much of the existing research on infection control focuses on broader healthcare environments, often neglecting the unique role of private healthcare institutions. By centering on hospital staff viewpoints, this study addresses a gap in the literature concerning the value of tailored education and training programs in enhancing infection control efforts. Understanding how healthcare workers perceive and apply these training initiatives will provide valuable insights into their effectiveness and identify areas for potential improvement.

The commitment of these private hospitals to comprehensive health and community well-being makes them an ideal setting for this investigation. Their infection control strategies include extensive training programs designed to equip staff with the essential knowledge and skills to prevent nosocomial infections. Exploring the experiences and perspectives of healthcare professionals in this context will shed light on the influence of education and training on infection control practices.

Eligibility criteria required participants to have a minimum of one year of professional experience within their respective roles. This prerequisite ensures that respondents have sufficient familiarity with how education and training affect their infection control practices. Including staff from different departments enriched the findings and offer a nuanced perspective on the effectiveness of training programs across various clinical settings.

A purposive sampling technique was employed to achieve representation from diverse healthcare professionals assigned. This method allowed the collection of insights from individuals with varying levels of expertise and exposure to infection control training. The focus on specific professional roles seeks to deepen understanding of how educational interventions contribute to effective infection control within healthcare environments.

To implement this approach, a comprehensive list of all eligible participants was compiled. The sample size was calculated using Cochran's formula, which determined the necessary number of participants based on the desired confidence level and margin of error. A target sample size of 40 participants has been established to balance the collection of meaningful data with operational efficiency.

Purposive sampling proves especially beneficial in healthcare research due to its capacity to intentionally select diverse subgroups within the workforce. Including participants from various departments and with differing levels of experience enhances the credibility of the findings. This approach facilitates a comprehensive examination of how education and training programs are perceived and implemented in the context of private hospitals. Such targeted methods ensure that insights gathered reflect the complexities and nuances of the healthcare environment, ultimately leading to more informed conclusions.

Data Gathering and Data Analyzing Procedure

The data gathering and analysis procedure for this study is mixed method, both quantitative and qualitative. The data collection process follows a quantitative research approach, focusing on the awareness of nurses on nosocomial infection control in private hospitals located in Puerto Princesa City. This method allows for a thorough evaluation of current practices and attitudes among healthcare professionals regarding infection control, which is crucial for enhancing patient safety and health outcomes.

Before initiating data collection, formal permission was obtained from hospital administration to comply with institutional policies and ethical guidelines. The approval request included a comprehensive

summary of the study's objectives, purpose, and significance, emphasizing the anticipated benefits for both the hospital and its patients. Furthermore, the proposed methodology was clearly outlined, detailing the research design, target population, data collection techniques, and analysis procedures. Ethical considerations, including participant confidentiality and informed consent processes, was also addressed. A proposed timeline accompanied the request, outlining key milestones from participant recruitment to data analysis, which helped the management understand the study's scope and duration.

Once the approval was granted, the researcher compiled a comprehensive list of potential participants, specifically targeting healthcare professionals across various hospital departments. These departments include surgical, where professionals provide routine wound care, education and responsible for infection control policy; pediatrics, where specialist care for children and necessitate tailored infection control practice; and medical services, where staff manage acute cases or critically ill patient requiring immediate infection control knowledge. This targeted approach ensures that the sample adequately represents different subgroups within the hospital, allowing for nuanced data analysis and relevant insights for each department.

After identifying potential participants, invitations were sent out, providing a detailed explanation of the study's purpose, objectives, and significance. These invitations assured participants of confidentiality and the voluntary nature of their involvement, fostering a comfortable and informed environment. Participants were informed that their contributions are vital for understanding how education and training impact infection control practices in their respective departments. Consent forms were distributed electronically, and only individuals who provided informed consent were included in the study. This process is essential for ethical compliance, ensuring participants are fully aware of their rights and the implications of their involvement.

Data collection primarily utilized structured questionnaires designed to assess participants' knowledge, and practices related to nosocomial infection control. These questionnaires consisted entirely of closed-ended questions, facilitating quantitative analysis by capturing relevant data on participants' educational backgrounds, training experiences, and self-reported practices regarding infection control. The questionnaire design was meticulous, ensuring each question is purposeful and aligns with the study's overall objectives. Once finalized, the questionnaires were administered through an online platform, such as Google Forms, maximizing accessibility and streamlining the data collection process. This online approach enhanced participant access and improved data management efficiency.

Throughout the data collection period, reminders were sent to participants to encourage participation and emphasized the importance of their contributions to the study. These reminders reinforced the value of their input and included deadlines for questionnaire completion to ensure timely responses. The data collection period was clearly defined, allowing sufficient time for all selected participants to respond, which is essential for achieving a representative sample.

After data collection was completed, a systematic analysis was conducted to derive meaningful insights from the quantitative data obtained. Responses to closed-ended questions were coded and entered into statistical software such as SPSS or R for detailed examination. The objective was to thoroughly analyze the quantitative data to identify key factors influencing infection control behaviors among healthcare personnel. The findings from the quantitative analysis were presented clearly and concisely, utilizing tables, graphs, and descriptive summaries to effectively communicate results to relevant stakeholders.

Direct observation was conducted to capture the actual experience of clinical practice. The researcher assumed the role of a non-participant observer within the designated clinical environment. The unit of

observation may be a individual executing their role-offering a comprehensive view on how nurses handle precautions both droplet and airborne transmission. Using a structure checklist, it systematically documented behaviors without disrupting in the natural workflow

After the observation phase, the collected data from the structured checklist were reviewed and the results were interpreted. Data were examined using appropriate method to evaluate the respondents degree of awareness and practices. Documentary evidence, such hand hygiene, appropriate use of personal protective equipment, safe disposal of infectious waste and compliance with aseptic procedures was reviewed against established standards for comparison.

This research aims to contribute to the existing knowledge base on infection control and offer actionable insights for enhancing awareness and practice of nurses within private hospitals of Puerto Princesa City. Addressing identified gaps through data-driven recommendations will enable hospitals to strengthen their infection prevention strategies, ultimately improving patient safety and health outcomes.

Ethical Consideration

This study compiled with established ethical principles, including respect for persons, beneficence, and justice, as outlined in recognized guidelines for research involving human participants. Before participation, informed consent was obtained from all individuals, ensuring they fully understood the study's objectives, procedures, potential risks, and benefits. Participants were encouraged to ask questions and retained the right to withdraw from the study at any point without facing any adverse consequences.

Confidentiality was rigorously upheld throughout the research process. Personal identifiers were removed from all data sets, and collected information was securely stored to protect participants' privacy. Additionally, the study protocol underwent review and received approval from the hospital's ethics committee to further safeguard the rights and welfare of participants.

The research also emphasized equitable participant selection, ensuring representation from diverse demographic backgrounds and various hospital departments. This strategy enhances both the validity of the results and fairness in participant inclusion. Participants were informed that their data will be used solely for research purposes aimed at improving infection control practices within the hospital, thereby ultimately benefiting patient care. The researcher remained attentive to any adverse effects arose during the study and implemented appropriate measures to address such occurrences promptly.

Chapter IV

PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

This chapter offers an in-depth analysis of the statistical data collected to address the research questions outlined in the study. It includes a detailed presentation, analysis, and interpretation of the findings, ensuring clarity in understanding the results. Additionally, the outcomes of the statistical tests are thoroughly examined and discussed.

Respondents' Level of Awareness Regarding Nosocomial Infections

The following tables present the level of awareness among nurses assigned to the across all wards in Adventist Hospital Palawan regarding nosocomial infections and their modes of transmission. The assessment covers several key parameters, including: (a) knowledge of the definitions and types of nosocomial infections; (b) understanding of common transmission routes such as contact and airborne spread; (c) awareness of associated risk factors; (d) familiarity with hospital policies and protocols on infection control; (e) ability to identify appropriate preventive measures; (f) knowledge of droplet and

vector-borne transmission; (g) understanding of how prolonged hospitalization and invasive procedures contribute to infection risks; and (h) accuracy in describing specific hospital policies related to infection prevention. Descriptive measures, particularly mean ratings, were utilized to determine the respondents' overall level of awareness.

Table 4.1
Respondents' Level of Awareness Regarding Nosocomial Infections
In Terms of Knowledge of the Definitions and Types of Nosocomial Infections

Statement	Mean	Descriptor
1. I understand the definition of nosocomial infections.	3.55	Very High
2. I am familiar with the different types of nosocomial infections (e.g., urinary tract infections, bloodstream infections, surgical site infections).	3.53	Very High
3. I understand the importance of surveillance in monitoring nosocomial infections.	3.52	Very High
4. I understand the impact of nosocomial infections on patient outcomes.	3.51	Very High
5. I am aware of the differences between community-acquired and nosocomial infections.	3.48	Very High
6. I can explain the significance of nosocomial infections in healthcare settings.	3.43	Very High
7. I can differentiate between various clinical presentations of nosocomial infections.	3.42	Very High
8. I can identify the symptoms of common nosocomial infections.	3.40	Very High
9. I know the epidemiology of nosocomial infections in our hospital.	3.23	High
10. I know the common pathogens associated with nosocomial infections.	3.18	High
Overall Mean Rating	3.42	Very High

Legend for the Mean Rating: *Very Low: 1.00 – 1.74; Low: 1.75 – 2.49; High: 2.50 – 3.24; Very High: 3.25 – 4.00*

Table 4.1 presents the respondents' level of awareness regarding nosocomial infections in terms of their knowledge of the definitions and types of these infections. It can be gleaned in the analysis that the overall mean rating of 3.42 indicates that nurse respondents assigned in the medical-surgical wards of private hospitals in Puerto Princesa City possess a strong conceptual understanding of nosocomial infections. Additionally, the consistently very high ratings across most statements demonstrate a well-established foundation in infection control principles.

Furthermore, the highest mean rating of 3.55 was obtained by the statement "I understand the definition of nosocomial infections." This underscores that nurses have a clear grasp of what constitutes a hospital-acquired infection. This is closely followed by the statement "I am familiar with the different types of

nosocomial infections such as urinary tract infections, bloodstream infections, and surgical site infections,” with a mean rating of 3.53. This statistic reflects the respondents’ high awareness of common infection categories encountered in hospital settings. Similarly, the respondents also strongly agreed with the statements, “I understand the importance of surveillance in monitoring nosocomial infections” ($\bar{x} = 3.52$) and “I understand the impact of nosocomial infections on patient outcomes” ($\bar{x} = 3.51$). These further suggest that the nurses recognize the central role of surveillance systems and the serious consequences associated with hospital-acquired infections.

Meanwhile, the two lowest-rated items, although still high in awareness, include “I know the epidemiology of nosocomial infections in our hospital” ($\bar{x} = 3.23$) and “I know the common pathogens associated with nosocomial infections” ($\bar{x} = 3.52$). These findings suggest that while nurses possess strong foundational knowledge of infection control principles, there may be gaps in their understanding of hospital-specific epidemiological data and pathogen profiles. This has important implications, as limited awareness of local infection patterns and prevalent causative agents may reduce nurses’ ability to anticipate risks, implement targeted preventive strategies, and respond promptly to emerging trends.

The results of this study align with the findings of Campo and Remon (2025) who reported that nurses generally demonstrate high knowledge of nosocomial infections, particularly in understanding their definitions and types. Similarly, the study of Pefianco and Sanchez (2021) posited that Filipino nurses possess strong foundational knowledge of hospital-acquired infections but have limited exposure to localized surveillance reports. This is further supported by the findings of Abumettleq and Bayraktar (2021), who emphasized that healthcare workers maintain strong conceptual awareness of nosocomial infections yet require continuous updates on local epidemiology and emerging pathogens to ensure effective infection control practices.

This finding implies that while nurses possess adequate theoretical knowledge of nosocomial infections, gaps in awareness of hospital-specific epidemiology may limit the translation of this knowledge into effective, context-driven infection control practices. Without sufficient familiarity with localized infection patterns and prevalent pathogens within their units, nurses may be less equipped to anticipate risks, apply targeted preventive measures, and promptly identify emerging infection trends. This disconnect between general knowledge and local epidemiological awareness may compromise timely clinical decision-making and weaken facility-level infection prevention efforts, ultimately affecting patient safety outcomes. Strengthening nurse’s access to regular meeting such as departmental meeting and continuing education on local epidemiology is important to bridge the gap and enhance effective infection prevention practice.

Table 4.2
Respondents’ Level of Awareness Regarding Nosocomial Infections
In Terms of Understanding of Common Transmission Routes

Statement	Mean	Descriptor
1. <i>I understand how environmental factors contribute to the spread of infections.</i>	3.73	Very High
2. <i>I am aware of the importance of hand hygiene in preventing infections.</i>	3.70	Very High
3. <i>I know how to minimize the risk of transmission in my daily work.</i>	3.63	Very High
4. <i>I understand the significance of contact</i>	3.61	Very High

<i>precautions in infection control.</i>		
5. <i>I understand the common transmission routes for nosocomial infections, such as contact and airborne transmission.</i>	3.60	Very High
6. <i>I can identify the role of healthcare workers in the transmission of nosocomial infections.</i>	3.59	Very High
7. <i>I can explain the concept of droplet and airborne transmission.</i>	3.58	Very High
8. <i>I can identify situations that pose a higher risk for transmission of nosocomial infections.</i>	3.56	Very High
9. <i>I understand the implications of multi-drug-resistant organisms in transmission.</i>	3.54	Very High
10. <i>I am aware of the role of fomites in the transmission of infections.</i>	3.53	Very High
Overall Mean Rating	3.60	Very High

Legend for the Mean Rating: *Very Low: 1.00 – 1.74; Low: 1.75 – 2.49; High: 2.50 – 3.24; Very High: 3.25 – 4.00*

Table 4.2 illustrates the respondents’ level of awareness regarding nosocomial infections, specifically their understanding of common transmission routes. The overall mean rating of 3.60 indicates that nurse respondents demonstrate a strong knowledge of the pathways through which nosocomial infections are transmitted. This implies that nurses have a solid grasp of infection control principles and are aware of the various factors that facilitate the spread of infections within healthcare settings. Likewise, the very high awareness of transmission routes shows that nurses are well-equipped to implement standard precautions, including hand hygiene, proper use of personal protective equipment, and environmental cleaning. This knowledge can directly reduce the risk of nosocomial infections among patients and staff.

Moreover, the consistently very high ratings across all items indicate that nurses possess not only theoretical knowledge but also practical understanding of how infections are transmitted, which is essential for implementing effective preventive strategies. Among the statements, the highest-rated was “I understand how environmental factors contribute to the spread of infections” (\bar{x} =3.73). This reflects nurses’ recognition of the critical role that the hospital environment—including contaminated surfaces, equipment, and patient care areas—plays in infection transmission. Closely following is “I am aware of the importance of hand hygiene in preventing infections.” (\bar{x} =3.70) indicating that nurses strongly appreciate the significance of proper handwashing and the use of sanitizers in preventing the spread of pathogens.

Other statements with very high mean ratings include “I know how to minimize the risk of transmission in my daily work” (\bar{x} =3.63) and “I understand the significance of contact precautions in infection control” (\bar{x} =3.61). These results demonstrate that nurses are knowledgeable about practical strategies to reduce infection risk and the importance of standard precautions such as wearing gloves, gowns, and masks, especially when caring for patients with contagious infections.

On the other hand, despite the overall very high level of awareness among nurses regarding the common transmission routes of nosocomial infections, the statements with the lowest mean ratings were “I understand the implications of multi-drug-resistant organisms (MDROs) in transmission” (\bar{x} =3.54) and “I

am aware of the role of fomites in the transmission of infections” ($\bar{x}=3.53$). While these ratings are still within the very high range, they suggest that nurses may have slightly less confidence or familiarity with more specialized aspects of infection transmission, particularly regarding the spread of resistant pathogens and indirect transmission through inanimate objects. The analysis further shows that while general awareness of transmission routes is strong, specialized understanding of MDROs and indirect transmission via fomites remains a relative weak spot, warranting targeted education and protocol reinforcement. These findings indicate that hospitals should prioritize continuous training on emerging resistant organisms and the role of indirect transmission to further strengthen patient safety and minimize nosocomial infections.

This study is parallel with Khalili et al. (2021), who stressed that nurses demonstrated a high level of understanding of environmental contributions to infection spread. Likewise, the results of the analysis also validated the study of de Vos et al. (2022) who revealed that while many nurses recognize the threat of multi-drug-resistant organisms (MDROs), their compliance with contact precautions often depends on having clear and usable protocols, a supportive work environment, and good hand-hygiene practices. This implies that nurses have a thorough understanding of nosocomial illness transmission and can effectively apply procedures such as hand hygiene and sanitation to support evidence-based infection prevention. Staff members are better able to manage new illnesses and reduce hospital-acquired infections when they remain knowledgeable and up-to-date. That is how you ensure patient safety.

Table 4.3
Respondents’ Level of Awareness Regarding Nosocomial Infections
In Terms of Awareness of Risk Factors for Nosocomial Infections

Statement	Mean	Descriptor
1. <i>I understand the significance of proper wound care in preventing infections.</i>	3.65	Very High
2. <i>I am aware that immunocompromised patients are at higher risk for nosocomial infections.</i>	3.60	Very High
3. <i>I can identify the role of healthcare-associated devices (e.g., catheters) in infection risk.</i>	3.59	Very High
4. <i>I understand how invasive procedures increase the risk of infections.</i>	3.58	Very High
5. <i>I am aware of the environmental factors that can contribute to increased infection risk.</i>	3.58	Very High
6. <i>I understand the impact of prolonged hospital stays on infection risk.</i>	3.55	Very High
7. <i>I know how patient mobility affects the risk of nosocomial infections.</i>	3.53	Very High
8. <i>I am aware of the risk factors that contribute to the development of nosocomial infections in patients.</i>	3.53	Very High
9. <i>I understand how staff-to-patient ratios can influence infection rates.</i>	3.50	Very High
10. <i>I can identify the role of antibiotic use in increasing infection risk.</i>	3.48	Very High

Overall Mean Rating	3.55	Very High
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Legend for the Mean Rating: *Very Low: 1.00 – 1.74; Low: 1.75 – 2.49; High: 2.50 – 3.24; Very High: 3.25 – 4.00*

Table 4.3 shows the respondents’ level of awareness regarding nosocomial infections in terms of risk factors. Based on the analysis, it can be gleaned that the overall mean rating of 3.55 indicates that the respondents manifested a strong understanding of the factors that increase the likelihood of hospital-acquired infections. The high overall awareness further reflects that nurses are not only knowledgeable in theory but also likely able to apply this understanding in clinical practice, enabling them to anticipate potential infection risks, implement preventive measures, and contribute effectively to patient safety initiatives within the hospital setting.

Furthermore, the highest-rated statement, “I understand the significance of proper wound care in preventing infections” (\bar{x} =3.65), highlights that nurses recognize wound management as a critical determinant of patient safety. Closely following, the statements “I am aware that immunocompromised patients are at higher risk for nosocomial infections” (\bar{x} =3.60) and “I can identify the role of healthcare-associated devices (e.g., catheters) in infection risk” (\bar{x} =3.59) reflect nurses’ awareness that patient-related factors and device utilization are significant contributors to infection risk.

Contrarily, the statements with the lowest mean ratings, although still very high, were “I understand how staff-to-patient ratios can influence infection rates” (\bar{x} =3.50) and “I can identify the role of antibiotic use in increasing infection risk” (\bar{x} =3.54). These lower ratings suggest that nurses may have relatively less familiarity with systemic or institutional contributors to infection risk, such as workload management and antimicrobial stewardship.

The aforementioned findings coincide with Idanan et al. (2025), who posited that healthcare workers (including nurses) demonstrated adequate knowledge of infection prevention. Likewise, this also supports the study of Kane et al. (2017), who emphasized that a lower nurse-to-patient ratio is strongly associated with worse patient outcomes, including *nosocomial sepsis*. They further highlighted that reducing the number of patients per nurse was linked to a 43% reduction in nosocomial sepsis in ICU settings.

This implies that nurses are very competent in recognizing and controlling infection risks through clinical decision-making and infection prevention. Nurses effectively handle infection prevention through wound care, monitoring patients’ status and overseeing or managing invasive devices daily. Nurses who understand infection risks improve patient safety by providing appropriate wound care and managing high-risk patients.

Table 4.4
Respondents’ Level of Awareness Regarding Nosocomial Infections
In Terms of Familiarity with Hospital Policies and Protocols

Statement	Mean	Descriptor
1. <i>I understand the importance of compliance with infection control protocols.</i>	3.57	Very High
2. <i>I understand the importance of interdisciplinary collaboration in infection prevention efforts.</i>	3.55	Very High
3. <i>I am familiar with the hospital's policies and</i>	3.54	Very High

<i>protocols related to infection control.</i>		
4. <i>I know where to find the relevant infection control guidelines and protocols within the hospital.</i>	3.53	Very High
5. <i>I am familiar with the infection control committee's role in our hospital.</i>	3.53	Very High
6. <i>I understand the procedures for reporting nosocomial infections in our facility.</i>	3.52	Very High
7. <i>I am aware of the training requirements related to infection control in my department.</i>	3.50	Very High
8. <i>I know the roles and responsibilities of staff in maintaining infection control standards.</i>	3.50	Very High
9. <i>I am aware of the resources available for staff education on infection control.</i>	3.48	Very High
10. <i>I know how often infection control policies are reviewed and updated.</i>	3.45	Very High
Overall Mean Rating	3.51	Very High

Legend for the Mean Rating: *Very Low: 1.00 – 1.74; Low: 1.75 – 2.49; High: 2.50 – 3.24; Very High: 3.25 – 4.00*

Table 4.4 presents the respondents’ level of awareness regarding nosocomial infections in terms of their familiarity with hospital policies and protocols. The overall mean rating of 3.51 indicates that nurses assigned to the medical-surgical wards demonstrate strong awareness and understanding of the institutional frameworks guiding infection prevention and control. This high level of awareness implies that nurses are well-equipped to align their clinical practices with hospital policies, enabling them to implement standardized procedures consistently in order to minimize infection risks. It also suggests that institutional guidelines and training programs are being effectively communicated and integrated into daily nursing routines.

Furthermore, the highest-rated statement is “I understand the importance of compliance with infection control protocols” ($\bar{x} = 3.57$), suggesting that nurses not only recognize the necessity of adhering to established procedures but also acknowledge their role in preventing healthcare-associated infections. This reflects a solid foundation in infection control principles and highlights the presence of a safety-oriented culture within the participating hospitals.

Other items with very high mean scores, such as understanding the importance of interdisciplinary collaboration ($\bar{x} = 3.55$) and familiarity with hospital policies and protocols ($\bar{x} = 3.54$), illustrate that respondents value teamwork and are aware of institutional guidelines. These results imply that nurses are not functioning in isolation but appreciate the collective responsibility shared across healthcare teams in reducing nosocomial infections.

The slightly lower-rated items, though still within the “Very High” range, include awareness of training requirements ($\bar{x} = 3.50$), clarity on staff roles in maintaining infection control ($\bar{x} = 3.50$), availability of staff education resources ($\bar{x} = 3.48$), and knowledge of how often policies are reviewed and updated ($\bar{x} = 3.45$). These areas may indicate opportunities for strengthening communication around ongoing training programs, clarifying staff responsibilities, and providing regular updates on policy revisions. The relatively lower mean for policy update awareness suggests that while nurses understand existing

guidelines, they may not always be informed of recent changes—an important aspect of dynamic infection control practices.

Notably, the data reflect a well-informed nursing workforce with strong awareness of hospital infection control systems. However, it also highlights the need for continuous communication and periodic reinforcement of training requirements, resource availability, and policy updates to maintain a consistently high level of compliance and situational awareness across the hospital setting. This corroborates with Manalundong and Bangcola (2025), who reported that nurses generally exhibit high levels of familiarity with institutional infection control guidelines, recognize the importance of compliance, and value interdisciplinary collaboration in preventing healthcare-associated infections.

This implies that nurses working on medical-surgical wards follow strict infection prevention protocols. This lowers the danger of infection and maintains consistency in care. Compliance with isolation guidelines and basic hand hygiene makes a significant difference. These habits provide the foundation of good infection control. When nurses work closely with other healthcare providers, treatment is better coordinated. Making policies more accessible helps everyone stay on track. Establishing guidelines alone is not enough. They also need to be continually reinforced. That is the actual key to reducing infections and safeguarding patients. Without continuous education, nurses may depend on outdated techniques, which could affect patient safety. Lastly, nurses require continual education and easy access to resources in order to perform their best.

Table 4.5
Respondents’ Level of Awareness Regarding Nosocomial Infections
In Terms of Ability to Identify Preventive Measures

Statement	Mean	Descriptor
1. I am aware of the importance of environmental cleaning in infection prevention.	3.75	Very High
2. I can describe the correct use of personal protective equipment (PPE).	3.70	Very High
3. I can identify best practices for hand hygiene in various healthcare settings.	3.68	Very High
4. I understand the importance of vaccination in preventing infections.	3.60	Very High
5. I understand the significance of patient education in preventing infections.	3.58	Very High
6. I know how to conduct a risk assessment for infection prevention in my area.	3.55	Very High
7. I feel empowered to advocate for infection control measures in my workplace.	3.53	Very High
8. I can identify appropriate preventive measures to reduce the risk of nosocomial infections.	3.50	Very High
9. I feel confident in my ability to implement infection control practices in my daily work.	3.48	Very High
10. I can identify the steps involved in outbreak management and response.	3.45	Very High

Overall Mean Rating	3.58	Very High
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Legend for the Mean Rating: *Very Low: 1.00 – 1.74; Low: 1.75 – 2.49; High: 2.50 – 3.24; Very High: 3.25 – 4.00*

Table 4.5 presents the respondents’ level of awareness regarding nosocomial infections in terms of their ability to identify preventive measures. The overall mean rating of 3.58 underscores that nurses in the medical-surgical wards possess a strong and comprehensive understanding of essential infection prevention practices. This high level of awareness suggests that nurses are well-equipped with the foundational knowledge required to reduce the risk of healthcare-associated infections through proper hygiene, environmental sanitation, risk assessment, and patient-centered education.

The highest-rated statement, “I am aware of the importance of environmental cleaning in infection prevention” ($\bar{x} = 3.75$), shows that nurses recognize the critical role of environmental hygiene in reducing the presence and transmission of pathogens within the hospital. This reflects a strong appreciation for environmental sanitation as a frontline defense against healthcare-associated infections.

Similarly, very high scores were recorded for “I can describe the correct use of personal protective equipment (PPE)” ($\bar{x} = 3.70$) and “I can identify best practices for hand hygiene in various healthcare settings” ($\bar{x} = 3.68$). These findings demonstrate that nurses are highly knowledgeable about the standard precautions that form the foundation of infection control. Their strong awareness of proper PPE use and hand hygiene practices suggests a solid grasp of protective measures essential for both patient and staff safety.

Respondents also indicated very high awareness of broader preventive strategies, such as “I understand the importance of vaccination in preventing infections” ($\bar{x} = 3.60$) and “I understand the significance of patient education in preventing infections” ($\bar{x} = 3.58$). These scores highlight that nurses understand the importance of both biomedical and educational approaches to infection prevention, recognizing the value of immunization programs, and patient involvement in promoting infection control behaviors.

Although still rated as “Very High,” slightly lower mean scores were observed for “I can identify appropriate preventive measures to reduce the risk of nosocomial infections” ($\bar{x} = 3.50$) and “I feel confident in my ability to implement infection control practices in my daily work” ($\bar{x} = 3.48$). These values suggest that while knowledge is strong, some nurses may lack full confidence or consistency in applying certain preventive measures, possibly due to workload, time constraints, or variability in clinical scenarios.

Moreover, the lowest—but still “Very High”—rated item was “I can identify the steps involved in outbreak management and response” ($\bar{x} = 3.45$). This may indicate limited exposure to outbreak situations or the need for further training in advanced infection control processes such as containment, surveillance, and rapid response strategies.

Interestingly, the findings demonstrate a highly competent nursing workforce with very strong awareness of preventive measures against nosocomial infections. However, the slightly lower scores in areas such as outbreak management and practical confidence suggest the need for continuous education, simulation-based training, and strengthened support systems. This highlights that hospitals can further enhance nurses’ readiness to implement and advocate for effective infection control practices, especially during emerging infectious threats.

The aforementioned findings are parallel with Joseph and Marcial (2021), who posited that nurses have adequate knowledge and good practices in infection prevention and control, with particular strengths in

environmental hygiene, standard precautions, and education about infection prevention. However, they further noted that the lack of regular training and limited availability of updated SOPs affected the translation of knowledge into consistent practice.

This implies that nurses demonstrate readiness to implement key infection prevention strategies in their daily practice. Their high level of knowledge of environmental cleanliness, personal protective equipment (PPE) use, and hand hygiene indicates that they follow standard precautions to prevent nosocomial infections. Updated SOPs should be easily accessible. Effective cleaning, proper PPE use, immunization awareness, and patient education all greatly reduce nosocomial infection risks.

Table 4.6
Respondents’ Level of Awareness Regarding Nosocomial Infections
In Terms of Understanding of Droplet and Vector-Borne Transmission

Statement	Mean	Descriptor
1. I understand the concept of droplet transmission and its relevance to nosocomial infections.	3.63	Very High
2. I am aware of the importance of wearing masks to prevent droplet transmission in healthcare settings.	3.61	Very High
3. I can identify common diseases that are transmitted via droplet transmission.	3.58	Very High
4. I understand the role of vector-borne transmission in the spread of infections.	3.57	Very High
5. I understand how environmental conditions can influence vector populations in healthcare settings.	3.56	Very High
6. I understand the significance of staff education on droplet and vector-borne transmission in reducing infection rates.	3.54	Very High
7. I am aware of the preventive measures that can be taken to reduce vector-borne transmission in hospitals.	3.53	Very High
8. I can identify common vectors that contribute to the transmission of nosocomial infections.	3.51	Very High
9. I am familiar with the hospital protocols for managing outbreaks related to droplet and vector-borne infections.	3.43	Very High
10. I can explain the relationship between vector control and infection prevention strategies.	3.13	High
Overall Mean Rating	3.51	Very High

Legend for the Mean Rating: Very Low: 1.00 – 1.74; Low: 1.75 – 2.49; High: 2.50 – 3.24; Very High: 3.25 – 4.00

Table 4.6 illustrates the respondents’ level of awareness regarding nosocomial infections, specifically in relation to their understanding of droplet and vector-borne transmission. The overall mean rating of 3.51,

classified as Very High, indicates that nurses across all wards possess substantial knowledge of the principles and preventive measures associated with both droplet and vector-borne infection transmission. It can be gleaned in the analyses that the highest-rated statements—“I understand the concept of droplet transmission and its relevance to nosocomial infections” ($\bar{x} = 3.63$) and “I am aware of the importance of wearing masks to prevent droplet transmission in healthcare settings” ($\bar{x} = 3.61$)—reflect that nurses are well-versed in the fundamental mechanisms of infection spread through respiratory droplets. This level of awareness is particularly critical in hospital settings where close contact increases the risk of droplet transmission.

Auxiliary to this, other statements with very high mean ratings include “I can identify common diseases that are transmitted via droplet transmission” ($\bar{x} = 3.58$), “I understand the role of vector-borne transmission in the spread of infections” ($\bar{x} = 3.57$), and “I understand how environmental conditions can influence vector populations in healthcare settings” ($\bar{x} = 3.56$). These findings indicate that nurses have a comprehensive understanding of both direct and indirect transmission routes and acknowledge the impact of environmental factors on infection control.

Similarly, respondents reported strong awareness of “I understand the significance of staff education on droplet and vector-borne transmission in reducing infection rates” ($\bar{x} = 3.54$) and “I am aware of the preventive measures that can be taken to reduce vector-borne transmission in hospitals” ($\bar{x} = 3.53$), highlighting their recognition of proactive strategies and health promotion as key components of infection prevention. Their ability to “identify common vectors that contribute to the transmission of nosocomial infections” ($\bar{x} = 3.51$) further demonstrates practical knowledge of potential sources of hospital-acquired infections.

However, the slightly lower, yet still high, rating was observed in “I can explain the relationship between vector control and infection prevention strategies” ($\bar{x} = 3.13$). This score suggests that while nurses possess strong theoretical knowledge, there may be areas for improvement in applying this knowledge to hospital protocols and integrating vector control into broader infection prevention measures.

Overall, the results indicate that nurses have a very high level of awareness regarding droplet and vector-borne transmission. The slightly lower scores on protocol familiarity and vector control integration highlight the need for targeted training, regular updates on hospital outbreak management procedures, and guidance on applying theoretical knowledge in practice. This implies that enhancing these areas will enable nurses to implement more comprehensive infection control measures, reduce nosocomial transmission, and promote safer healthcare environments.

The results of this study coincide with Manalundong and Bangcola (2025), who underscored that nurses have strong baseline knowledge of infection control but there are gaps in translating knowledge into practice, especially for more specialized or less routine IPC tasks. They further corroborate that nurses may understand transmission conceptually but might be less confident about applying complex protocols (e.g., vector-control, outbreak management).

This implies that nurses show a thorough awareness of droplet transmission and the importance of masks for respiratory precautions, which are essential to limiting infection spread in hospitals. While droplet precaution protocols are well-established, awareness gaps in vector control indicate policy gaps in surveillance and management. Improving policies through clearer protocols can lead to better practical application.

Table 4.7

**Respondents’ Level of Awareness Regarding Nosocomial Infections
In Terms of Prolonged Hospitalization and Invasive Procedures and Their Relationship with
Infection Control**

Statement	Mean	Descriptor
1. I understand how the duration of catheterization can affect infection rates.	3.49	Very High
2. I understand the importance of strict aseptic techniques during invasive procedures to prevent infections.	3.48	Very High
3. I am aware of the role of preoperative and postoperative care in reducing infection risk.	3.46	Very High
4. I am aware of the importance of monitoring patients for signs of infection during prolonged hospitalization.	3.43	Very High
5. I understand how patient mobility and rehabilitation can influence infection risk during hospitalization.	3.41	Very High
6. I understand how prolonged hospitalization increases the risk of nosocomial infections.	3.40	Very High
7. I am aware that invasive procedures can introduce pathogens into a patient’s body.	3.39	Very High
8. I can explain the relationship between the use of antibiotics and the risk of developing nosocomial infections during prolonged hospital stays.	3.38	Very High
9. I can identify the types of invasive procedures that pose a higher risk for nosocomial infections.	3.35	Very High
10. I can identify strategies to minimize infection risks associated with prolonged hospitalization and invasive procedures.	3.23	High
Overall Mean Rating	3.40	Very High

Legend for the Mean Rating: Very Low: 1.00 – 1.74; Low: 1.75 – 2.49; High: 2.50 – 3.24; Very High: 3.25 – 4.00

Table 4.7 shows the respondents’ level of awareness regarding nosocomial infections, focusing on prolonged hospitalization and invasive procedures and their connection to infection control. The overall mean score of 3.40 indicates that nurses have a strong understanding of how patient care factors—such as the length of hospital stay and exposure to invasive procedures—can influence the risk of healthcare-associated infections.

Further analysis also revealed that the highest-rated statements, “I understand how the duration of catheterization can affect infection rates” ($\bar{x} = 3.49$) and “I understand the importance of strict aseptic techniques during invasive procedures to prevent infections” ($\bar{x} = 3.48$), reflect that nurses are highly aware of key procedural factors that directly impact infection rates. This statistic highlights the significance of maintaining proper aseptic techniques and closely monitoring devices like catheters to minimize infection risk.

Similarly, other statements with very high scores include “I am aware of the role of preoperative and postoperative care in reducing infection risk” ($\bar{x} = 3.46$) and “I am aware of the importance of monitoring patients for signs of infection during prolonged hospitalization” ($\bar{x} = 3.43$), suggesting that nurses recognize the importance of the continuum of care—both before and after invasive procedures—in reducing nosocomial infections. In addition, the awareness that patient mobility and rehabilitation can influence infection risk ($\bar{x} = 3.41$) and that prolonged hospitalization increases the risk of nosocomial infections ($\bar{x} = 3.40$) reflects nurses’ comprehensive understanding of patient-related factors contributing to infections.

Meanwhile, the lowest-rated was obtained by the statement, “I can identify strategies to minimize infection risks associated with prolonged hospitalization and invasive procedures” ($\bar{x} = 3.23$). This indicates that although nurses are aware of the risks, there may be a slight gap in consistently applying preventive strategies, possibly due to workload, time limitations, or limited practical experience with certain protocols.

Consequently, the data demonstrate that nurses have a very high level of awareness regarding the link between prolonged hospitalization, invasive procedures, and nosocomial infections. However, the slightly lower score in identifying preventive strategies highlights the importance of continuous education, simulation-based training, and reinforcement of best practices to enhance the practical application of knowledge. Strengthening these areas will further promote patient safety, reduce infection rates, and support effective infection control within hospital settings.

This implies that nurses understand prolonged hospital stays and invasive procedures can lead to nosocomial infections. Their understanding of aseptic technique and perioperative care is more than just theoretical; they pay special attention to intrusive equipment and ensure that they are removed on time. Stronger protocols and frequent updates help keep practice consistent.

Table 4.8
Respondents’ Level of Awareness Regarding Nosocomial Infections
In Terms of Familiarity with Hospital Policies Related to Infection Control

Statement	Mean	Descriptor
1. <i>I am aware of the hospital's guidelines for the use of personal protective equipment (PPE).</i>	3.68	Very High
2. <i>I understand the roles and responsibilities of staff members in maintaining infection control standards.</i>	3.64	Very High
3. <i>I understand the importance of compliance with infection control protocols in preventing outbreaks.</i>	3.60	Very High
4. <i>I am familiar with the infection control committee's role in our hospital.</i>	3.55	Very High
5. <i>I know where to find the relevant infection control guidelines within the hospital.</i>	3.52	Very High
6. <i>I understand the training requirements for staff related to infection control practices.</i>	3.50	Very High
7. <i>I am familiar with the hospital's infection</i>	3.48	Very High

<i>control policies and protocols.</i>		
8. <i>I know the procedures for reporting nosocomial infections within our facility.</i>	3.48	Very High
9. <i>I know how often infection control policies are reviewed and updated in our hospital.</i>	3.48	Very High
10. <i>I am aware of the resources available for staff education regarding infection control practices.</i>	3.48	Very High
Overall Mean Rating	3.40	Very High

Legend for the Mean Rating: *Very Low: 1.00 – 1.74; Low: 1.75 – 2.49; High: 2.50 – 3.24; Very High: 3.25 – 4.00*

Table 4.8 presents the respondents’ level of awareness regarding nosocomial infections in terms of their familiarity with hospital policies related to infection control. It can be gleaned in the statistical analysis that the overall mean rating of 3.40 stresses that nurses possess a strong understanding of hospital guidelines, protocols, and institutional procedures that are essential for maintaining infection control standards. This high level of awareness implies that nurses are likely to apply these policies consistently in their daily practice, which can enhance compliance with infection prevention measures and reduce the risk of hospital-acquired infections. Furthermore, the findings suggest that institutional communication and training regarding infection control policies have been effective in ensuring that nurses are informed and capable of implementing standardized procedures.

Moreover, the highest-rated statement, “I am aware of the hospital's guidelines for the use of personal protective equipment (PPE)” ($\bar{x} = 3.68$), suggests that nurses are highly conscious of the appropriate use of PPE as a fundamental infection control measure. Similarly, “I understand the roles and responsibilities of staff members in maintaining infection control standards” ($\bar{x} = 3.64$) and “I understand the importance of compliance with infection control protocols in preventing outbreaks” ($\bar{x} = 3.60$) reflect strong awareness among nurses regarding their professional obligations and the collective role of healthcare staff in preventing hospital-acquired infections.

Other statements with very high mean scores include familiarity with the infection control committee’s role ($\bar{x} = 3.55$), knowledge of where to find relevant infection control guidelines ($\bar{x} = 3.52$), and understanding of training requirements for staff ($\bar{x} = 3.50$). These results indicate that nurses are not only aware of protocols but also understand the structure and resources available within their hospital to support infection control practices.

Meanwhile, the remaining items—such as familiarity with infection control policies and protocols ($\bar{x} = 3.48$), knowledge of procedures for reporting nosocomial infections ($\bar{x} = 3.48$), awareness of policy review and update schedules ($\bar{x} = 3.48$), and knowledge of educational resources for staff ($\bar{x} = 3.48$)—further demonstrate a consistent and very high level of awareness across various aspects of institutional infection control measures. This consistency indicates that nurses are well-informed about both procedural and administrative components of infection prevention.

The results of the analyses imply that nurses are adequately prepared to comply with institutional infection control policies and contribute to a culture of patient safety. However, since some items scored slightly lower than others (e.g., familiarity with reporting procedures and policy updates), it highlights the need for continuous education and periodic reinforcement of institutional policies. This finding suggests that regular in-service training, refresher courses, and easy access to guidelines can further strengthen

nurses’ ability to apply these policies effectively, ensuring adherence to infection control protocols and minimizing the risk of nosocomial infections.

This implies that nurses across all wards successfully use guidelines in their bedside care, demonstrating a strong grasp of infection control standards. Because of the broad knowledge of PPE regulations, staff roles, and compliance standards, they employ protective measures consistently, follow safety precautions, and conduct infection prevention uniformly. Their consistency considerably reduces variation in practice. However, there is less awareness of reporting protocols or guidelines and policy changes, which may hinder the timely detection of infection issues and affect clinical judgment. A thorough awareness of these policies improves patient safety by lowering the possibility.

Respondents’ Level of Practice in their Awareness of Recognizing/Attending to Droplets/Vector-Borne Transmission

The following tables show the level of practices of nurses in their awareness of recognizing /attending to droplets/vector-borne transmission, in terms of the following parameters: (a) awareness and recognition; (b) practice and response, and (c) training and resources.

Table 4.9

**Respondents’ Level of Practice in their Awareness of Recognizing/Attending to Droplets/Vector-Borne Transmission
In Terms of Awareness and Recognition**

Statement	Mean	Descriptor
1. I understand the importance of personal protective equipment (PPE) in preventing droplet transmission.	3.60	Strongly Agree
2. I recognize the environmental factors that contribute to vector-borne transmission.	3.58	Strongly Agree
3. I am aware of the modes of transmission for droplet-borne diseases.	3.55	Strongly Agree
4. I can identify the signs and symptoms of droplet-borne infections.	3.53	Strongly Agree
5. I am knowledgeable about vector-borne diseases (e.g., malaria, dengue).	3.53	Strongly Agree
Overall Mean Rating	3.56	Strongly Agree

Legend for the Mean Rating: Strongly Disagree: 1.00 – 1.74; Disagree: 1.75 – 2.49; Agree: 2.50 – 3.24; Strongly Agree: 3.25 – 4.00

Table 4.9 analyzes the respondents’ level of practice regarding their awareness of recognizing and attending to droplet and vector-borne transmission, particularly in terms of awareness and recognition. The overall mean rating of 3.56 indicates that nurses in the wards demonstrate a strong ability to recognize and respond to risks associated with both droplet and vector-borne infections. This high level of practice suggests that nurses are effectively applying their knowledge in real-world clinical settings, enabling them to promptly identify potential sources of infection and implement appropriate control measures. The findings imply that such competence contributes directly to reducing the spread of infectious agents within the hospital, thereby protecting both patients and healthcare staff. Moreover, it

underscores the importance of continuous training and reinforcement of protocols, ensuring that nurses remain vigilant in recognizing evolving transmission risks and capable of implementing evidence-based interventions. Sustaining this level of awareness and practice can enhance overall patient safety, strengthen infection prevention strategies, and support the hospital’s broader public health initiatives.

Furthermore, the highest-rated statement, “I understand the importance of personal protective equipment (PPE) in preventing droplet transmission” ($\bar{x} = 3.60$), suggests that nurses are highly conscious of the protective measures required to prevent the spread of respiratory infections in healthcare settings. Similarly, “I recognize the environmental factors that contribute to vector-borne transmission” ($\bar{x} = 3.58$) and “I am aware of the modes of transmission for droplet-borne diseases” ($\bar{x} = 3.55$) reflect a comprehensive understanding of both the environmental and biological determinants of infection spread. These findings indicate that nurses are not only aware of the theoretical principles of transmission but also capable of recognizing situations that may predispose patients or staff to infection.

Other statements, including “I can identify the signs and symptoms of droplet-borne infections” ($\bar{x} = 3.53$) and “I am knowledgeable about vector-borne diseases (e.g., malaria, dengue)” ($\bar{x} = 3.53$), further demonstrate that nurses are able to link knowledge of transmission modes with clinical recognition. This awareness is critical for early detection, timely reporting, and immediate implementation of infection control measures to prevent outbreaks. This validated the study of Campo et al. (2025), who found that nurses had good knowledge of infection prevention and control.

This implies that nurses excel in recognizing and managing vector- and droplet-borne transmission, utilizing their expertise in clinical setup. Effective use of PPE and knowledge of environmental risks enable significant infection control measures, including isolation techniques. Regular reinforcement of infection control policies through periodic updates and training is required to adjust to evolving transmission risk. Early detection of infection threats leads to reduced infection rates and the protection of vulnerable patients. Workforce readiness is also emphasized, showing that nurses are ready to handle infectious threats. You can make this readiness even better by allocating funds for continuous training and education and making healthcare more resilient.

Table 4.10

Respondents’ Level of Practice in their Awareness of Recognizing/Attending to Droplets/Vector-Borne Transmission

In Terms of Practice and Response

Statement	Mean	Descriptor
1. <i>I routinely use PPE when caring for patients with known droplet infections.</i>	3.60	Strongly Agree
2. <i>I follow standard protocols for preventing the spread of infections in my workplace.</i>	3.58	Strongly Agree
3. <i>I educate patients and their families about droplet and vector-borne transmission.</i>	3.48	Strongly Agree
4. <i>I report any incidents of potential exposure to droplet or vector-borne pathogens.</i>	3.48	Strongly Agree
5. <i>I actively participate in training related to</i>	3.45	Strongly Agree

<i>infection control practices.</i>		
Overall Mean Rating	3.56	Strongly Agree

Legend for the Mean Rating: *Strongly Disagree: 1.00 – 1.74; Disagree: 1.75 – 2.49; Agree: 2.50 – 3.24; Strongly Agree: 3.25 – 4.00*

Table 4.10 illustrates the respondents’ level of practice in their awareness of recognizing and attending to droplet and vector-borne transmission, specifically in terms of practical application and response measures. The overall mean rating of 3.56, interpreted as *Strongly Agree*, indicates that nurses across all wards consistently implement preventive practices and respond appropriately to potential infection risks in their daily work. This high level of practical application implies that nurses are not only knowledgeable about transmission pathways but are also able to translate that knowledge into effective clinical interventions.

The analysis also revealed that the highest-rated statement, “I routinely use PPE when caring for patients with known droplet infections” ($\bar{x} = 3.60$), demonstrates that nurses prioritize personal protection as a fundamental aspect of infection control. This finding reflects adherence to standard precautionary measures and highlights the importance placed on minimizing direct exposure to infectious agents. Similarly, “I follow standard protocols for preventing the spread of infections in my workplace” ($\bar{x} = 3.58$) underscores that nurses consistently apply institutional guidelines to reduce transmission risks, reinforcing the integration of policy knowledge into routine practice.

Other statements, including “I educate patients and their families about droplet and vector-borne transmission” ($\bar{x} = 3.48$) and “I report any incidents of potential exposure to droplet or vector-borne pathogens” ($\bar{x} = 3.48$), indicate that nurses actively participate in both health promotion and risk communication. These practices demonstrate a proactive role in safeguarding not only patients but also visitors and staff, aligning with principles of infection prevention and control that extend beyond direct patient care. Additionally, “I actively participate in training related to infection control practices” ($\bar{x} = 3.45$) highlights nurses’ commitment to ongoing professional development and staying updated with emerging infection control standards. Furthermore, the very high mean ratings across all items suggest that nurses are not only aware of the principles of droplet and vector-borne infection transmission but also translate this knowledge effectively into daily practices. This strong alignment between awareness and practice has important implications for hospital infection control: it reduces the likelihood of nosocomial outbreaks, ensures patient and staff safety, and supports institutional compliance with infection prevention standards. This coincides with Campo and Remon (2025), who underscored the high level of practice and response observed among nurses in recognizing and attending to droplet and vector-borne transmission.

This implies that nurses are skillful at identifying and addressing droplet and vector-borne transmission, which has a significant impact in terms of clinical practice. The continued use of PPE, adherence to protocols, and proactive patient teaching and education demonstrate the successful integration of infection control measures into nursing practice. This approach promotes detection and action, emphasizing infection prevention as a top goal. The active participation of nurses in reporting and education demonstrates a supportive policy environment that encourages responsibility and continuous improvement.

Table 4.11

Respondents’ Level of Practice in their Awareness of Recognizing/Attending to Droplets/Vector-Borne Transmission

In Terms of Training and Resources

Statement	Mean	Descriptor
1. I believe ongoing training is essential for improving my practice in infection control.	3.65	Strongly Agree
2. I am encouraged by my workplace to stay updated on infection prevention strategies.	3.50	Strongly Agree
3. I feel comfortable seeking additional information on infection prevention when needed.	3.45	Strongly Agree
4. I have access to resources and guidelines regarding infection control practices.	3.35	Strongly Agree
5. I have received adequate training on droplet and vector-borne transmission.	3.18	Agree
Overall Mean Rating	3.43	Strongly Agree

Legend for the Mean Rating: *Strongly Disagree:* 1.00 – 1.74; *Disagree:* 1.75 – 2.49; *Agree:* 2.50 – 3.24; *Strongly Agree:* 3.25 – 4.00

Table 4.11 presents the respondents’ level of practice in relation to their awareness of recognizing and managing droplet and vector-borne transmission, with a focus on training and access to resources. The overall mean rating of 3.43, interpreted as *Strongly Agree*, indicates that nurses across all wards value continuous education, actively seek relevant information, and generally have access to resources that support effective infection control practices. This implies that nurses recognize the importance of ongoing professional development in maintaining high standards of infection prevention and are proactive in updating their knowledge and skills.

The highest-rated statement, “I believe ongoing training is essential for improving my practice in infection control” ($\bar{x} = 3.65$), underscores the nurses’ recognition of the vital role of continuous professional development in maintaining competence in infection prevention and control (IPC). Likewise, “I am encouraged by my workplace to stay updated on infection prevention strategies” ($\bar{x} = 3.50$) highlights the positive influence of institutional support in promoting adherence to IPC standards. The statements “I feel comfortable seeking additional information on infection prevention when needed” ($\bar{x} = 3.45$) and “I have access to resources and guidelines regarding infection control practices” ($\bar{x} = 3.35$) further reflect that nurses are proactive in self-directed learning and utilize institutional protocols to reinforce safe practices. On the other hand, the lowest-rated item, “I have received adequate training on droplet and vector-borne transmission” ($\bar{x} = 3.18$), which falls within the *Agree* category, suggests that while nurses acknowledge the importance of training and actively pursue knowledge, there may be gaps in the depth, frequency, or comprehensiveness of formal training programs provided by the institution. Such limitations could potentially affect the consistent application of evidence-based practices, particularly in high-risk scenarios. The findings imply that access to training programs, reference materials, and institutional support plays a critical role in enabling nurses to implement evidence-based practices effectively. Moreover, fostering a culture of continuous learning and resource accessibility can strengthen the hospital’s overall infection control framework, enhance nurses’ confidence in managing emerging infectious threats, and contribute to a safer environment for both patients and healthcare staff. This supports the study of dos Santos et al. (2021), who found that training significantly influenced correct

PPE use among primary-care health workers. They further highlighted that those who participated in IPC training showed better adherence to using gloves, gowns, and face shields.

This implies that nurses emphasize the importance of continuous education in infection prevention, which improves the application of infection control techniques. However, dependence on self-led learning because of perceived inadequate official training raises worries about varying practices in high-risk situations. Policies promoting continuous education might not adequately close training gaps. To ensure equal knowledge application, policies must expressly mandate regular, skills-oriented training as well as access to current guidelines.

Nursing Practice on Infection Control

Nurses must follow infection control practices to prevent airborne and droplet infection in healthcare set ups. These illness pose a risk to patients and healthcare workers. Nurses are essential in disrupting the chain of infection by applying evidence-based methods. The next discussion will describe the infection control practice that nurses utilize to prevent airborne and droplet transmission, the assessment covers parameters focusing on (a) hand hand hygiene, (b) appropriate use of personal protective equipment (PPE), (c) safe disposal of infectious waste, and (d) compliance with aseptic techniques. It will explain how each of these parameters is essential in reducing the transmission of infection and maintaining high levels of patient care.

Hand hygiene.

Most nurses at Adventist Hospital Palawan consistently practiced hand hygiene before and after patient contact, demonstrating a clear understanding of its role in preventing the transmission of microorganisms. Proper techniques including appropriate duration and the use of soap and water were generally observed. This reflects their awareness of professional responsibility and commitment to patient safety.

However, a few nurses (e.g., #1, #4, and #10) did not perform hand hygiene during the first day of observation. These lapses appeared to be associated with understaffing and heavy workload. Poor compliance can weaken infection control efforts in healthcare settings. Notably, their performance improved on the second day, likely influenced by peer reminders and observing colleagues adhere to proper practice during busy shifts.

Overall, the findings indicate that nurses possess adequate knowledge and awareness of hand hygiene standards, though consistent application may be affected by systemic factors such as staffing shortages and workload demands. This observation aligns with the World Health Organization (2021), which identifies hand hygiene as the most effective method for reducing nosocomial infections. Ensuring adequate staffing and supportive work conditions is essential to maintain high compliance and safeguard patient safety.

Protective Personal Equipment

Observations indicate that nurses across all wards at Adventist Hospital Palawan generally adhered to established PPE protocols. They appropriately selected PPE according to the mode of transmission for example, using N95 masks for airborne precautions and surgical masks for droplet precautions—demonstrating sound knowledge of infection prevention and compliance with institutional policies. Most nurses followed the recommended donning and doffing sequence and performed hand hygiene accordingly, reflecting an understanding of PPE's role in protecting both healthcare workers and patients. Despite high overall compliance, minor lapses were observed, particularly during high-workload situations. On the first day, nurses #3 and #10 removed PPE in a hurried manner, deviating from the

correct doffing sequence and increasing the risk of contamination. These lapses appeared related to understaffing and frequent task interruptions, where urgent clinical demands took priority over strict protocol adherence. Notably, both nurses demonstrated proper PPE use on the second day of observation. Overall, the findings suggest that nurses possess adequate knowledge and skills regarding PPE use, supported by effective training in infection control. However, consistent implementation may be affected by organizational factors such as staffing levels and workload. This aligns with guidance from the World Health Organization (2021), which emphasizes that proper selection, donning, and doffing of PPE alongside hand hygiene are essential components of infection prevention and control programs. Continuous training, monitoring, and institutional support are therefore necessary to maintain optimal compliance in fast-paced clinical settings.

Safe disposal of infectious waste

Nurses across all wards at Adventist Hospital Palawan demonstrated strong knowledge of infectious waste management by using appropriate containers for hazardous materials and following proper segregation protocols. Most nurses disposed of sharps correctly to prevent needlestick injuries and complied with infection control standards, including the use of color-coded waste bins for contaminated items such as gloves and gauze. Waste bags were generally sealed appropriately and not overfilled, minimizing the risk of spillage and environmental contamination.

However, several lapses were observed on the first day. Instances of incorrect segregation occurred, with non-infectious waste placed in infectious bins. Nurses #5, #12, and #20 delayed disposal of used items during high-workload periods, leading to temporary accumulation of contaminated materials in work areas. Additionally, some sharps containers were not promptly replaced when nearly full, increasing potential safety risks. These issues appeared related to staffing shortages and heavy workload. Improvement was noted on the second day, with better adherence to proper waste segregation practices. Overall, the findings suggest that nurses possess adequate knowledge of infectious waste management, but compliance may be influenced by workflow design and staffing adequacy rather than lack of awareness. Reinforcement of proper waste segregation practices and stronger institutional support are essential to ensure consistent and safe disposal procedures. Both the World Health Organization (2021) and the Centers for Disease Control and Prevention (2022) emphasize that proper segregation, handling, and disposal of infectious waste are critical in preventing infection transmission and exposure to bloodborne pathogens. Continuous training and organizational support are therefore vital to maintaining a safe healthcare environment.

Adherence to aseptic procedure

Direct observations indicate that nurses across all wards at Adventist Hospital Palawan generally applied appropriate aseptic techniques during invasive procedures, particularly in maintaining equipment sterility. During intravenous insertions and wound dressings, nurses avoided direct contact with sterile components, demonstrating compliance with aseptic principles that help prevent the transmission of microorganisms. Some nurses were also observed disinfecting IV access ports with alcohol swabs prior to medication administration, reducing the risk of contamination.

However, during multiple medication administrations, 16 out of 25 nurses accessed IV ports without prior disinfection. This practice was observed on both days and appeared to be embedded in routine workflow, suggesting that IV port disinfection was not consistently integrated into habitual practice. Omitting this step increases the risk of introducing microorganisms directly into the bloodstream.

Proper aseptic practices including maintaining a sterile field, handling sterile equipment correctly, and disinfecting IV ports are essential to patient safety. Consistent adherence reduces the incidence of healthcare associated infections, shortens hospital stays, and minimizes complications. Conversely, failure to disinfect IV ports places patients at significant risk of infection.

These findings highlight the need for regular monitoring and reinforcement of aseptic protocols, particularly the “scrub the hub” practice. The Centers for Disease Control and Prevention (2022) emphasizes that strict aseptic technique reduces device related infections, morbidity, and prolonged hospitalization. Similarly, the World Health Organization (2021) identifies proper infection prevention measures including hand hygiene and appropriate protective practices as foundational components of effective infection control programs. Continuous training and institutional support are therefore essential to ensure consistent compliance

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents the summary of findings, conclusions drawn from the study, recommendations for future research, and discussion plan for dissemination.

This study sought to investigate the level of awareness and the corresponding practices of nurses assigned to medical-surgical wards in private hospitals in Puerto Princessa City with regard to the prevention and management of nosocomial infections. Specifically, it examined nurses’ familiarity with infection control guidelines, their adherence to standard protocols, and the extent to which training and institutional support influence their infection prevention behaviors. By exploring these elements, the study aimed to determine how educational programs and organizational initiatives contribute to enhancing healthcare staff competencies, subsequently improving patient care quality and ensuring a safer clinical environment. Moreover, the study assessed whether a significant relationship exists between nurses’ awareness and their actual infection control practices, recognizing that awareness alone may not always translate into consistent behavioral compliance.

The analysis was based on the responses of 40 purposively selected nurses working across all wards in Adventist Hospital Palawan. Data were collected through a structured survey questionnaire adapted from validated instruments developed by Tenna et al. (2013), which assessed healthcare workers’ knowledge, attitudes, and practices related to infection control in Ethiopia, and by Labrague et al. (2012), which evaluated student nurses’ understanding and adherence to standard precautions. These instruments provided a reliable foundation for measuring nurses’ competence in infection prevention and control and for generating evidence that reflects both individual and institutional factors influencing practice.

To address the research questions, descriptive statistics—specifically the computation of mean ratings—were employed to determine the nurses’ levels of awareness and practices across the identified dimensions of nosocomial infection control. These mean scores provided a clear understanding of the extent to which respondents demonstrate knowledge, recognition, and application of infection prevention measures. In addition, the Pearson Product-Moment Correlation Coefficient was utilized to examine the strength and significance of the relationship between nurses’ awareness and their corresponding practices. This statistical test allowed the study to establish whether higher levels of awareness are associated with more consistent infection control behaviors. All inferential analyses were carried out at the 0.05 level of significance, ensuring that the conclusions drawn are both statistically sound and reflective of meaningful patterns in the data.

Summary of Findings

Respondents' Level of Awareness Regarding Nosocomial Infections

- **Knowledge of Definitions and Types of Nosocomial Infections.** Findings show that nurses across all wards in Adventist Hospital Palawan possess a very high level of awareness (overall mean = 3.42) regarding the fundamental concepts of nosocomial infections, including their definitions, classifications, and commonly occurring types. The consistently high ratings across statements indicate that nurses clearly understand the essential principles of infection development and transmission, which are critical for implementing effective prevention strategies. Although awareness remained strong overall, comparatively lower ratings were observed in items relating to specific hospital-acquired pathogens and facility-based epidemiology, suggesting the need for more targeted institutional training on pathogen trends relevant to the local setting.
- **Understanding of Common Transmission Routes.** The respondents demonstrated a very high awareness (overall mean = 3.60) of the major transmission pathways of nosocomial infections. They showed strong familiarity with hand hygiene, respiratory droplets, contaminated surfaces, and environmental factors that facilitate pathogen spread. The highest-rated statements indicate that nurses are well-equipped to recognize immediate risks in their clinical environment. However, items related to multidrug-resistant organisms (MDROs) and the role of fomites received slightly lower, yet still high scores, reflecting potential gaps in advanced microbiological understanding that may influence infection control decisions in high-risk units.
- **Awareness of Risk Factors for Nosocomial Infections.** Nurses exhibited a very high level of awareness (overall mean = 3.55) regarding common risk factors associated with nosocomial infections, including compromised immunity, invasive devices, improper wound care, and patient overcrowding. Their high ratings suggest strong competency in recognizing clinical circumstances that predispose patients to infection. Nevertheless, slightly lower scores were recorded for items related to institutional and systemic contributors, such as staffing ratios, antibiotic misuse, and hospital hygiene policies. These results underscore the need for broader administrative-level orientation to strengthen holistic risk recognition among frontline staff.
- **Familiarity with Hospital Policies and Protocols.** The respondents demonstrated a very high familiarity (overall mean = 3.51) with institutional infection control policies, highlighting their understanding of PPE guidelines, interdisciplinary roles, and the importance of adherence to protocols. The highest scores were given to statements that emphasize compliance and collaborative responsibilities, indicating strong alignment with standard infection control expectations. However, lower ratings appeared in areas concerning resource availability, policy update frequency, and staff training requirements, suggesting variability in access to institutional information and opportunities for continuous professional development.
- **Ability to Identify Preventive Measures.** Nurses showed a very high ability to identify and apply infection prevention measures (overall mean = 3.58). They reported strong awareness of PPE use, hand hygiene, environmental sanitation, and proper disposal practices. The findings reveal that nurses are highly capable of translating knowledge into preventive action. However, relatively lower scores on items involving outbreak response and preventive decision-making indicate that while foundational preventive knowledge is strong, there may be limited confidence or experience in managing complex or large-scale infection incidents.

- **Understanding of Droplet and Vector-Borne Transmission.** The respondents reported a very high understanding (overall mean = 3.51) of disease transmission involving droplets and vectors. They demonstrated strong awareness of disease characteristics, signs and symptoms, and the modes through which pathogens spread. High ratings also suggest that nurses recognize the environmental contributors to vector-borne diseases, an essential factor in tropical regions. Nonetheless, moderately lower scores in linking vector-control strategies to broader infection control mechanisms indicate the need for more integrated training that connects environmental management with clinical infection prevention.
- **Awareness of Risks from Prolonged Hospitalization and Invasive Procedures.** Nurses indicated a very high awareness (overall mean = 3.40) of the infection risks associated with long hospital stays and invasive procedures such as catheterization and intubation. High scores reflect nurses' competency in identifying clinical practices that elevate infection susceptibility. However, the slightly lower ratings on items related to specific risk mitigation strategies suggest a gap between recognizing risks and implementing standardized preventive interventions. This highlights the importance of improving evidence-based guidelines and strengthening clinical decision support in everyday nursing practice.
- **Familiarity with Hospital Policies Related to Infection Control.** The analysis indicates that nurses across all wards in Adventist Hospital Palawan possess a very high level of understanding of institutional guidelines, protocols, and procedures essential for maintaining infection control standards. They demonstrate strong familiarity with the proper use of personal protective equipment (PPE), understand their roles and responsibilities in upholding infection control measures, and recognize the importance of compliance with protocols to prevent outbreaks. Additionally, respondents are knowledgeable about the functions of the hospital's infection control committee, the location of relevant guidelines, and the training requirements necessary for staff.

Respondents' Level of Practice in their Awareness of Recognizing/Attending to Droplets/Vector-Borne Transmission

- **Awareness and Recognition.** Nurses across all wards in Adventist Hospital Palawan demonstrate a strong ability to recognize and respond to droplet and vector-borne transmission risks. They show comprehensive awareness of the importance of PPE, environmental factors contributing to vector-borne infections, modes of transmission, clinical signs, and common vector-borne diseases. This high level of awareness allows them to promptly identify potential sources of infection, implement appropriate preventive measures, and contribute to reducing the spread of infectious agents within the hospital, ultimately supporting patient and staff safety.
- **Practice and Response.** Nurses consistently translate their awareness of droplet and vector-borne transmission into practical actions. They routinely use PPE, adhere to standard infection control protocols, educate patients and families, report potential exposure incidents, and actively participate in infection control training. These practices demonstrate that nurses not only understand theoretical principles but also apply them effectively in their daily clinical work, reflecting a proactive and preventive approach that enhances overall patient safety and strengthens the hospital's infection control measures.
- **Training and Resources.** Nurses highly value ongoing training and access to resources for effective infection control, actively seeking relevant information and staying updated on emerging prevention strategies. While most nurses feel supported by their workplace and are proactive in self-directed

learning, there is a slight gap in formal training specifically on droplet and vector-borne transmission. This finding highlights the importance of continuous professional development, structured training programs, and resource accessibility to ensure consistent application of evidence-based practices, increase confidence in managing infection risks, and reinforce a culture of patient safety within the hospital.

Nursing Practice on Infection Control

- Nurses across all wards in Adventist Hospital Palawan performed hand hygiene effectively, with overall compliance improving by day two, despite initial failures due to workload and staffing. Observation revealed appropriate PPE use, with minor infractions occurring under high pressure. Although there was a good level of understanding about infectious waste management, certain mistakes in disposal were seen, especially during peak times emphasizing the need for better assistance and process. Generally, aseptic techniques were followed, however IV ports were frequently not clean or disinfected, which increased the risk of infection.

Conclusion

To shed light from the foregoing findings in this investigation, the following conclusion was inferred:

- Nurses across all wards in Adventist Hospital Palawan demonstrate a very high level of awareness regarding nosocomial infections, including their definitions, types, transmission routes, risk factors, and hospital policies. They are knowledgeable about droplet and vector-borne transmission, understand preventive measures, and recognize the importance of compliance with institutional protocols, reflecting strong readiness to support infection control and patient safety.
- Nurses translate their awareness into consistent and proactive practices by routinely using PPE, adhering to infection control protocols, educating patients and families, reporting potential exposures, and participating in ongoing training. They value access to resources and continuous professional development, which enhances their ability to prevent and manage nosocomial infections effectively in daily clinical settings.
- Observed lapses, particularly during periods of excessive workloads and understaffing, show that organizational factors influence compliance. Aseptic practices are not fully integrated, as seen by problems with IV port cleaning, waste disposal and hand hygiene.
- Even while most nurses followed recommended protocols, persistent problems such as inconsistent disinfection of IV ports provide potential risks for nosocomial infections. These gaps demonstrate that knowledge on its own is insufficient in the absence of structural support, proper staffing, reasonable workloads, and continual procedural reinforcement.
- The findings emphasize that enhancing nurses' knowledge and understanding of infection prevention—through education, training, and access to protocols—can significantly improve the consistent and correct application of infection control measures in clinical practice.

Recommendations

After the examination of findings and conclusion of the study, the following are strongly recommended for the utilization of the results of this study.

1. Nurses should continuously update their knowledge and skills on nosocomial infection prevention, including proper use of PPE and adherence to hospital protocols. They should consistently apply these practices in daily patient care to minimize infection risks and enhance patient safety. Ongoing participation in training and self-directed learning is essential to maintain high standards of practice.

2. The triangulation study method, which combines direct observation and comparison of staff knowledge and practices, is advised to ensure a more accurate and thorough assessment of staff performance, such as hand hygiene observations, regular infection prevention control audits, and PPE. Timely feedback reinforces proper actions and allows for the early correction of harmful practices.
3. Nurse leaders and infection prevention control teams should encourage open discussion of infection risks and provide real-time feedback at every in-service meeting to improve accountability and maintain a safe culture. Nurturing a culture where nurses actively remind each other of proper techniques and engage in discussions about best practices and lessons learned is essential for fostering long-term compliance and teamwork.
4. Infectious waste segregation, IV port disinfection (scrub the hub), hand hygiene and appropriate PPE donning and doffing should all be included in regular in-service meeting, training and competency validation. Compliance can be enhanced further through simulation and return demonstrations.
5. Although hospital policies are generally well understood, institution should make sure that policy updates and revisions are communicated on a timely basis. Clearly establish roles and duties in infection control outbreak response to assist maintain compliance and preparedness.
6. Given the low level of awareness of staffing ratios and systematic risk factors, administrators should promote appropriate nurse-patient ratios to reduce infection risks. Enhance antimicrobial stewardship by involving nurses actively, since this could help nurses consistently implement infection control strategies.
7. Enabling nurses to teach and educate infection prevention and hand hygiene to patient and their families. Promote shared accountability for preventing transmission, which could improve overall infection control efforts and increases nurses' personal practice.
8. Hospital administrators should provide regular training programs, sufficient resources, and a supportive environment to ensure that nurses and staff can follow infection prevention protocols effectively. They should also monitor compliance and implement strategies to address gaps in practice. Strengthening institutional policies will reinforce a culture of safety and reduce hospital-acquired infections..
9. Future researchers may explore gaps in nurses' knowledge and practices related to infection prevention and assess the effectiveness of targeted interventions. They should also investigate factors influencing adherence to protocols and identify strategies to improve compliance. Such studies will contribute to evidence-based policies and better patient safety outcomes.

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