

Research Article

Awareness and Practices on Needlestick Injuries Among Staff Nurses in Rinconada Hospitals

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Abstract:

This study aimed to determine the practices on needlestick injuries among staff nurses in selected hospitals in the Rinconada area. Specifically, it examined the nurses' profiles, their level of awareness and practices on needlestick injuries, factors affecting their practice and the relationship among these variables. and the relationships among these variables. A total of 136 staff nurses participated in the study through a structured questionnaire. Descriptive statistics, chi-square tests, and t-tests were utilized to analyze the data.

Findings revealed that most respondents were aged 21–30 years old, majority are female, single, and held a bachelor's degree. A large percentage earned below Php 20,000 pesos monthly and were assigned in ward areas. Many had served for less than a year, with the majority having attended infection control training, though few had undergone specific training on needlestick injuries. Alarming, 50.74% reported having experienced a needlestick injury. The level of awareness among nurses was generally high, with the highest awareness reported in the proper disposal of sharps. Practices related to needlestick injury prevention were observed "often," with the highest adherence shown in recognizing the consequences of improper disposal. The factors affecting practices included staff shortages, excessive workload, and limited availability of PPE.

Statistical analysis revealed a significant relationship between years of service and relevant training with the level of awareness. Moreover, a significant relationship existed between awareness and actual practices. Based on these findings, a proposed plan was developed to enhance safety practices, focusing on training, resource allocation, and institutional support. The study concludes that while awareness is high, consistent application of safety practices remains an area for improvement. It is recommended that hospitals implement regular training, ensure access to protective equipment, and strengthen institutional protocols to reduce the incidence of needlestick injuries among staff nurses.

Keywords: Needlestick Injuries, Staff Nurses, Occupational Safety.

Introduction

Needlestick injuries (NSIs) remain one of the important issues in the healthcare sector, posing risks to the safety and well-being of the healthcare workers, specifically staff nurses who are directly involved in patient care. Even with the advancements in the medical technology field and the establishment of safety protocols, needlestick injury (NSI) cases continue to rise globally, causing the diffusion of severe infections, including hepatitis B, hepatitis C, and HIV. The ongoing challenge is worsened by different levels of awareness and inconsistent practices among healthcare professionals, which may hinder effective prevention and timely response to these incidents. In the context of Rinconada hospitals, it is essential to assess the current awareness and practices related to NSIs among staff nurses. This study aims to investigate the factors affecting the prevention and management of NSI, eventually striving to enhance safety and knowledge within the nursing profession, thereby improving the overall quality of healthcare delivery.

According to the Disease Control and Prevention (CDC) and European Agency for Safety and Health at Work (EU-OSHA), there are over 385,000 cases of needlestick and sharp injuries each year among hospital healthcare workers (HCWs) in the United States, and over 1,000,000 cases in Europe. According to the WHO, needlestick injuries result in 16,000,000 cases per year among healthcare workers (HCWs), with 1,000 cases each of HCV, HBV, and HIV. The presence of different infectious diseases caused by needlestick injuries (NSIs) among healthcare workers (HCWs) is inevitable and can be influenced by factors including, vaccination rates of HCWs, the accessibility to suitable protective equipment for workers, the delivery of post-exposure prophylaxis (PEP), and conformity to infection control standards. In addition, the experience of needlestick injuries (NSIs) differs across healthcare workers (HCWs), with nurses, surgeons, and emergency professionals experiencing NSIs more frequently (CDC, 2024 and EU-OSHA, 2020).

The Sustainable Development Goal (SDG) 3 of the United Nations emphasize the requisite of ensuring healthy lives and promote well-being for all individuals regardless of the age. Needlestick injuries (NSIs) is one of the major occupational risk for healthcare workers, threatening both their physical and mental well-being due to the possible spread of blood-borne pathogens, including HIV, hepatitis B, and hepatitis C. Reducing the experience of needlestick injuries is important to safeguard the healthcare professionals in maintaining a strong workforce, which are critical for attaining universal health coverage and encouraging global health goals

(WHO, 2021; United Nations, 2023; CDC, 2023).

Needlestick injuries can result in extensive expenses for healthcare organizations, including medical care, advanced examinations, and possible legal obligations. Acquiring a complete understanding of the financial costs accompanying these injuries can provide a solid basis for implementing preventive measures and enhancing the management of hospital resources (Kunishima, 2019). This is in accordance with the Senate Bill No.1336 also known as the “Health Care Worker Needlestick Prevention Act” requiring the secretaries of health and labor to issue regulations to eliminate or minimize the significant risk of needlestick injury to health workers (Legislative Digital Resources, 2025).

The researcher, with nearly nine years of experience as a staff nurse, has faced several needlestick injuries in the operating room, emergency room, and medical ward. To cite one incident, while assisting in a major operation in the operating room, a surgeon accidentally pricked his skin with a needle. During the night shift, despite his awareness of the risk of needlestick injuries, he was hesitant about the proper step to manage the injury. Thus, the absence of formal guidance and clear protocols resulted in anxiety and uncertainty. With the same incident, as reported by many of the colleagues, it clearly stressed the importance of enhanced, comprehensive education and practical training regarding needlestick injury prevention and management. Addressing these gaps will ensure the health and well-being of staff nurses and the development of a safer and more supportive working environment for all healthcare professionals, thus this study.

Statement of the Problem

This study sought to determine the awareness and practices of needlestick injuries among nursing staff at Rinconada hospitals. The study sought to ascertain the demographic and professional attributes of the staff nurses, assess awareness and practices about needlestick injuries, identify factors influencing these practices, and examine the correlations between nurses' profiles, their degrees of awareness, and their measures for injury prevention. The research sought to formulate a strategy to increase awareness and minimize needlestick injuries among nursing personnel in the environment.

Objectives of the Study

The study attempted to determine the awareness and practices regarding needlestick injuries among staff nurses in Rinconada hospitals. Specifically, it addressed the following objectives:

1. Determine the profile of the staff nurses in Rinconada hospitals along with:
 - a. Age
 - b. Sex
 - c. Civil Status
 - d. Highest Educational Attainment
 - e. Average Monthly Income
 - f. Area of Assignment
 - g. Years of Service
 - h. Relevant Seminars/Trainings Attended
 - i. Experience of Needlestick Injuries
2. Measure the level of awareness on needlestick injuries among staff nurses in Rinconada hospitals.
3. Determine the practices on needlestick injuries among staff nurses in Rinconada hospitals.
4. Identify the factors affecting the practices of needlestick injury prevention among staff nurses in Rinconada hospitals.
5. Test the significant relationship between the profile and the level of awareness on needlestick injuries among staff nurses in Rinconada hospitals.
6. Test the significant relationship between the level of awareness and practices on needlestick injuries among staff nurses in Rinconada hospitals.
7. Propose a plan to enhance the awareness and prevent needlestick injuries among staff nurses in Rinconada Hospitals.

Scope and Limitations of the Study

This research aimed to determine the awareness and practices on needlestick injuries among nursing staff in Rinconada hospitals. The research, conducted from July to October 2024, included 136 staff nurses as respondents. Respondents were selected through simple random sampling to obtain a representative sample from the following hospitals: Medical Mission Group Hospital and Health Services Cooperative of Camarines Sur (26 respondents), Sta Maria Josefa Foundation Hospital Incorporated (54 respondents), Villanueva-Tanchuling Maternity and General Hospital Inc. (13 respondents), Catangui Health and Medical Services Corporation Lourdes Hospital (17 respondents), and Our Lady Mediatrix Hospital (28 respondents). This study sought to evaluate awareness of the risks and consequences associated with needlestick injuries, assess current practices related to the use and disposal of sharps, and identify perceived factors influencing the adoption of best practices for preventing needlestick injuries.

The study identified several limitations. The research was geographically restricted to hospitals in the Rinconada area, thereby limiting the generalizability of the findings to other contexts. The study exclusively included staff nurses as respondents, thereby

omitting other healthcare personnel who may also be at risk for needlestick injuries. Notwithstanding these limitations, the study yielded significant insights that may guide institutional policy formulation and enhance safety initiatives in comparable healthcare settings.

Review of Literature

This chapter presents a review of the related literature of this study. In general, the examination of associated literature would offer an all-encompassing overview of the current literature on the research subject, emphasizing the fundamental ideas, principles, and discoveries that are pertinent to the investigation of this study.

Awareness and Practices on Needlestick Injuries

A needlestick injury transpires when the skin is inadvertently penetrated by a used needle, potentially exposing persons, particularly healthcare professionals, to blood-borne pathogens such as HIV, hepatitis B, and hepatitis C. The likelihood of disease transmission is often minimal; however, fast action is essential: cleanse the cut with soap and water, inform a supervisor, and obtain medical assistance without delay. Recommended prevention techniques encompass hepatitis B vaccination, rigorous compliance with safety protocols, reduction of needle utilization, prohibition of recapping used needles, and disposal in puncture-resistant containers. These measures are crucial for safeguarding healthcare workers against occupational hazards and for guaranteeing a secure working environment (Better Health Channel, 2025).

The Canadian Centre for Occupational Health and Safety emphasizes that needlestick injuries, which can arise during usage, disassembly, or inappropriate disposal of sharps, pose significant risks for the transfer of blood-borne pathogens. Prevention strategies encompass the utilization of safety-engineered equipment, prompt disposal of sharps in puncture-resistant containers, and thorough staff education and training. In cases of exposure, immediate first assistance, incident reporting, and medical assessment are necessary. The hierarchy of controls—elimination, engineering, administrative, and personal protective equipment—should direct prevention strategies to alleviate these occupational hazards (Canadian Centre for Occupational Health and Safety, 2024).

The Centers for Disease Control and Prevention (CDC) emphasizes the significant risk associated with occupational exposure to bloodborne infections from needlesticks and other sharp injuries. The CDC estimates that 385,000 incidences occur each year among hospital-based healthcare professionals in the United States, with further occurrences in nursing homes and clinics. These injuries can spread over 20 illnesses, including hepatitis B, hepatitis C, and HIV. In response, the CDC created the Sharps Safety Workbook to aid healthcare facilities in minimizing injuries and enhancing workplace safety (CDC, 2024).

Furthermore, WebMD indicates that needlestick injuries, albeit presenting a minimal risk of spreading illnesses such as HIV, hepatitis B, and hepatitis C, necessitate immediate intervention. The probability of acquiring HIV from a solitary needlestick is approximately 1 in 300, although the risk for hepatitis B may reach as high as 1 in 3 for unprotected individuals. Prompt wound management, evaluation of the source patient, and immediate post-exposure prophylaxis—particularly for HIV—are crucial, with the documentation of all injuries being imperative for appropriate care and prevention (WebMD, 2025).

In addition, the situation in Australia shows the global significance of this issue. Annually, a minimum of 18,000 needlestick injuries are reported among healthcare professionals, posing a risk for the transmission of severe bloodborne illnesses. Management encompasses prompt wound care, documentation, and medical assessment, including testing for significant infections. Prevention tactics encompass the utilization of safety-engineered devices, appropriate disposal methods, vaccination, and compliance with workplace protocols. Through education, conformance to safe work practices, and compliance with the procedures, the majority of needlestick injuries can be prevented (Ausmed, 2025).

Transparency and understanding of occupational hazards in the healthcare industry have advanced greatly by the Department of Health (DOH). Using the Electronic Freedom of Information portal, the government displayed throughout the Philippines the frequency and incidence of needlestick injuries. Moreover, it aids the formulation of specific strategies and policies to mitigate these hazards and safeguard healthcare professionals (DOH, 2023).

Furthermore, Ibuna (2020) highlighted the significant incidence of needlestick and sharps injuries in the nation. The study indicates that the Philippines continues to see a significant volume of such needlestick injuries despite the industrialized nations' lower incidence of injuries due to superior reporting mechanisms. This highlights the necessity for improved safety protocols and refined reporting mechanisms to safeguard the welfare in the healthcare industry.

Pagkatipunan's (2020) concept of "SHARPS" waste management in Manila hospitals emphasized the importance of proper disposal methods to prevent worker hazards and environmental damage. Further, the study analyzes the challenges encountered by healthcare institutions in the management of sharps waste and recommended effective strategies towards enhancing sustainable waste management procedures thereby reducing the risk of needlestick injuries.

The study of Pagkatipunan (2024) examined the knowledge and awareness of hospital personnel regarding waste segregation, management, and disposal practices of the six tertiary institutions in South Manila. The objective of the study is to improve waste management processes by evaluating awareness levels and identifying areas needing improvement, thereby reducing the incidence of needlestick injuries and other occupational hazards in hospital settings.

In a similar study, Naqvi et al.'s (2023) assessment of the healthcare workers' knowledge and awareness regarding needlestick

injuries (NSIs) revealed that although the majority of the healthcare personnel possessed moderate to high awareness of NSI dangers and prevention, significant discrepancy existed in practical knowledge and reporting procedures. Nurses exhibited heightened awareness compared to other groups; yet the underreporting of NSI incidents persisted as a prevalent issue. The study emphasized the significance of institutional policies and targeted training to enhance awareness and safe practices, with the objective of reducing the incidence and impact of NSIs among healthcare workers.

Likewise, Hussain et al. (2022) investigation of the frequency and risk causes of needle-stick injuries among nurses revealed a significant incidence of needlestick injuries, revealing the nurses' frequency of facing occupational hazards. The identified key risk factors such as inadequate training, excessive workload, and hazardous practices, needing enhanced safety protocols, regular infection control training, and the implementation of safer needle devices to reduce NSI rates and safeguard nurses from blood-borne pathogens.

Meanwhile, Mekonnen et al. (2020) concluded that a major percentage of healthcare professionals had encountered needlestick and sharp object injuries. Primary contributors comprised of needle recapping, poor preventive strategies, and insufficient workplace health and safety training. Further, the study revealed no significant relationship between gender and injury risk, though shown that Ethiopia exhibited a greater incidence of these injuries compared to numerous other countries, implying the necessity for enhanced safety protocols and training.

Furthermore, Adib-Hajbaghery and Lotfi (2021) discussed various factors contributing to needlestick and sharps injuries among healthcare professionals, including inadequate training, excessive workload, non-compliance with safety protocols, and hazardous practices like needle recapping. The majority of injuries were discovered during procedures or poor disposal of sharp instruments, leaving nurses at risk. The study recommends strict compliance with the standard protocols, use of safety-engineered technologies, regular training, and the improvement of the safety culture to significantly reduce the rates of injury and protect medical personnel. In the same case, Alshamrani's et al. (2021) assessment regarding the awareness and protocols regarding needlestick injuries (NSIs) among healthcare professionals revealed a significant incidence of NSIs specifically among the nurses. Major risk factors encompassed excessive workload, inadequate training, and improper handling of sharps, especially the recapping of needles. Apart from the safety protocols, the underreporting of injuries was common due to the ignorance or a perceived minimal danger. The study imparts the significance of ongoing education and refined reporting techniques to enhance safety protocols and reduce NSI rates among healthcare professionals.

Bakhtiyari et al. (2022) study resulted that age, educational qualifications, and professional experience, greatly influenced compliance with safety protocols, especially for needlestick injury avoidance. Newbie nurses exhibited reduced compliance, thereby needing targeted training and continuous education. These perceptions are relevant for understanding how demographic variables affect awareness and practices concerning needlestick injuries.

Park and Lee (2021) highlighted in their study the significant impact of nurses' educational attainment on compliance with conservative precautions, particularly in the prevention of needlestick injuries. It revealed that nurses having advanced educational qualifications demonstrated greater observance to safety guidelines, denoting that continuous education and training are fundamental for improving understanding and compliance with infection control methods.

Research by Rafique et al. (2021) correlated the nurses' salary levels and compliance with conventional precautions in public hospitals. The study found a positive correlation between a higher income and improved adherence to infection control methods, specifically the prevention of needlestick injuries. This leads to the importance of incorporating socio-demographic characteristics, such as income, in assessing awareness and practices about needlestick injuries.

Ghani et al.'s (2022) investigation on the occupational exposure to needlestick injuries among healthcare professionals in high-risk clinical environments highlighted the ongoing threat and significant risk of bloodborne infections. The study identified underreporting and inadequate post-exposure management as challenges, thereby recommending improvement of safety standards, continuous training, and increased awareness to mitigate hazards. These findings matched with the recent studies demonstrating that excessive workloads, dangerous practices, and insufficient protective measures contribute to needlestick injuries, while instructional and surveillance programs can significantly eliminate injury rates.

Meanwhile, Wahid et al.'s (2023) cross-sectional study demonstrated that years of service greatly influence the probability of needlestick injuries among nurses. Prolonged tenancy may elevate risk owing to contentment or aggregate exposure, although experience can enhance awareness. The research indicates that knowledge and behaviors concerning NSI prevention develop with professional experience, underlining the need for ongoing education and interventions tailored to the various stages of nurses' careers.

Saeed et al. (2022) discovered in their study that excessive workload, inadequate safety training, and hazardous activities lead to nurses' encountering significant occupational hazard for needlestick injuries that are characterized by a high occurrence rate and underreporting. The research emphasizes the difference of theoretical understanding and actual adherence, thus encouraging for consistent training, improved reporting, and engineered safety mechanisms to reduce risk.

Cai et al. (2022) study's findings indicate that targeted educational interventions and extensive clinical experience noticeably enhance knowledge and awareness of NSI prevention, although deficiencies in practical implementation remain. Also, it highlights the need for ongoing strengthening and convenient workplace environments to convert knowledge and awareness into reliable safe

actions.

Aluko et al. (2021) investigated the knowledge, attitudes, and practices of needle-stick injuries among healthcare professionals in Nigeria. Aside from significant awareness, inadequate practices such as needle recapping and minimal utilization of personal protective equipment—continued to prevail. The study underscores the need for targeted training, enhanced access to safety equipment, and institutional backing, particularly in resource-limited environments.

Meanwhile, Anareta (2024) performed a comprehensive study at De La Salle Medical and Health Sciences Institute, demonstrating that needlestick injuries were dominant among medical interns, impacting 82.5% of respondents. This extracted needlestick injury the main form of physical harm within the group. The study underscored the issue of verbal abuse, posing a wider range of occupational difficulties that extend beyond physical injury. These findings recommended enhanced safety protocols and support mechanisms to safeguard healthcare professionals.

Sepandi (2023) examined various injuries, including those caused by suture needles, in the Philippines. The research indicated that these accidents were common, especially during surgical procedures, and examined the potential of safety syringes to mitigate these occupational hazards. This underscores the need of embracing innovative technology and methodologies to enhance safety in healthcare environments.

In their study, Ibuna and Jabonete (2024) examined the incidence and implications of needlestick and sharps injuries among healthcare practitioners in military hospitals. The study analyzed factors leading to these accidents, such as the procedures most related to injuries, their frequency, and the effects on staff. With these factors, the need for enhanced safety protocols and training within military healthcare settings are essential.

Tayaben (2023) examined observance to sharps injury prevention standards among nurses at tertiary care facilities in the Philippines. The study evaluated the degree of adherence among healthcare personnel to specified criteria and identified difficulties and enablers to compliance. The objective was to communicate strategies that can improve sharps safety and decrease injury rates among nurses. Ditching et al. (2020) study employed the Theory of Planned Behavior to determine the factors affecting nursing students' intention to report needlestick injuries. The research investigated the attitudes, subjective norms, and perceived behavioral control that influenced the need to report injuries. The results indicate that educational interventions and policy measures are necessary to promote prompt reporting and efficient management of needlestick injuries among nursing students.

Theoretical Framework

This study was anchored on the Health Belief Model (HBM) and the Theory of Planned Behavior (TPB), which together offer a comprehensive understanding of the psychological and social factors that influence the awareness and practices of staff nurses regarding needlestick injuries (NSIs).

Hochbaum, Rosenstock, and Kegels' 1950s Health Belief Model (HBM) explains how individuals make health-related decisions based on risk, benefits, barriers, and self-efficacy. In this study, the HBM influences nurses' perceptions of their responsiveness to NSIs, the gravity of the effects, the benefits of protective interventions, and the barriers to their implementation. If a nurse sees a high risk of injury and believes that safety measures (such as sharps disposal) are desirable, they are more likely to engage in preventative behaviors, especially if they feel confidence in their capacity to do so. Practical training programs can boost self-efficacy, a key model construct, promoting safe and consistent needle handling.

The Theory of Planned Behavior (TPB), developed by Ajzen (1991), further strengthened the Health Belief Model (HBM) by illustrating the importance of intention in forecasting behavior. The theory of planned behavior hypothesizes that behavioral intention is influenced by three primary components: attitudes toward the behavior, subjective norms, and perceived behavioral control. This theory emphasizes that nurses' decisions to implement safe practices are influenced not only by personal beliefs but also by the surrounding social and institutional context. If the safe handling of sharps is established as a valued norm within the hospital, and nurses perceive support and capability in executing these behaviors, their likelihood of engagement in such practices increases. The theory of planned behavior emphasizes the necessity of fostering a safety culture within healthcare institutions, where adherence to preventive protocols is anticipated and supported.

The essential psychological constructs—perception, belief, self-efficacy, and practices—that affect staff nurses' awareness and behaviors regarding needlestick injuries. The central diagram provides a representation of needle handling, highlighting the practical context in which these factors operate. Surrounding the nucleus, four colored circles illustrate the essential components: perception (nurses' assessment of their vulnerability and the seriousness of needlestick injuries), belief (their confidence in the benefits of preventive measures and the obstacles they may face), self-efficacy (their conviction in their ability to successfully perform preventive behaviors), and practices (the actual execution of safe needle handling). The arrows connecting these circles represent the strong, shared relationships among these constructs. Therefore, a small change in one of these areas can impact the others and affect the actual safety practices.

This framework integrates the Health Belief Model (HBM) with the Theory of Planned Behavior (TPB). The Health Belief Model emphasizes the importance of individual perceptions of susceptibility, severity, rewards, barriers, and self-efficacy in driving preventive health behaviors. The model indicates that nurses who are prone to needlestick injuries and can recognize the severity of the consequences are the ones who are more likely to adopt preventive measures, knowing the effectiveness of these measures and

their ability to carry them out.

The Theory of Planned Behavior (TPB) explains the importance of intention, which is shaped by attitudes toward the behavior, subjective norms, and perceived behavioral control. The adoption of safe practices by nurses is influenced by their personal beliefs as well as the prevailing safety culture and expectations within their workplace. The figure shows the connection between the cognitive, affective, and social factors guiding to formulation of interventions designed to enhance safety and mitigate occupational hazards for staff nurses in the Rinconada hospitals.

The HBM and TPB provide a solid framework to enable a complex examination of the ways in which cognitive, behavioral, and environmental factors influence nurses' awareness and practices concerning NSIs. The study enables these models to guide the formulation of interventions that address knowledge, individual perceptions, and the wider social norms and institutional supports influencing behaviour. Examples of interventions consistent with these theories include educational programs, skills training, and the development of a positive safety culture. Additionally, the implementation of regular monitoring and feedback mechanisms can facilitate the sustained enhancement of safe practices over time. Incorporating insights from HBM and TPB can assist Rinconada hospitals in enhancing strategies to mitigate sharp injuries, thus safeguarding the health and safety of nursing staff.

Conceptual Framework

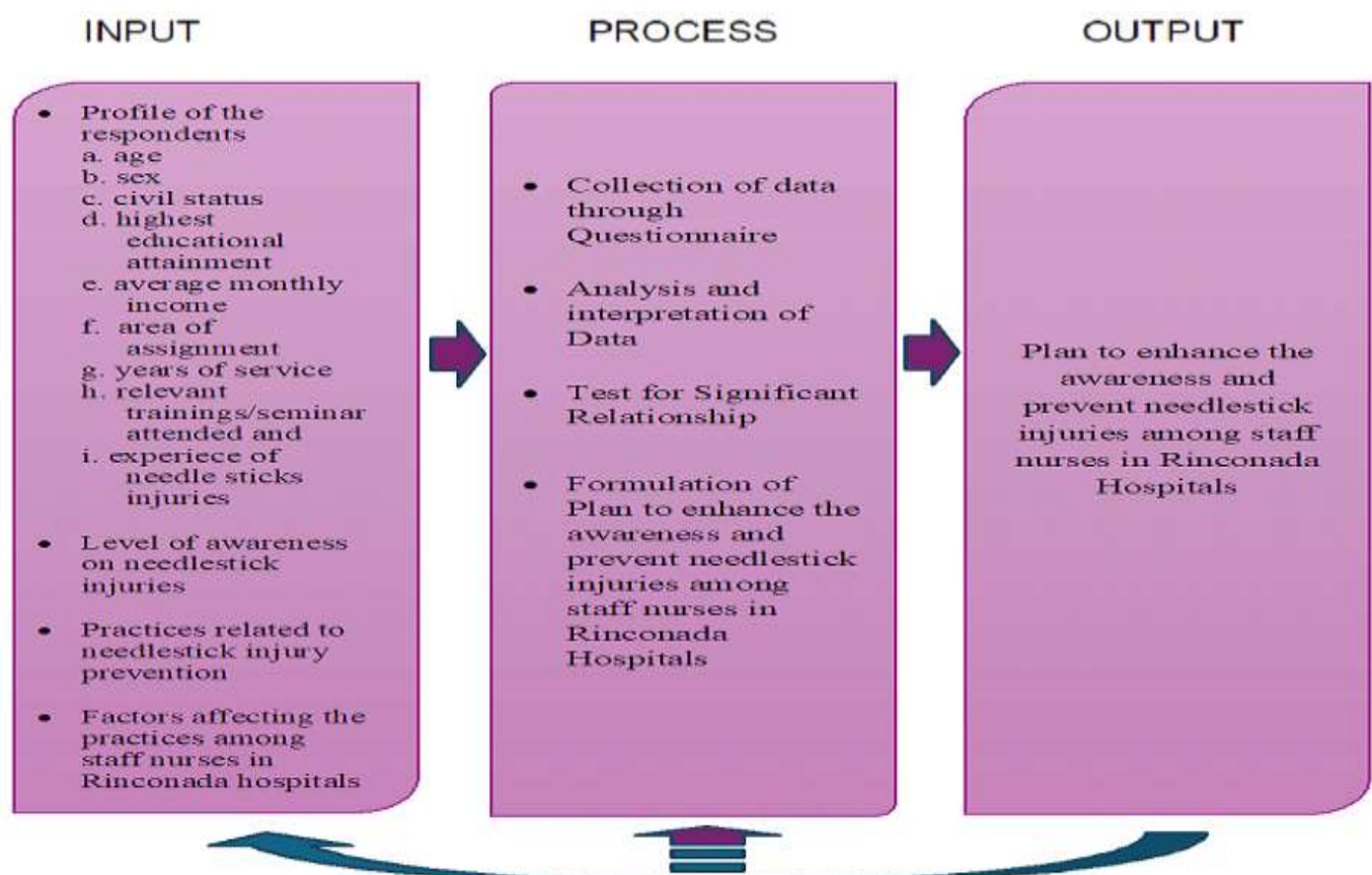
This study adopts a conceptual framework that illustrates the dynamic relationship among three essential components such as: Input, Process, and Output. This is visually represented in Figure 1, which provides the conceptual paradigm of the study.

The **Input** included the profile of the respondents, covering variables such as age, sex, civil status, highest educational attainment, average monthly income, area of assignment, years of service, relevant trainings attended, and experience of needlestick injuries. It also incorporates the level of awareness on needlestick injuries, the current practices related to needlestick injury prevention, and the factors affecting the implementation of such practices among staff nurses in Rinconada hospitals.

The **Process** involves the sequence of activities undertaken in the study, which include the development and administration of a survey questionnaire, data collection, analysis and interpretation of results, and ultimately, the formulation of a proposed plan to address the issues identified.

The **Output** proposed a plan to enhance the awareness and practices related to needlestick injury prevention among staff nurses in Rinconada Hospitals.

The **feedback loop** ensures that the study remains responsive to changes and continuously integrates new insights to refine interventions and improve future practices. This cyclical process enables the continuous improvement of strategies aimed at reducing needlestick injuries in the workplace.



Assumptions of the Study

The study was premised on the following assumptions:

1. The profile of the respondents in Rinconada hospitals vary in terms of age, sex, civil status, educational attainment, monthly salary, area of assignment, years of service, training attended, and previous experiences with needlestick injuries, and that these demographic variables may influence their awareness and practices related to needlestick injuries.
2. The staff nurses in Rinconada hospitals possess a certain level of awareness on needlestick injuries.
3. The staff nurses in Rinconada hospitals have established practices related to needlestick injury prevention.
4. There are identifiable factors that affect the practices of needlestick injury prevention among staff nurses in Rinconada hospitals.
5. There is a propose plan that will be sufficient and appropriate to formulate a practical and evidence-based plan to improve needlestick injury prevention practices among staff nurses in Rinconada hospitals.

Hypotheses of the Study

The following hypotheses are evaluated based on the observed data:

Ho₁ There is no significant relationship between the profile variables of staff nurses and their level of awareness on needlestick injuries.

Ho₂ There is no significant relationship between the level of awareness and the practices on needlestick injuries among staff nurses in Rinconada hospitals.

Definition of Terms

For clarification and a better understanding of the terms used in this study, the following words are defined conceptually and/or operationally.

Awareness A dynamic process enabling the decision-maker to transition from habitual to optimal behavior, driven by a feedback mechanism of self-observation (Bizzarri et al., 2022). Theoretically, awareness is an important component of behavior change theories, with the idea that increasing awareness might encourage people to adopt safer behaviors and practices. In this study, it is based on staff nurses' replies to a survey or questionnaire aimed at evaluating their knowledge of needlestick injuries, encompassing their comprehension of causes, hazards, preventive measures, and reporting protocols. Scores will indicate the extent to which nurses identify and appreciate the importance of needlestick injuries in their work environment.

Factors a fact or situation that influences the result of something (Cambridge Dictionary, 2025). Affecting the practices in preventing needlestick injuries are variables that impede the successful implementation of safety measures and policies. These can include a lack of resources, insufficient training, organizational culture, and individual attitudes toward safety. In this study, it refers to the specific conditions, influences, or circumstances that affect the practices of needlestick injury prevention among staff nurses.

Knowledge refers to “familiarity, awareness, or understanding of someone or something, such as facts, information, description, or skills, which is acquired through experience or education by perceiving, discovering, or learning” (Gilan, 2022). In this study, examines the extent to which staff nurses are aware about needlestick injuries, including their causes, effects, and preventive techniques. In theory, information serves as the foundation for people's decisions and actions, implying that increased awareness regarding needlestick injuries can lead to better prevention and management practices among healthcare workers (Doe, 2021).

Needlestick Injury is a “wound caused by needles that unintentionally puncture the skin” (Canadian Centre for Occupational Health and Safety, 2024). Needlestick injuries in healthcare settings are considered a primary risk factor for the transmission of bloodborne pathogens, making them critical occupational hazards requiring stringent safety protocols and preventive measures (Centers for Disease Control and Prevention, 2020). In this study, any self-reported incidence by a staff nurse at a Rinconada hospital when their skin was punctured or penetrated by a used needle or sharp object is considered a needlestick injury for the purposes of this study, regardless of whether the incident led to an infection or requires little to serious medical attention.

Practices on Needlestick Injuries refers to the set of rules, procedures, and measures that healthcare workforce industry follows to prevent, treat, and respond to injuries brought by accidental punctures from used needles or other sharp medical devices. These procedures are designed to minimize the risk of exposure to bloodborne pathogens that can be spread through these kinds of injuries (Oppy, 2024; Ausmed, 2025; Canadian Centre for Occupational Health and Safety, 2024). In this study, it is defined as the staff nurses' management, handling, and prevention of needlestick injuries. This includes nurses' compliance with safety protocols like sharps disposal, exposure reporting, PPE use, and post-exposure procedures as recommended by institutional policies and health guidelines. Staff nurses self-report their daily and emergency responses to needles and other sharps, as well as their compliance with preventive measures to reduce workplace needlestick injuries.

Training Programs are structured and systematic educational activities that aim to improve staff nurses' knowledge, abilities, and practices in the prevention and management of needlestick injuries (Taylor, 2021). In this study, it pertains to any formal or informal educational sessions, workshops, or courses undertaken by staff nurses that concentrate primarily on infection control, occupational safety, needlestick injury prevention, or similar subjects.

Methodology

This chapter presents the locale of the study, research design, respondents of the study, research instrument, data gathering procedure and data analysis. It contained the method that will be used in performing the study, how the respondents were identified in the specific target area or locality, and the means of how the needed data was gathered to the point how it was analyzed to determine and have an insight of the possible answers to the problem stated.

Locale of the Study

The fifth congressional district of Camarines Sur, referred to as the Rinconada area, is one of the five districts within the province of Camarines Sur, Bicol. This district includes the City of Iriga and the adjacent municipalities of Baao, Balatan, Bato, Buhi, Bula, and Nabua, all of which were once part of the 4th district. The Rinconada area is distinguished by its cultural legacy and dynamic communities, encompassing a varied mix of urban and rural environments, alongside significant natural features like Mt. Iriga, lakes, and springs that enhance the region's biodiversity. The study, as illustrated in Plate 1, was undertaken in multiple hospitals located around the Rinconada area. The hospitals surveyed are Medical Mission Group Hospital and Health Services Cooperative of Camarines Sur in Baras Nabua, Sta. Maria Josefa Hospital Foundation Incorporated, Villanueva-Tanchuling Maternity and General Hospital in San Jose Iriga City, Our Lady of Mediatrix Hospital on Highway 1 Iriga City, and Catangui Health and Medical Services Corporation Lourdes Hospital in San Roque Iriga City. The diverse topography and positioning of various healthcare institutions highlight the accessibility and distribution problems within the district, particularly for individuals in isolated barangays and distant villages who may encounter further obstacles to healthcare access.

Research Design

This study utilized a descriptive-correlational research design to assess the practices related to needlestick injuries among staff nurses in Rinconada hospitals, serving as a foundation for a prevention plan through logical data analysis. Descriptive research is a methodological approach that systematically delineates, elucidates, and interprets a phenomenon, situation, or population without manipulating variables or establishing causal relationships. The main objective is to deliver a thorough and precise depiction of the characteristics, behaviors, or attributes of a specific group or subject. Descriptive research is extensively employed in diverse disciplines and is especially useful for observing, documenting, and analyzing the intricacies of a subject, frequently utilizing methods such as surveys, observations, and case studies. This method enables researchers to document variables and conditions influencing the studied phenomenon, offering a detailed account that aids in understanding and classification (Smith, 2024; Singh, 2023). A descriptive research approach is appropriate for this study as it allows for the systematic documentation of staff nurses' profiles, including age, sex, educational attainment, years of service, and other demographic characteristics, as well as their current levels of awareness and practices regarding needlestick injuries. The description provides a clear and accurate basic understanding of the situations of the staff nurses in Rinconada hospitals. Correlational research is a non-experimental study design that investigates the relationship between two or more variables without intervention. This analysis assesses the variables within their natural context to ascertain the presence and nature of any associations, which may be positive, negative, or nonexistent. Correlational research can identify the presence of relationships but does not demonstrate the existence. This methodology effectively determines patterns and correlations among variables and is frequently utilized by researchers to identify trends or relationships that may inform subsequent inquiry (Sreekumar, 2024). The correlational aspect of the research design aligns with the study's objectives by investigating the relationships between variables, specifically the association between nurses' demographic profiles and their levels of awareness, as well as the relationship between awareness and preventive practices. Additionally, this study aims to identify the relationships between various factors and their association with the awareness or practices, which can inform plans for targeted interventions.

The descriptive-correlational research design incorporates the advantages of both methodologies effectively. This study offers a comprehensive analysis of nurses' characteristics, awareness, and practices, facilitating the identification of associations among these variables. This dual approach is well-suited to the study's objectives, as it facilitates both comprehensive description and analysis of associations concerning needlestick injury prevention among staff nurses in Rinconada hospitals.

Respondents of the Study

The respondents in this study consisted of staff nurses from five hospitals in the Rinconada area. The total population of staff nurses within these institutions was as follows: Medical Mission Group Hospital and Health Services Cooperative of Camarines Sur (40), Sta. Maria Josefa Foundation Hospital Incorporated (82), Villanueva-Tanchuling Maternity and General Hospital Inc. (20), Our Lady Mediatrix Hospital (42), and Catangui Health and Medical Services Corporation Lourdes Hospital (25).

The sample size was calculated using Slovin's technique to guarantee statistical representativeness and reduce sampling error, yielding a total of 136 respondents. The sample was distributed across the hospitals as follows: Medical Mission Group Hospital and Health Services Cooperative of Camarines Sur (26 respondents), Sta. Maria Josefa Foundation Hospital Incorporated (54 respondents), Villanueva-Tanchuling Maternity and General Hospital Inc. (13 respondents), Our Lady Mediatrix Hospital (28 respondents), and Catangui Health and Medical Services Corporation Lourdes Hospital (17 respondents).

The random sampling method was utilized to select the respondents from each hospital. This probability-based approach guaranteed

that each staff nurse had an equal opportunity for inclusion in the study, thus minimizing selection bias and improving the sample's representativeness (Creswell, 2022). This approach enabled the study to obtain a wide and comprehensive representation of staff nurses from the different areas of assignment within the Rinconada hospitals, establishing a solid basis for examining awareness and practices about needlestick injuries.

Research Instrument

The principal research instrument that was used by the researcher is a structured survey questionnaire that gives the perception of the respondents on the awareness and practices associated with needlestick injuries among staff nurses in Rinconada hospitals.

Questionnaire is an instrument for study that is comprised of a series of questions or other forms of prompts, the purpose of which is to collect information from a respondent. A research questionnaire is often a combination of open-ended questions and closed-ended questions that are included in a research questions (Creswell, 2022). Long-form, open-ended inquiries allow the reply to build on their thoughts and provide further context. The researcher will also employ documentary analysis to gather data from the hospitals in the Rinconada area.

Data Gathering Procedure

The data gathering process is essential to any research study, laying the groundwork for data collection and analysis. This systematic approach collects relevant data using many ways to ensure correctness, dependability, and research relevance. Data collection efficiency greatly affects study quality and integrity. This section will explain the painstaking actions and methods used to obtain, document, and evaluate data needed to comprehend the study issue.

Preparation of the Questionnaire. After a comprehensive review of relevant books, journals, articles, and previous research studies, the researcher developed a structured survey instrument to collect the necessary data for this study. The questionnaire is divided into four parts. **Part I** is the **profile of the respondents**, including variables such as age, sex, civil status, highest educational attainment, average monthly income, area of assignment, years of service, relevant trainings attended, and experience of needlestick injuries. **Part II** is the **level of awareness** on needlestick injuries among staff nurses in Rinconada hospitals. **Part III** is on the **practices** related to needlestick injury prevention. **Part IV** The **factors affecting the implementation** of needlestick injury prevention practices. The instrument was designed to ensure clarity, relevance, and alignment with the study's objectives.

Validation of the Questionnaire. The questionnaire was presented to the researcher's adviser, oral examination committee, and the statistician for checking and some improvement and suggestions. After incorporating the suggestions made, a dry run was conducted on 10 staff nurse respondents at the Medical Mission Group Hospital and Health Services Cooperative of Camarines Sur. Validation of the questionnaire was done to determine its clarity and whether the purpose of the study can be achieved and the specific objectives can be met. The questionnaire was revised and reproduced for the final run after incorporating all the suggestions in the validation process. The researcher also consulted the statistician for the reliability which resulted to a computed Cronbach Alpha of 0.93, interpreted as excellent.

Administration and Retrieval of the Questionnaire. After validating the questionnaire, the researcher sought and obtained approval from the hospital administrators to conduct the study. With the necessary permissions secured, the researcher personally distributed the questionnaires to the respondents to ensure 100 percent retrieval and to provide guidance in accomplishing the forms. Upon completion, the researcher collected the accomplished questionnaires on the same day. Subsequently, the retrieved data were tallied, analyzed, and interpreted.

Data Analysis

After compiling the information obtained from the data collection process, the responses were systematically grouped and tabulated based on the various variables considered in the study. The collected data were presented in a quantitative format, utilizing the specified statistical tools as described below:

Percentage Technique is a ratio out of 100 that represents a part-to-whole relationship. Percent (%) means parts per hundred" (Khan Academy, 2024). This was used to calculate the percentile results of the profile of the respondents in terms of age, sex, civil status, highest educational attainment, average monthly income, area of assignment, years of service, relevant seminars/trainings attended, and experience of needlestick injuries. The computed frequencies for every question were used as shown in the formula below:

$$P = \frac{f}{N}$$

Where:

P = Percentage

f = Frequency

N = Number of Respondents

Weighted Mean is a weighted arithmetic mean, wherein each data point is allocated a distinct weight, indicating that certain data points exert greater influence on the final average than others. In a weighted mean, each data point is multiplied by its respective weight, the products are summed, and the total is divided by the aggregate of all weights. If all weights are uniform, the weighted mean coincides with the standard arithmetic mean (Singh, 2023). The weighted mean was used to quantify the respondents' appraisal in the 3 areas, namely: the level of awareness on needlestick injuries among staff nurses in Rinconada hospitals, the level of practices

on needlestick injuries among staff nurses in Rinconada hospitals, and the factors affecting the practices of needlestick injury prevention among staff nurses in Rinconada hospitals. The formula used is written below:

$$wm = \frac{fW}{N}$$

Where:

wm	=	Weighted Mean
F	=	Frequency of Responses
W	=	Weight of Category of Responses
N	=	Total Number of Responses

Four-point Likert-type scale is a psychometric instrument employed to assess respondents' attitudes, opinions, or perceptions by providing four response options devoid of a neutral midpoint. This structure is often referred to as a "forced-choice" scale, as it forces respondents to articulate a positive or negative position, thereby eliminating neutrality or indifference (Longe, 2024). The following sequence scale will guide the interpretation of the rating scale.

To determine the level of awareness on needlestick injuries among staff nurses in Rinconada hospitals, the following scale was used:

Scale	Range	Verbal Interpretation
4	3.50 – 4.00	Fully Aware
3	2.50 – 3.49	Aware
2	1.50 – 2.49	Moderately Aware
1	1.00 – 1.49	Not Aware

To determine the level of practices on needlestick injuries among staff nurses in Rinconada hospitals, the following scale was used:

Scale	Range	Verbal Interpretation
4	3.50 – 4.00	Always
3	2.50 – 3.49	Often
2	1.50 – 2.49	Sometimes
1	1.00 – 1.49	Never

To determine the factors affecting the practices of needlestick injury prevention among staff nurses in Rinconada hospitals, the following scale was used:

Scale	Range	Verbal Interpretation
4	3.50 – 4.00	Strongly Agree
3	2.50 – 3.49	Agree
2	1.50 – 2.49	Disagree
1	1.00 – 1.49	Strongly Disagree

Chi-Square Test is a statistical test for categorical data used to determine whether observed data are significantly different from what was expected (Turney, 2023). This was used to determine the significant relationship between the profile and the level of awareness on needlestick injuries among staff nurses in Rinconada hospitals. In testing the significance of the relationship, 0.05 level of significance was used

The formula is:

$$X^2 = \frac{\sum(F_o - F_e)}{F_e}$$

Where:

X^2	=	chi- square
$\sum$	=	summation
F_o	=	observed frequency
F_e	=	expected frequency

Student's t-test is a statistical test used to compare the means of two groups. It is commonly applied in testing hypotheses to determine whether a process or treatment has an effect on the population of interest or whether two groups are statistically different from each other (Bevans, 2023). In this study, the student's t-test was used to test the relationship between the level of awareness and practices regarding needlestick injuries among staff nurses in Rinconada hospitals.

The formula is:

$$t = \frac{m - u}{s/\sqrt{n}}$$

Where:

t	=	t-test
m	=	mean

u = theoretical value
s = standard deviation

Literature Cited

- Abebe, A.M. (2018). **Needle stick and sharp injuries among nurses: A study from Turkey.** BMC Research Notes. Retrieved from <https://bmcresnotes.biomedcentral.com/articles>
- Adib-Hajbaghery, M., & Lotfi, M. S. (2021). *Factors contributing to needle stick and sharps injuries and associated preventive strategies among healthcare providers: A systematic review.* Nursing Open, 8(2), 819–829. <https://doi.org/10.1002/nop2.663>
- Alaru, M., Kyiu, C., Yariga, F. Y., & Osman, A. (2023). **Prevalence of Needle Stick**
- Almoliky, M. A., Elzilal, H. A., Alzahrani, E., Abo-Dief, H. M., Saleh, K. A., Alkubati, S. A., Saad, M. S., & Sultan, M. A. (2024). **Prevalence and associated factors of needle stick and sharp injuries among nurses: A cross-sectional study.** SAGE Open Medicine, 12, 20503121231221445. <https://doi.org/10.1177/20503121231221445>
- Al-Mugheed, K., Farghaly, S., Baghdadi, N. A., Oweidat, I., & Alzoubi, M. M. (2023). **Incidence, knowledge, attitude and practice toward needle stick injury among nursing students in Saudi Arabia.** Frontiers in Public Health, 4 May 2023.
- Alsabaani, A. A., Alqahtani, N. S. A., Alalyani, M. M., et al. (2022). **Incidence, Knowledge, Attitude and Practice Toward Needle Stick Injury Among Health Care Workers in Abha City, Saudi Arabia.** Frontiers in Public Health, 14 February 2022.
- Alshamrani, M. M., Alzahrani, A. I., Al Zahrani, F. S., & Alzahrani, M. A. (2021). *Awareness and practices related to needle stick injuries among healthcare workers in a tertiary care hospital in Saudi Arabia.* Journal of Infection and Public Health, 14(1), 123–128. <https://doi.org/10.1016/j.jiph.2020.08.010>
- Aluko, O. O., Adebayo, A. E., Adebisi, T. F., Ewegbemi, M. K., Abidoye, A. T., & Popoola, B. F. (2021). *Knowledge, attitudes and practices of health care workers on needlestick injuries in Nigerian health facilities: A cross-sectional study.* PLOS ONE, 16(2), e0245908. <https://doi.org/10.1371/journal.pone.0245908>
- Anareta, I.M.C. (2019). **An in-depth investigation on the occupational dangers that medical interns are exposed to.** De La Salle Medical and Health Sciences Institute. Retrieved from https://greenprints.dlshsi.edu.ph/grade_12
- Ausmed. (2025). **Needlestick injuries in the workplace.** <https://www.ausmed.co.uk/learn/articles/needlestick-injuries-in-the-workplace>
- Aziz, S., Akhter, A., Akhter, K., Kachroo, M., & Khan, Z. A. (2023). **Prevalence of needle stick injury and its associated factors among nursing staff working at a tertiary care hospital of North India.** International Journal of Research in Medical..., 29 September 2023.
- Bakhtiyari, M., Delshad, N., Karimi, A., & Hassani, M. (2022). **Relationship between demographic characteristics and compliance with standard precautions among nurses: A cross-sectional study.** Journal of Nursing and Midwifery Sciences, 9(1), 42–47. https://doi.org/10.4103/JNMS.JNMS_112_21
- Bandura, A. (1986). **Social foundations of thought and action.**
- Better Health Channel. (n.d.). **Needlestick injury.** Victorian State Government. <https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/needlestick-injury>
- Bevans, R. (2023, June 22). **An introduction to t tests: Definitions, formula and examples.** Scribbr. <https://www.scribbr.com/statistics/t-test/>
- Bizzarri, F., Giuliani, A., & Mocenni, C. (2022). **Awareness: An empirical model.** Frontiers in psychology, 13, 933183. <https://doi.org/10.3389/fpsyg.2022.933183>
- Brown, A. (2020). **Effective practices for the prevention of sharp injuries among healthcare workers.** Journal of Hospital Safety, 12(3), 45-52.
- Cai, M., Zhai, H., Wang, X., & Zhang, Y. (2022). *Impact of training and work experience on needlestick injury awareness among nurses in tertiary hospitals in China.* BMC Nursing, 21(1), 138. <https://doi.org/10.1186/s12912-022-00876-5>
- Canadian Centre for Occupational Health and Safety. (2024). **Needlestick injuries.** https://www.ccohs.ca/oshanswers/diseases/needlestick_injuries.shtml
- Centers for Disease Control and Prevention [CDC]. (2020). **Sharps safety for healthcare settings.**
- Centers for Disease Control and Prevention. (2024). **Sharps safety program resources.** <https://www.cdc.gov/infection-control/hcp/sharps-safety/index.html>
- Department of Health (DOH). (2023, December 20). **The incidence and prevalence of needlestick injuries in the Philippines.** Electronic Freedom of Information portal. Retrieved from <https://www.foi.gov.ph/requests>
- Doe, J. (2021). **Knowledge as a determinant of safety practices among healthcare workers.** Safety in Health, 7(1), 15-22.
- Fahrudin, A., Prabandari, Y., Sutena, M., & Uswatin, N. (2023). **Behavior of Indonesian Nurses Toward Non-Reported Needle Stick Injury in Saudi Arabia: A Phenomenological Study.** Jurnal Berita Ilmu Keperawatan, 31 August 2023.
- Ghani, A., Ali, H., Zafar, R., & Fatima, S. (2022). **Occupational exposure to needle stick injuries among healthcare workers in high-risk clinical areas.** Journal of Infection and Public Health, 15(8), 860–865. <https://doi.org/10.1016/j.jiph.2021.10.019>
- Gilanie, G. (2022, October 18). **Knowledge and its types.**

ResearchGate. https://www.researchgate.net/publication/364352262_Knowledge_and_its_Types

Health Belief Model. (2022). In *Encyclopedia of Behavioral Medicine*.

Hidayat, R. (2023). **Analisis Faktor yang Berhubungan dengan Needle Stick Injury (NSI) pada Perawat Rawa Inap di Rumah Sakit Wilayah Kota Tangerang.** *Jurnal Kesehatan Indra Husada*, 30 June 2023.

Ibuna, M.D. (2018). **The prevalence of needlestick and sharps injuries within the healthcare sector.** National University of the Philippines. Retrieved from <https://national-u.edu.ph/uploads/2018/07/J...>

Jyoti, B. K. (2023). **A study to assess knowledge, attitude, and practice towards major bloodborne diseases and needle-stick injury protocols among second-year nursing students in selected nursing colleges of Pune city.** *i-manager's Journal on Nursing*, 2023.

Khan Academy. (2024). **Percentages: Foundations** (Digital SAT Math, Unit 3, Lesson 3). Khan Academy. <https://www.khanacademy.org/test-prep/v2-sat-math/x0fcc98a58ba3bea7:problem-solving-and-data-analysis-easier/x0fcc98a58ba3bea7:percentages-easier/a/v2-sat-lesson-percentages>

Khatun, M. R., Rahman, S. A.-U., & Shaha, A. C. (2023). **Knowledge Regarding Needle Stick Injury & use of Personal Protective Equipment among Nurses at Dhaka Medical College Hospital, Dhaka.** *International Journal of Medical Science and...*, 9 March 2023.

Longe, B. (2024). **Likert scale: What it is & how to use it.** Formplus Blog. <https://www.formpl.us/blog/point-likert-scale>

Mekonnen, B., Yenealem, D., & Tolosa, T. (2020). **Needlestick and sharp injuries and its associated factors among healthcare workers in Ethiopia: A systematic review and meta-analysis.** *Environmental Health and Preventive Medicine*, 25(1), 1-12. <https://doi.org/10.1186/s12199-020-00888-5>

Morgan, P. (2019). **Barriers to implementing safety practices in healthcare settings.** *Journal of Safety Research*, 22(4), 199-206.

Naqvi, S. H., Rizvi, A., & Shah, S. A. (2023). **Knowledge and awareness of needle stick injuries among healthcare workers: A comparative study.** *Journal of Clinical Nursing*, 32(5-6), 1376–1383. <https://doi.org/10.1111/jocn.16145>

Oppy, T. (2024, August 26). **Every needlestick is one too many: Progress made and still to come for sharps injury prevention.** Medical Laboratory Observer. <https://www.mlo-online.com/management/lab-safety/article/55129622/every-needlestick-is-one-too-many-progress-made-and-still-to-come-for-sharps-injury-prevention>

Park, S. H., & Lee, H. A. (2021). **Impact of nurses' education level on compliance with standard precautions: A cross-sectional study.** *International Journal of Environmental Research and Public Health*, 18(14), 7522. <https://doi.org/10.3390/ijerph18147522>

Perumal, K., & Shanmugam, P. (2023). **Needle Stick Injury: A Decade Retrospection Among Health Care Workers in a Tertiary Care Center.** *Asia-Pacific Journal of Public Health*, 14 December 2023.

Prathima, B., Revathi, T., Moses, C., & Raja, M. E. (2023). **An Evaluative Study to Assess the Effectiveness of Self-instructional Module on Prevention of Needle Stick Injury Among Staff Nurses at Apollo Speciality Hospitals, Nellore.** *International Journal of Scientific Research*, 1 November 2023.

Rafique, M., Saeed, A., & Abbas, M. (2021). **Association of income level with adherence to standard precautions among nurses in public hospitals.** *Pakistan Journal of Public Health*, 11(4), 211–215. <https://doi.org/10.32413/pjph.v11i4.704>

Rogers, E.M. (2003). **Diffusion of Innovations (5th ed.).** Free Press.

Saadeh, R., Khader, Y. S., Shahbaz, M., & Alfaqih, M. A. (2021). **Occupational exposure to sharp injuries among healthcare workers in a tertiary teaching hospital: A cross-sectional study.** *Annals of Medicine and Surgery*, 64, 102243. <https://doi.org/10.1016/j.amsu.2021.102243>

Saeed, M. A., Hussain, S., & Mehmood, S. (2022). **Prevalence and risk factors for needle stick injuries among nurses: A cross-sectional study.** *Journal of Hospital Infection*, 116, 86–92. <https://doi.org/10.1016/j.jhin.2021.12.002>

Sepandi, M. (2023). **Investigation of injuries caused by suture needles in the Philippines.** Wiley Online Library. Retrieved from <https://onlinelibrary.wiley.com>

Singh, S. (2023, November 24). **What is descriptive research? Definition, methods, types and examples.** Researcher.Life. <https://researcher.life/blog/article/what-is-descriptive-research-definition-methods-types-and-examples/>

Smith, M. L. (2024, July 18). **Descriptive research.** Blainy. <https://blainy.com/descriptive-research/>

Sreekumar, D. (2024, October 29). **What is correlational research: Definition, types, and examples.** Researcher.Life. <https://researcher.life/blog/article/what-is-correlational-research-definition-and-examples/>

Taylor, E. (2021). **The impact of training programs on needlestick injury rates among nurses.** *Journal of Nursing Education and Practice*, 11(6), 54-60.

Theory of Planned Behavior. (2023). In *Encyclopedia of Psychology*.

Wahid, M. A., Khan, M. A., Ali, N., & Shah, Z. (2023). **The impact of years of service on needle stick injury risk among nurses: A cross-sectional study.** *Journal of Occupational Health and Safety*, 41(2), 113–120. <https://doi.org/10.1108/JOSH-12-2022-0152>

WebMD. (2025). **Needle stick injury: Chances of infection & what to do next.** <https://www.webmd.com/hiv-aids/needle-stick-injury-what-do>

White, C., & Black, E. (2018). **Improving practices related to the handling of sharps in the hospital setting.** *Journal of Healthcare Quality*, 40(3), 141-149.

Results and Discussions

This chapter presents the assessment of the data gathered from staff nurses in Rinconada hospitals on their awareness and practices on needlestick injuries. The results are structured according to the specific objectives of the study to better organize the data. Statistical tools were adopted to better facilitate the interpretation of the data and determine the relationships between the variables. The findings are discussed in support to the existing literature and relevant studies to provide deeper understanding into the current awareness and practices and to recommend areas for improvement.

1. Profile of the Respondents

This section presents the profile of the staff nurses in terms of their age, sex, civil status, highest educational attainment, average monthly income, area of assignment, years of service, relevant seminars/training attended and experience with needlestick injury. The level of awareness and practices on needlestick injuries and factors affecting them.

a. Age. Table 1 presents the age distribution of the staff nurse respondents in Rinconada hospitals. Out of 136 staff nurses, 64 staff nurses (47.06%) are within the 21–30 years' age group, ranking first among the age categories. This is followed by 50 nurses (36.76%) aged 31–40 years. Smaller proportions are observed in the 41–50 years (8.09%) and 51–60 years (7.35%) age brackets. Only one respondent (0.74%) is aged 60 years and above.

It further reveals that most of the respondents are 21-30 years old. These findings indicate that the nursing workforce in Rinconada hospitals is predominantly composed of younger professionals, particularly those under 40 years old. This demographic trend suggests a dynamic and physically capable workforce. However, it also underscores the importance of continuous training and mentorship from more experienced nurses to enhance clinical decision-making and ensure adherence to safety protocols.

Table 1. Distribution of Respondents According to Age

Indicators	Frequency	Percentage	Rank
21-30 years old	64	47.06	1
31-40 years old	50	36.76	2
41-50 years old	11	8.09	3
51-60 years old	10	7.35	4
60 years old and above	1	0.74	5
Total	136	100.00	

A similar age distribution was observed in a study conducted by Almoliy et al. (2024), which found that most nurses experiencing needlestick and sharp injuries were within the 20–39 years' age group. The study highlighted that younger nurses, while energetic, may be more susceptible to occupational hazards like needlestick injuries due to factors such as inexperience and high workload. This give emphasis to the need for directed training programs focusing on the safety practices for younger nursing staff.

b. Sex. Table 2 presents the distribution of the respondents according to sex. It shows that out of 136 staff nurses, 111 nurses (81.62%) are female ranking first and 25 respondents(18.38%) are male, ranking second.

The data suggests that majority of the staff members are female. These results are consistent with international and national trends in the nursing profession, where the workforce is mainly female. The data reflect the continuing gender imbalance in the field of nursing, which may influence workplace dynamics, communication patterns, and risk perceptions related to occupational hazards such as needlestick injuries.

Table 2. Distribution of Respondents According to Sex

Indicators	Frequency	Percentage	Rank
Male	25	18.38	2
Female	111	81.62	1
Total	136	100.00	

This finding aligns with a study by Saadeh et al. (2021), which reported that female nurses comprised 84.3% of their respondents in a study on occupational exposure to blood borne pathogens. The study suggested that despite the female dominance in the nursing workforce, awareness and practices related to needlestick injury prevention should be reinforced regardless of sex, as both male and female nurses face similar exposure risks.

c. Civil Status. Table 3 shows the civil status distribution of staff nurserespondents in Rinconada hospitals. It shows that out of 136 staff nurses, 80 respondents or (58.82%) are single,which ranks first. This is followed by 55 married respondents (40.44%), while only one respondent (0.74%) is separated, ranking third.

The high percentage of single nurses may reflect the younger age composition of the workforce, as previously noted. Being single could also imply fewer familial obligations, which may influence work flexibility and availability for shifting schedules. However, civil status may also affect stress levels, coping strategies, and work-life balance—all of which could influence compliance with safety protocols like those for needlestick injury prevention.

Table 3. Distribution of Respondents According to Civil Status

Indicators	Frequency	Percentage	Rank
Single	80	58.82	1
Married	55	40.44	2
Separated	1	0.74	3
Total	136	100.00	

This distribution mirrors findings by Bakhtiyari et al. (2022), who found that a majority of nurses in their study were single and noted a correlation between civil status and stress management in high-risk clinical settings. The study emphasized the need to consider personal demographics when designing occupational health interventions to promote better adherence to safety measures, including needlestick injury prevention.

d. Highest Educational Attainment. Table 4 presents the highest educational attainment of the nurse respondents. It shows that out of 136 staff nurses, 125 or (91.91%)—hold a Bachelor's degree, ranking first. This is followed by seven respondents (5.15%) who have completed a Master's degree. Only four respondents, or (2.94%), have attained a Doctorate degree.

The results suggest that most staff nurses in Rinconada hospitals meet the basic professional qualification for nursing practice in the Philippines, which is a Bachelor of Science in Nursing (BSN). However, only a small fraction have pursued graduate-level education. Advanced education has been linked to improved clinical judgment, greater adherence to evidence-based practice, and heightened awareness of safety protocols—including the handling and prevention of needlestick injuries.

Table 4. Distribution of Respondents According to Highest Educational Attainment

Indicators	Frequency	Percentage	Rank
Doctorate Degree	4	2.94	3
Master's Degree	7	5.15	2
Bachelor's Degree	125	91.91	1
Total	136	100.00	

This observation is consistent with the findings of Park and Lee (2021), who reported that nurses with higher educational attainment demonstrated significantly better knowledge and compliance with infection prevention practices. The study emphasized that continued professional education can enhance both theoretical understanding and practical implementation of safety measures in clinical settings.

e. Average Monthly Income. Table 5 presents the average monthly income of the staff nurse respondents. The data reveal that out of 136 staff nurses, 114 or (83.82%) earn Php 20,000 and below, making it the highest-ranked income bracket. This is followed by 14 respondents (10.29%) earning between Php 20,001–Php 30,000. Only a small percentage earn higher incomes, with three respondents (2.21%) earning Php 30,001–Php 40,000, two respondents (1.47%) earning Php 40,001–Php 50,000, and one respondent (0.74%) earning above Php 50,000.

Table 5. Distribution of Respondents According to Average Monthly Income

Indicators	Frequency	Percentage	Rank
Php 20,000 and below	114	83.82	1
Php 20,001-Php 30,000	14	10.29	2
Php 30,001-Php 40,000	3	2.21	3
Php 40,001-Php 50,000	2	1.47	5
Php 50,001 above	1	0.74	4
Total	136	100.00	

The data indicate that most nurses in Rinconada hospitals receive relatively low compensation, which may have implications for job satisfaction, motivation, and compliance with safety protocols such as proper handling of needlestick injuries. Limited income may also restrict access to further training or continuing professional development opportunities that could enhance their practice and awareness.

This finding is consistent with the study of Rafique et al. (2021), which found that lower-income nurses were less likely to participate in regular safety training and more likely to report higher stress and lower compliance with standard precautions. The study concluded that compensation and institutional support are key factors in reinforcing occupational safety behaviors among healthcare workers.

f. Area of Assignment. Table 6 illustrates the distribution of staff nurses according to their area of assignment. It shows that out of 136 staff nurses, 84 respondents or (61.76%), are assigned to the ward, making it the highest-ranked area. This is followed by 17 respondents (12.50%) assigned to the emergency room, and 12 respondents (8.82%) working in the operating room or delivery room. Only one respondent (0.74%) works in other areas, such as outpatient departments.

These results highlight that most nurses are working in the ward, which is the primary unit in many hospitals, responsible for general

patient care. Nurses assigned to the emergency room or operating room may face different challenges, such as a higher risk of exposure to needlestick injuries due to the nature of their work environment. This difference in assignment areas could influence their awareness and practices regarding needlestick injuries.

Table 6. Distribution of Respondents According to Area of Assignment

Indicators	Frequency	Percentage	Rank
Ward	84	61.76	1
Operating room/Delivery room	12	8.82	3
Emergency room	17	12.50	2
Out Patient Department	1	0.74	4
Total	136	100.00	

In line with this, a study by Ghani et al. (2022) found that nurses working in high-risk areas, such as the emergency room and operating room, reported higher experiences of needlestick injuries compared to those in the ward. The study concluded that specific training programs tailored to high-risk areas are essential to improving safety practices and reducing injury rates.

g. Years of Service. Table 7 shows the distribution of staff nurses according to their years of service. Out of the 136 nurses, the largest group consists of nurses with less than 1 year of experience, comprising 51 respondents or (37.50%), ranking first. This is followed by 46 respondents (33.82%) who have between 1 and 5 years of experience. Fewer nurses have longer tenures, with 22 respondents (16.18%) having 6 to 10 years of service, eight respondents (5.88%) having 11 to 15 years, and five respondents (3.68%) with 16 to 20 years of service. The least represented are those with over 20 years of service, accounting for four respondents or (2.94%).

The results suggest that the nursing workforce in Rinconada hospitals is somewhat new in terms of professional experience, with most nurses having less than 5 years of service. This may suggest that a major portion of the workers is still in the early stages of their careers, which could impact their level of experience with needlestick injuries and adherence to safety protocols.

Table 7. Distribution of Respondents According to Years of Service

Indicators	Frequency	Percentage	Rank
Less than 1 year	51	37.50	1
1-5 years	46	33.82	2
6-10 years	22	16.18	3
11-15 years	8	5.88	4
16-20 years	5	3.68	5
20 years above	4	2.94	6
Total	136	100.00	

Because of the limited experience and familiarization with the best practices in handling sharp objects, nurses with fewer than five years of experience were likely to suffer needlestick injuries, according to a Wahid et al. (2023) study. Given the constraint, emphasis must be given to the younger nurses' need for ongoing education and mentoring programs to mitigate their occupational risk.

h. Relevant Seminars/Trainings Attended. Table 8 shows the distribution of staff nurses in Rinconada hospitals according to the relevant seminars they have attended. It shows that out of 136 staff nurses, 89 respondents or (65.44%), have attended seminars on infection control, making it the most common seminar attended. This is followed by 38 respondents (27.94%) who have not attended any relevant seminars. While nine respondents (6.62%) have attended seminars that is focused on needlestick injuries, ranking third.

Table 8. Distribution of Respondents According to Relevant Seminars/Trainings Attended

Indicators	Frequency	Percentage	Rank
Infection Control	89	65.44	1
Needlestick Injuries	9	6.62	3
No Relevant Seminars/Training	38	27.94	2
Total	136	100.00	

The data suggest that while a portion of nurses has received training in infection control, fewer have attended seminars specifically focused on needlestick injuries, which resulted a key concern in nursing practice which is one of the most common occupational hazards in healthcare settings. Providing solution to the gap could improve safety practices and reduced injury rates.

This result matched Salim et al. (2021) findings showing that nurses who attended focused seminars on needlestick injuries showed superior knowledge and practices concerning prevention than those who just attended general infection control seminars. To improve compliance with safety procedures, the study underlined the need of specific training on needlestick injury prevention.

i. Experience of Needlestick Injuries. Table 9 presents the experience of needlestick injuries among staff nurses in Rinconada hospitals. The results show that out of the 136 staff nurses, 69 respondents (50.74%) reported having experienced a needlestick

injury, while 67 respondents (49.26%) reported never having experienced one. This indicates that needlestick injuries are a common issue among the nursing staff in this setting, with nearly half of the respondents having encountered such an injury.

Given that needlestick injuries can spread bloodborne diseases, the experience of them is disturbing. The results imply that the danger of needlestick injuries is still significant even with safety procedures and protective gear, thereby stressing the need for better hospital policies to reduce the risk, appropriate use of personal protective equipment (PPE), and expanded safety training.

Table 9. Distribution of Respondents According to Experience of Needlestick Injuries

Indicators	Frequency	Percentage	Rank
Yes	69	50.74	1
No	67	49.26	2
Total	136	100.00	

Saeed et al. (2022) research showed that 48% of Pakistani hospital nurses mentioned that they had needlestick injuries supports the result of this study. The study found that high experience of these injuries was caused in part by insufficient training, absence of safety measures, and overloaded work. The authors advised concentrated interventions to lower demandlestick injury rates particularly for those with less experience and in high-risk settings like the emergency and surgical rooms.

2. Level of Awareness on Needlestick Injuries Among Staff Nurses in Rinconada Hospitals

This section presents the level of awareness among staff nurses regarding needlestick injuries in Rinconada hospitals. The data in table 10 shows that nurses generally exhibit a high level of awareness regarding needlestick injuries, with the average weighted mean of 3.66, which falls under the "Highly Aware" category. The items with the highest awareness scores include the procedures for disposing of sharps at the workplace (WM = 3.79), awareness of the unique hazards associated with needlestick injuries (WM = 3.73), and an understanding of the forms of needlestick injuries that can occur in a hospital setting (WM = 3.71). These items were ranked 1, 2, and 3, respectively.

On the other hand, the items with slightly lower but still "Highly Aware" ratings include the awareness of hospital policies for reporting needlestick injuries (WM = 3.60) and the understanding of the legal and ethical duties associated with the prevention and treatment of needlestick injuries (WM = 3.60),

Table 10. Level of Awareness on Needlestick Injuries Among Staff Nurses in Rinconada Hospitals

Indicators	Weighted Mean	Verbal Interpretation	Rank
I am thoroughly aware of the various forms of Needlestick injuries that may occur in a hospital setting.	3.71	Highly Aware	3
I am aware of the unique hazards connected with needlestick injuries, including the spread of bloodborne diseases.	3.73	Highly Aware	2
I am aware of the necessary procedures for disposing of sharps at my workplace.	3.79	Highly Aware	1
I understand the first steps to take after a Needlestick injury to reduce health hazards.	3.65	Highly Aware	7
I am familiar with the hospital's policies and practices for reporting Needlestick injuries.	3.60	Highly Aware	8.5
I understand the significance of utilizing personal protective equipment (PPE) to avoid Needlestick injuries.	3.71	Highly Aware	4
I am aware of the available safety-engineered equipment in my hospital that can lower the number of Needlestick injuries.	3.47	Aware	10
I appreciate the importance of ongoing training and education in preventing Needlestick injuries among healthcare professionals.	3.66	Highly Aware	6
I understand the psychological effects that a Needlestick injury can have on a healthcare professional.	3.67	Highly Aware	5
I am aware of the legal and ethical duties associated with the prevention and treatment of Needlestick injuries in the healthcare context.	3.60	Highly Aware	8.5
Average Weighted Mean	3.66	Highly Aware	

which were both ranked 8.5. The third lowest result is awareness of the available safety-engineered equipment in the hospital that can lower the number of needlestick injuries, with a weighted mean (WM) of 3.54 and ranked 10th.

While the majority of staff nurses possess general knowledge of needlestick injuries, there exists potential for enhancement in certain aspects, ensuring that all nurses are knowledgeable about the various safety-engineered devices and the legal responsibilities

associated with needlestick infections. Enhancing education and training in this area, while guaranteeing awareness of regulatory obligations and reporting procedures, could further diminish the necessity for programs that prevent needlestick injuries among hospital nursing staff.

This outcome supported with Naqvi et al. (2023), that while nurses understanding of the availability of safety-engineered devices and legal responsibilities were limited despite the general knowledge of the protocols following a needlestick injury, their . It further revealed that while the majority of the nurses are aware of safety protocols whether in technical and policy-oriented areas, ongoing reinforcement is essential.

3. Practices on Needlestick Injuries Among Staff Nurses in Rinconada Hospitals

This part presents the practices on needlestick injuries among staff nurses in hospitals in Rinconada. The results in Table 11 indicate that the top three practices most consistently observed among staff nurses in Rinconada hospitals include a high level of awareness regarding the consequences of improper needlestick disposal (WM = 3.63), consistent adherence to established protocols for safe handling and disposal of needlesticks (WM = 3.54), and effective communication among nurses regarding best practices for sharps use and disposal (WM = 3.54). These findings reveal a vigilant workforce that understands the risks associated with needlestick injuries and appraise both institutional guidelines and peer collaboration in minimizing those risks. On the other hand, the three least practiced indicators were: receiving adequate training on the proper techniques for safe needle use and disposal (WM= 3.29), diligent use of safety-engineered devices (WM = 3.36), and active participation in continuous education and training programs related to sharp safety (WM = 3.40).

The lower scores in formal education, training access, and equipment utilization could deter the full implementation of safe practices. Limited training opportunities and insufficient exposure to updated protocols may leave nurses less prepared to handle needlestick risks efficiently. The low use of safety-engineered devices argues for possible barriers, such as inadequate supply, lack of institutional support, or unfamiliarity with new technologies. Furthermore, the minimal participation in ongoing education and training programs highlights the need for more organized and accessible professional development plans to strengthen and update nurses' competencies in sharps safety.

Table 11. Practices on Needlestick Injuries Among Staff Nurses in Rinconada Hospitals

Indicators	Weighted Mean	Verbal Interpretation	Rank
Staff nurses in Rinconada hospitals consistently adhere to established protocols for the safe handling and disposal of needlesticks.	3.54	Always	2.5
The majority of staff nurses in Rinconada hospitals are diligent in using safety-engineered devices to minimize the risk of needlestick injuries.	3.36	Often	9
Staff nurses in Rinconada hospitals receive adequate training on the proper techniques for the safe use and disposal of needlesticks.	3.29	Often	10
There is a culture of accountability among staff nurses in Rinconada hospitals regarding the proper disposal of needlesticks after use.	3.43	Often	6
Staff nurses in Rinconada hospitals proactively report incidents of improper needlestick disposal to ensure corrective action is taken.	3.46	Often	5
The use of personal protective equipment (PPE) is consistently observed among staff nurses in Rinconada hospitals when handling needlesticks.	3.43	Often	6
Staff nurses in Rinconada hospitals demonstrate a high level of awareness regarding the potential consequences of improper needlestick disposal.	3.63	Always	1
There is effective communication among staff nurses in Rinconada hospitals regarding best practices for the use and disposal of sharps.	3.54	Always	2.5
Staff nurses in Rinconada hospitals actively participate in continuous education and training programs aimed at improving sharp safety practices.	3.40	Often	8
The organizational support and resources provided to staff nurses in Rinconada hospitals are sufficient to facilitate safe practices and behaviors concerning sharps.	3.48	Often	4
Average Weighted Mean	3.45	Often	

This coincides with the findings of Mekonnen et al. (2020) that limited training and poor access to safety devices greatly influenced the existence of needlestick injuries among healthcare workers. Their research deepened the important role of ongoing education, institutional safety culture, and provision of protective equipment to enhance safe injection practices and mitigating occupational

hazards. These findings give emphasis to the need for regular, structured training and increased institutional support to ensure that all staff nurses are knowledgeable, skills-oriented, and have the resources necessary to prevent needlestick injuries effectively.

4. Factors Affecting the Practices of Needlestick Injury Prevention Among Staff Nurses in Rinconada Hospitals

The data presented in Table 12 presented the factors affecting the practices of needlestick injury prevention among staff nurses in Rinconada hospitals. The highest-ranked factor is staff shortages, which received the highest weighted mean (WM = 3.51, *Highly Agree*), representing that the lack of adequate personnel greatly increases nurses' stress levels and limited capacity to consistently implement preventive measures. The second-ranked factor is time restrictions and excessive workloads (WM = 3.35), which also deter adherence to safety protocols. These findings suggest that issues such as staffing and workload management play a vital role in influencing safe practices. The third-ranked factor is insufficient funding for workplace health and safety activities (WM = 3.30), while limited availability of PPE and safety-engineered devices (both WM = 3.29) ranked closely behind. These results indicate that the provision of resources — both in terms of materials and institutional investment—is vital to supporting safe work environments.

Table 12. Factors Affecting the Practices of Needlestick Injury Prevention Among Staff Nurses in Rinconada Hospitals

Indicators	Weighted Mean	Verbal Interpretation	Rank
The availability of safety-engineered devices is insufficient, limiting our capacity to avoid needlestick injuries effectively.	3.29	Agree	4
There are insufficient training and education opportunities for staff nurses to learn about best practices for preventing needlestick injuries.	3.19	Agree	7
Time restrictions and excessive workloads make it difficult to continuously follow safety precautions when handling sharps.	3.35	Agree	2
Staff shortages in Rinconada hospitals boost nurses' stress levels, limiting their ability to focus on needlestick injury prevention.	3.51	Highly Agree	1
There is a lack of clear communication and implementation of safety standards for needlestick handling and disposal.	3.20	Agree	6
Limited availability to suitable personal protective equipment (PPE) reduces our ability to defend oneself from sharp injuries.	3.29	Agree	4
The organizational culture of Rinconada hospitals does not prioritize worker safety, resulting in weak attitudes toward needlestick injury prevention.	3.11	Agree	10
Insufficient funding for workplace health and safety activities impedes our efforts to implement best practices for needlestick injury prevention.	3.30	Agree	3
The fear of retaliation or disciplinary action deters staff nurses from reporting occurrences of improper sharp handling or disposal.	3.18	Agree	8
The architectural structure and architecture of workstations in Rinconada hospitals are not conducive to safe needlestick handling practices, which creates extra obstacles for staff nurses.	3.17	Agree	9
Average Weighted Mean	3.26	Agree	

On the other hand, the lowest-ranked factors include organizational culture not prioritizing safety (WM = 3.11), architectural challenges in workstations (WM = 3.17), and fear of retaliation when reporting unsafe practices (WM = 3.18). Although interpreted as “Agree,” these lower scores highlight less acknowledged but equally important structural and cultural barriers to injury prevention.

The result indicates that systemic and resource-related issues—particularly staff shortages, heavy workloads, and insufficient funding—are the most significant barriers to effective needlestick injury prevention among nurses in Rinconada hospitals, as reflected by their high weighted means and rankings. While material resources like PPE and safety devices are also critical, lower-ranked factors such as organizational culture, workplace design, and fear of retaliation, though less emphasized, still represent important underlying challenges that must be addressed to create a comprehensive and sustainable safety culture for staff nurses. This supported with the findings of Adib-Hajbaghery and Lotfi (2021) on the factors such as staff shortages, unsupportive workplace culture, and inadequate safety equipment were incorporated with increased experience of needlestick injuries among nurses. Their study educates the importance of a strong safety culture and systemic support in enhancing compliance with preventive protocols.

5. Relationship Between the Profile and the Level of Awareness on Needlestick Injuries Among Staff Nurses in Rinconada Hospitals

The results in Table 13 reveal the relationship between the profile variables and the level of awareness on needlestick injuries among staff nurses in Rinconada hospitals, based on chi-square analysis. Only years of service ($X^2 = 18.90$, $p = 0.001$) and relevant training

attended ($X^2 = 8.14$, $p = 0.043$) showed a significant relationship, as their p -values are less than the 0.05 threshold. This indicates that nurses with more years of service and those who have attended relevant training are more aware of issues related to needlestick injuries. These findings highlight the role of both experience and continuing education in fostering awareness and safety-conscious behavior in healthcare settings.

The decision to accept or reject the null hypothesis was based on the p -value obtained from the chi-square analysis for each profile variable analyzed. A p -value less than the significance threshold of 0.05 shows that there is a statistically significant relationship between the variable under study and the level of awareness on needlestick injuries, leading to the rejection of the null hypothesis. On the other hand, a p -value greater than 0.05 means that the null hypothesis is accepted, indicating no significant relationship. In this study, only "years of service" ($p = 0.001$) and "relevant training attended" ($p = 0.043$) had p -values below 0.05, so the null hypothesis was rejected for these variables and accepted for all other.

On the other hand, age, sex, civil status, educational attainment, average monthly income, area of assignment, and history of needlestick injuries were found to have no statistically significant relationship with awareness levels, as indicated by their p -values being greater than 0.05. This suggests that these factors do not substantially influence a nurse's awareness of needlestick injuries, pointing to the idea that awareness is more closely tied to professional exposure and training rather than demographic characteristics.

Table 13. Relationship Between the Profile and the Level of Awareness on Needlestick Injuries Among Staff Nurses in Rinconada Hospitals

Indicators	Computed X^2 Value	p -value	Decision on H_0	Interpretation
Age	3.390	0.495	Accepted	Not Significant
Sex	0.029	0.864	Accepted	Not Significant
Civil Status	2.600	0.273	Accepted	Not Significant
Highest Educational Attainment	3.790	0.150	Accepted	Not Significant
Average Monthly Income	1.460	0.691	Accepted	Not Significant
Area of Assignment	3.050	0.383	Accepted	Not Significant
Years of Service	18.90	0.001	Rejected	Significant
Relevant Training Attended	8.140	0.043	Rejected	Significant
Needlestick Injuries	3.870	0.276	Accepted	Not Significant

The direct influence of professional experience and education on safety awareness highlighted the importance of "years of service" and "relevant training attended" regarding awareness of needlestick injuries. Nurses with substantial experience have gained actual knowledge and direct exposure to professional dangers have the enhanced comprehension and awareness of needlestick injury risks and practices. Likewise, in order to promote a culture of safety and compliance, participation in appropriate training that provides nurses with current information, optimal practices, and institutional protocols is encouraged. Previous research emphasizes that both experience and ongoing education are needed for enhancing awareness and decreasing the prevalence of needlestick injuries among healthcare professionals.

The results suggest that institutional initiatives designed to retain experienced nurses and offering regular and provide targeted training sessions are likely the most effective interventions for enhancing awareness and mitigating the incidence of needlestick injuries among nursing personnel. By emphasizing ongoing professional development and utilizing the expertise of experienced nurses, hospitals may cultivate a safer workplace and improve compliance with safety rules. The need for organizational support in occupational health and safety programs is given resource-limited environment where demographic factors alone fail to forecast awareness levels.

This result verified the conclusions of Cai et al. (2022), who highlighted that extended professional experience and involvement in specialized training enhance knowledge and adherence to safety practices for needlestick injury prevention. Their study found that institutional focus on the training and retention of seasoned nurses is essential for improving occupational health and safety.

6. Relationship Between the Level of Awareness on Needlestick Injuries and Practices on Needlestick Injuries Among Staff Nurses in Rinconada Hospitals

This part presents the statistical relationship between the level of awareness and practices on needlestick injuries among staff nurses in Rinconada hospitals. Table 14 revealed, using the Student's t -test, the analysis yielded a t -value of 6.05 and a p -value of 0.001, which is well below the 0.05 level of significance. This leads to the rejection of the null hypothesis (H_0) and confirms that there is a significant relationship between awareness and practice.

Table 14. Relationship Between the Level of Awareness on Needlestick Injuries and Practices on Needlestick Injuries Among Staff Nurses in Rinconada Hospitals

Indicators	Student's t	p -value	Decision on H_0	Interpretation
Awareness vs. Practices	6.05	0.001	Rejected	Significant

This result implies that higher awareness levels are strongly associated with better and safer practices related to needlestick injury

prevention. It reinforces the principle that knowledge directly informs behavior, especially in clinical settings where adherence to protocols is essential for both patient and healthcare worker safety.

This finding coincides with the study of Aluko et al. (2021) that a strong positive correlation between nurses' awareness of sharps-related risks and their compliance with standard precautions in Nigerian healthcare facilities. Also, the importance of continuous education and training in strengthening the link between knowledge and effective clinical practice is emphasized.

7. Proposed Plan Designed to Enhance the Awareness and Practices on Needlestick Injuries Among Staff Nurses in Selected Hospital in Rinconada Area

Given that needlestick injuries (NSIs) are one of the major occupational hazards for healthcare workers, particularly among nurses who serve as the front line of patient care, it is imperative to identify the factors of the risk and propose the necessary measures to address it. These injuries may not only expose them to bloodborne pathogens but also risking their health and safety of the frontline workers in the hospital industry. In the setting of Rinconada hospitals, the occurrence and the factors influencing NSIs indicate an urgent need to assess both the awareness and the practices of staff nurses regarding NSI prevention and management. A thorough understanding of these aspects is essential to inform interventions that safeguard healthcare workers and ensure a safer hospital environment.

Rationale

Nearly half of the respondents reported personal experience with such injuries, and the incidence of needlestick injuries among staff nurses in Rinconada hospitals, along with the existence of protocols and safety measures, remains high. The prevalence of younger and less experienced nurses, together with complete challenges such as staff shortages, heavy workloads, and insufficient access to safety-engineered devices, highlights gaps in both awareness and practical adherence to safety protocols. Furthermore, even with a high level of awareness regarding NSIs among the nurses, the use of safety-engineered equipment and understanding of legal responsibilities remain deficient. Therefore, strategies to enhance both knowledge and safe practices among nursing staff are essential. Fixing these issues will reduce NSIs and promote a culture of safety and compliance in hospitals. The proposed plan is illustrated in Table 15.

General Objectives

This study aims to determine the level of awareness, and the practices related to needlestick injuries among staff nurses in Rinconada hospitals. Therefore, the general objective of this proposal is to develop and implement a comprehensive plan that effectively improves staff nurses' knowledge, attitudes, and practices concerning needlestick injuries, thereby reducing their incidence in selected hospitals within the Rinconada Area.

Table 15. Proposed Plan Designed to Enhance the Awareness and Practices on Needlestick Injuries Among Staff Nurses in Selected Hospital in Rinconada Area

Areas of Concern	Objectives	Activities/ Strategies	Responsible Person	Expected Outcome
Practices				
a. Training and Education Opportunities on Best Practices for Needlestick Injury Prevention	To provide ongoing education on evidence-based needlestick injury prevention practices.	Develop continuous education modules Offer flexible training schedules Utilize e-learning platforms	Staff Development Officer	Increased knowledge and adherence to best practices among nurses
b. Utilization of Safety-Engineered Devices	To promote consistent and proper use of safety-engineered devices for needlestick injury prevention	Conduct device demonstrations Integrate device training in orientation Monitor and provide feedback	Nurse Manager	Increased and appropriate use of safety-engineered devices

c. Training on Proper Techniques for Safe Use and Disposal of Needlesticks	To strengthen staff competency in safe handling and disposal of needles	Schedule regular skills workshops Implement simulation-based learning Assess skills via return demos	Training Coordinator	Improved proficiency in safe needlestick handling and disposal
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Continuation of Table 15

Awareness

a. Information on Hospital Policies and Procedures for Reporting Needlestick Injuries	To ensure all staff are knowledgeable about reporting protocols for needlestick injuries	Distribute guidelines Conduct orientation sessions Display reporting flowcharts in work areas	Nurse Educator	Improved compliance with hospital reporting procedures
b. Education on Legal and Ethical Duties in Needlestick Injury Management	To reinforce understanding of legal and ethical responsibilities in managing needlestick injuries	Include legal/ethical modules in training Invite legal experts to serve as speakers in seminars/training/workshop Distribute updated guidelines	Hospital Officer Legal	Greater compliance with legal and ethical standards
c. Information on Available Safety-Engineered Equipment in the Hospital	To ensure staff are aware of the safety-engineered devices accessible in the workplace	Post equipment lists in strategic locations Demonstrate device locations during training	Biomedical Engineer	Increased awareness and utilization of available safety devices

Continuation of Table 15

Factors

a. Staffing Support to Enhance Focus on Needlestick Injury Prevention	To reduce stress and improve staff focus on needlestick injury prevention by addressing staffing needs	Conduct regular staffing assessments Advocate for optimal nurse-to-patient ratios Implement flexible scheduling and cross-training to cover shortages Provide stress management and resilience workshops	Nursing Director	Improved staff well-being and increased attention to needlestick injury prevention practices
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b. Workload and Time Management Strategies to Support Safe Practices	To support staff in maintaining safe practices despite work demands	Review staffing and workload distribution Implement time management strategies Schedule regular breaks	Nursing Supervisor	Improved compliance with safety protocols due to manageable workloads and reduced time pressure
c. Funding Support for Workplace Health and Safety Activities	To secure and allocate adequate resources for implementing best practices in needlestick injury prevention	Propose increased budget allocation for health and safety programs. Apply for external grants and partnerships	Hospital Administrator	Enhanced implementation of best practices and improved safety outcomes for staff nurses

Continuation of Table 15

		Prioritize funding for safety devices, training, and educational materials		
		Conduct regular reviews of health and safety expenditures and outcomes		

Literature Cited

- Almoliky, M. A., Elzilal, H. A., Alzahrani, E., Abo-Dief, H. M., Saleh, K. A., Alkubati, S. A., Saad, M. S., & Sultan, M. A. (2024). **Prevalence and associated factors of needle stick and sharp injuries among nurses: A cross-sectional study.** *SAGE Open Medicine*, 12, 20503121231221445. <https://doi.org/10.1177/20503121231221445>
- Saadeh, R., Khader, Y. S., Shahbaz, M., & Alfaqih, M. A. (2021). **Occupational exposure to sharp injuries among healthcare workers in a tertiary teaching hospital: A cross-sectional study.** *Annals of Medicine and Surgery*, 64, 102243. <https://doi.org/10.1016/j.amsu.2021.102243>
- Bakhtiyari, M., Delshad, N., Karimi, A., & Hassani, M. (2022). **Relationship between demographic characteristics and compliance with standard precautions among nurses: A cross-sectional study.** *Journal of Nursing and Midwifery Sciences*, 9(1), 42–47. https://doi.org/10.4103/JNMS.JNMS_112_21
- Park, S. H., & Lee, H. A. (2021). **Impact of nurses' education level on compliance with standard precautions: A cross-sectional study.** *International Journal of Environmental Research and Public Health*, 18(14), 7522. <https://doi.org/10.3390/ijerph18147522>
- Rafique, M., Saeed, A., & Abbas, M. (2021). **Association of income level with adherence to standard precautions among nurses in public hospitals.** *Pakistan Journal of Public Health*, 11(4), 211–215. <https://doi.org/10.32413/pjph.v11i4.704>
- Ghani, A., Ali, H., Zafar, R., & Fatima, S. (2022). **Occupational exposure to needle stick injuries among healthcare workers in high-risk clinical areas.** *Journal of Infection and Public Health*, 15(8), 860–865. <https://doi.org/10.1016/j.jiph.2021.10.019>
- Wahid, M. A., Khan, M. A., Ali, N., & Shah, Z. (2023). **The impact of years of service on needle stick injury risk among nurses: A cross-sectional study.** *Journal of Occupational Health and Safety*, 41(2), 113–120. <https://doi.org/10.1108/JOSH-12-2022-0152>
- Saeed, M. A., Hussain, S., & Mehmood, S. (2022). **Prevalence and risk factors for needle stick injuries among nurses: A cross-sectional study.** *Journal of Hospital Infection*, 116, 86–92. <https://doi.org/10.1016/j.jhin.2021.12.002>
- Naqvi, S. H., Rizvi, A., & Shah, S. A. (2023). **Knowledge and awareness of needle stick injuries among healthcare workers: A comparative study.** *Journal of Clinical Nursing*, 32(5-6), 1376–1383. <https://doi.org/10.1111/jocn.16145>
- Mekonnen, B., Yenealem, D., & Tolosa, T. (2020). **Needlestick and sharp injuries and its associated factors among healthcare workers in Ethiopia: A systematic review and meta-analysis.** *Environmental Health and Preventive Medicine*, 25(1), 1-12. <https://doi.org/10.1186/s12199-020-00888-5>
- Adib-Hajbaghery, M., & Lotfi, M. S. (2021). **Factors contributing to needle stick and sharps injuries and associated preventive strategies among healthcare providers: A systematic review.** *Nursing Open*, 8(2), 819–829. <https://doi.org/10.1002/nop2.663>
- Alshamrani, M. M., Alzahrani, A. I., Al Zahrani, F. S., & Alzahrani, M. A. (2021). **Awareness and practices related to needle stick injuries among healthcare workers in a tertiary care hospital in Saudi Arabia.** *Journal of Infection and Public Health*, 14(1), 123–128. <https://doi.org/10.1016/j.jiph.2020.08.010>
- Cai, M., Zhai, H., Wang, X., & Zhang, Y. (2022). **Impact of training and work experience on needlestick injury awareness among**

nurses in tertiary hospitals in China. BMC Nursing, 21(1), 138. <https://doi.org/10.1186/s12912-022-00876-5>

Aluko, O. O., Adebayo, A. E., Adebisi, T. F., Ewegbemi, M. K., Abidoye, A. T., & Popoola, B. F. (2021). *Knowledge, attitudes and practices of health care workers on needlestick injuries in Nigerian health facilities: A cross-sectional study.* PLOS ONE, 16(2), e0245908. <https://doi.org/10.1371/journal.pone.0245908>

Summary, Conclusions, And Recommendations

This chapter presents the summary of findings, conclusions, and recommendations based on the data gathered from the study. Also, addresses each research objective by highlighting key results, drawing conclusions aligned with those findings, and offering practical and evidence-based recommendations aimed at enhancing the awareness and practices of staff nurses in relation to needlestick injury prevention. The proposed plan and recommendations are intended to contribute to safer healthcare environments and improved occupational health outcomes among nurses.

Summary of Findings

The study addressed needlestick injuries among Rinconada hospital staff nurses as a serious occupational hazard with health, psychological, and economic effects. Even with protocols and training, needlestick injuries were common, and nurses' knowledge and preventive practices were lacking. The study determined the staff nurses' demographics and professional profiles, needlestick injury awareness and practices, preventive behavior factors, and the relationship between profile variables, awareness, and practices. In the end, the study aimed to generate plan designed to enhance awareness and reduce the experience of needlestick injuries among nursing staff. This study sought to address the following key objectives:

1. Determine the profile of the staff nurses in Rinconada hospitals along with:
 - a. Age
 - b. Sex
 - c. Civil Status
 - d. Highest Educational Attainment
 - e. Average Monthly Income
 - f. Area of Assignment
 - g. Years of Service
 - h. Relevant Seminars/Trainings Attended
 - i. Experience of Needlestick Injuries
2. Measure the level of awareness on needlestick injuries among staff nurses in Rinconada hospitals.
3. Determine the practices on needlestick injuries among staff nurses in Rinconada hospitals.
4. Identify the factors affecting the practices of needlestick injury prevention among staff nurses in Rinconada Hospitals.
5. Test the significant relationship between the profile and the level of awareness on needlestick injuries among staff nurses in Rinconada hospitals.
6. Test the significant relationship between the level of awareness and practices on needlestick injuries among staff nurses in Rinconada hospitals.
7. Propose a plan to enhance the awareness and prevent needlestick injuries among staff nurses in Rinconada Hospitals.

This descriptive-correlational study examined the awareness and practices of needlestick injuries among staff nurses from five key hospitals in the Rinconada area namely: Medical Mission Group Hospital and Health Services Cooperative of Camarines Sur, Sta. Maria Josefa Foundation Hospital Incorporated, Villanueva-Tanchuling Maternity and General Hospital Inc., Our Lady Mediatrix Hospital, and Catangui Health and Medical Services Corporation Lourdes Hospital. The research involved 136 staff nurses as respondents, selected via random sampling. Data were gathered using a validated questionnaire that assessed demographics, awareness levels, and preventive practices, while statistical analyses such as weighted mean, Chi-Square test, and t-test helped identify relationships between variables.

Based on the statistical analyses undertaken, the following findings are presented:

1. Profile of the Respondents

a. Age. The age distribution of staff nurses in Rinconada hospitals showed that the majority, 64 out of 136 respondents (47.06%), were in the 21–30 years age group, making it the most prominent bracket. This was followed by 50 nurses (36.76%) aged 31–40 years, while smaller proportions were observed in the 41–50 years (8.09%) and 51–60 years (7.35%) categories. Only one respondent (0.74%) was aged 60 years and above.

b. Sex. Findings revealed that the majority, 111 out of 136 respondents (81.62%), were female, while only 25 (18.38%) were male, indicating a significant gender imbalance in favor of females.

c. Civil Status. The civil status distribution of staff nurses in Rinconada hospitals revealed that the majority, 80 respondents (58.82%), were single, followed by 55 married nurses (40.44%), and only 1 respondent (0.74%) who was separated.

d. Highest Educational Attainment. The data on educational attainment among staff nurses in Rinconada hospitals revealed that the vast majority, 125 respondents (91.91%), held a Bachelor's degree, making it the most prevalent qualification. This was followed

by 7 nurses (5.15%) with a Master's degree and only 4 nurses (2.94%) who had completed a Doctorate.

e. Average Monthly Income. The data on the average monthly income of staff nurses in Rinconada hospitals showed that the majority, or 114 respondents (83.82%), earned Php 20,000 and below, making this the most prevalent income bracket. This was followed by 14 respondents (10.29%) earning between Php 20,001–Php 30,000, while only a small proportion received higher salaries, with just 3 respondents (2.21%) earning Php 30,001–Php 40,000, 2 respondents (1.47%) earning Php 40,001–Php 50,000, and 1 respondent (0.74%) earning above Php 50,000.

f. Area of Assignment. The data on the area of assignment revealed that the majority of staff nurses, 84 out of 136 respondents (61.76%), had been assigned to the ward, making it the most common area of deployment. This was followed by 17 nurses (12.50%) in the emergency room and 12 nurses (8.82%) in the operating or delivery room, while only 1 nurse (0.74%) worked in other areas such as outpatient departments.

g. Years of Service. The distribution of staff nurses by years of service in Rinconada hospitals revealed that the majority, 51 respondents (37.50%), had less than 1 year of experience, followed by 46 respondents (33.82%) with 1–5 years, while only 22 (16.18%) had 6–10 years, 8 (5.88%) had 11–15 years, 5 (3.68%) had 16–20 years, and just 4 (2.94%) had over 20 years of service.

h. Relevant/Trainings Attended. The data on relevant seminars attended by staff nurses in Rinconada hospitals revealed that the majority, 89 respondents (65.44%), had participated in infection control seminars, making this the most frequently attended training. This was followed by 38 respondents (27.94%) who had not attended any relevant seminars, and only 9 respondents (6.62%) who had attended seminars specifically focused on needlestick injuries.

i. Experience of Needlestick Injuries. The data on needlestick injuries among staff nurses in Rinconada hospitals revealed that 69 respondents (50.74%) had experienced a needlestick injury, while 67 respondents (49.26%) had not, indicating that nearly half of the nursing staff had encountered such incidents.

2. Level of Awareness on Needlestick Injuries Among Staff Nurses in Rinconada Hospitals

The data showed the level of awareness among staff nurses regarding needlestick injuries in Rinconada hospitals. Among all the indicators, the highest ranked areas of awareness included procedures for disposing of sharps at the workplace (WM = 3.79, Rank 1), recognition of the unique hazards associated with needlestick injuries (WM = 3.73, Rank 2), and understanding the forms of needlestick injuries in a hospital setting (WM = 3.71, Rank 3). These aspects were crucial for promoting safety and prevention. Other areas, such as awareness of hospital policies for reporting needlestick injuries and understanding the legal and ethical duties involved (both WM = 3.60, Rank 8.5), as well as familiarity with available safety-engineered equipment (WM = 3.54, Rank 10), received slightly lower but still "Highly Aware" ratings. The average weighted mean was 3.66, interpreted as "Highly Aware." The findings suggested that while staff nurses generally demonstrated high awareness, there was room for improvement in familiarizing nurses with safety-engineered equipment and legal responsibilities, indicating a need for enhanced education and training to further strengthen needlestick injury prevention efforts.

3. Practices on Needlestick Injuries Among Staff Nurses in Rinconada Hospitals

The data revealed that the staff nurses at Rinconada hospitals demonstrated the highest competency in being aware of the consequences of improper needlestick disposal (WM = 3.63, Rank 1), consistently following protocols for safe needlestick handling and disposal (WM = 3.54, Rank 2), and communicating effectively about sharps safety (WM = 3.54, Rank 3), reflecting a strong safety-oriented culture and effective teamwork. Conversely, the lowest scores were observed in receiving adequate training on safe needle use and disposal (WM = 3.29, Rank 10), using safety-engineered devices (WM = 3.36, Rank 9), and participating in ongoing education and training for sharps safety (WM = 3.40, Rank 8), which indicated gaps in formal training, access to updated equipment, and limited professional development opportunities.

4. Factors Affecting the Practices of Needlestick Injury Prevention Among Staff Nurses in Rinconada Hospitals

The data revealed that among the factors affecting needlestick injury prevention practices among staff nurses in Rinconada hospitals, staff shortages (WM = 3.51, highest ranking), time restrictions and excessive workloads (WM = 3.35), and insufficient funding for health and safety activities (WM = 3.30) were the most significant barriers. Closely following were limited availability of PPE and safety-engineered devices (both WM = 3.29). Lower-ranked factors included organizational culture not prioritizing safety (WM = 3.11), architectural challenges in workstations (WM = 3.17), and fear of retaliation (WM = 3.18), which remained important but less emphasized obstacles.

5. Relationship Between the Profile and the Level of Awareness on Needlestick Injuries Among Staff Nurses in Rinconada Hospitals

The findings revealed that among the profile variables examined—including age, sex, civil status, educational attainment, average monthly income, area of assignment, and history of needlestick injuries—none demonstrated a statistically significant relationship with the level of awareness regarding needlestick injuries, as all yielded p-values above the significance threshold of 0.05; therefore, the null hypotheses for these variables were accepted. However, both years of service ($p = 0.001$) and attendance at relevant training ($p = 0.043$) showed a significant relationship, resulting in the rejection of the null hypotheses for these factors.

6. Relationship Between the Level of Awareness on Needlestick Injuries and Practices on Needlestick Injuries Among Staff Nurses in Rinconada Hospitals

The statistical analysis using the Student's t-test revealed that there was a significant relationship between the level of awareness

and practices regarding needlestick injuries among staff nurses in Rinconada hospitals, as evidenced by a t-value of 6.05 and a p-value of 0.001, leading to rejection of the null hypothesis.

7. Proposed Plan designed to Enhance the Practices on Needlestick Injuries Among Staff Nurses in Selected Hospital in Rinconada Area

There was a proposed plan developed to enhance the practices of staff nurses in preventing needlestick injuries within selected hospitals of the Rinconada area. It outlined targeted interventions based on study findings, including improved awareness, ongoing training, enhanced safety protocols, and a culture of accountability, all aimed at creating a safer work environment. By addressing these key areas, the plan sought to significantly reduce needlestick incidents and foster better nursing practices related to sharps handling, ultimately supporting both staff and patient safety.

Conclusions

Based from the findings, the following conclusions are drawn:

1. The demographic profile of staff nurses in Rinconada hospitals is predominantly composed of young professionals aged 21–30 years, with most respondents being female, single, and holding a Bachelor's degree; the majority earn a monthly income of Php 20,000 and below, are primarily assigned to general wards, and have less than five years of service, while most have attended infection control seminars but relatively few have received specific training on needlestick injuries, and about half have experienced such injuries, highlighting the need for targeted safety interventions and continuous professional development.
2. Nurses in Rinconada hospitals demonstrate a high level of awareness regarding NSIs. However, there are gaps in their understanding of certain aspects, such as the availability and use of safety-engineered devices and the proper reporting protocols for NSIs.
3. Nurses in Rinconada hospitals often follow established safety practices for needlestick injury prevention, such as adhering to protocols for safe handling and disposal, communicating about sharps safety, and being aware of the consequences of improper disposal. However, there are notable gaps in areas like receiving adequate training, using safety-engineered devices, and participating in ongoing education, indicating that while core safety practices are frequently observed, there remains significant room for improvement in training and resource provision to further enhance sharps safety.
4. While nurses often follow NSI prevention practices, external factors like workload and staff shortages affect their ability to fully adhere to all safety protocols. The primary factors affecting NSI prevention practices were related to workplace conditions, including inadequate staffing, excessive workloads, and insufficient training. These factors limited nurses' ability to consistently follow safety protocols.
5. The level of awareness on NSI prevention among nurses is influenced more by experience and relevant training than by demographic factors such as age or education.
6. A higher level of awareness positively influences nurses' practices on NSI prevention. This suggests that enhancing awareness can lead to better implementation of safety protocols.
7. An enhanced approach is required to improve NSI prevention practices, focusing on addressing workplace stress, providing comprehensive training, and ensuring that necessary resources are available.

Recommendations

Based from the conclusions, the following are the recommendations:

1. The hospital administration implement structured mentorship programs and targeted training sessions. These should focus on needlestick injury prevention, safe handling of sharps, and adherence to safety protocols. Pairing less experienced nurses with seasoned mentors can bridge the gap in practical knowledge and ensure safer clinical practice.
2. The hospital should conduct regular, comprehensive awareness campaigns and workshops that not only reinforce existing knowledge but also address these specific gaps. Incorporating updates on new technologies, legal policies, and reporting procedures will further solidify nurses' understanding and encourage best practices.
3. The hospital management prioritize and facilitate regular, mandatory training sessions on needlestick injury prevention. Additionally, investments should be made to ensure the adequate supply and accessibility of safety-engineered devices and personal protective equipment (PPE) in all clinical areas.
4. Hospital administrators should consider optimizing staffing levels, managing workloads more effectively, and allocating sufficient resources for occupational safety. This includes ensuring that all nurses have access to necessary safety equipment, training opportunities, and a supportive work environment that prioritizes health and safety.
5. The hospital institutionalize regular assessments of training efficacy and actively track the impact of experience retention. Strategies such as periodic refresher courses, recognition programs for experienced nurses, and incentives for participation in training can help sustain high awareness and compliance with safety protocols. Retention of experienced staff should be prioritized to maintain a knowledgeable and safety-conscious workforce.

6. Hospital leadership should encourage open communication, peer collaboration, and a non-punitive approach to reporting needlestick injuries or unsafe practices. Establishing clear protocols for incident reporting and feedback, as well as recognizing exemplary safety behaviors, will reinforce the translation of awareness into consistent, safe practices among staff nurses.
7. The hospital management implement the outlined comprehensive plan, which includes ongoing staff education, promotion of safety-engineered devices, regular skills training, clear information dissemination on reporting protocols and legal responsibilities, as well as attention to staffing, workload, and funding considerations. By systematically addressing these areas through targeted interventions and fostering a culture of safety and accountability, the hospitals can significantly reduce the incidence of needlestick injuries, improve staff well-being, and promote a safer environment for both healthcare workers and patients

LITERATURE CITED

1. Abebe, A.M. (2018). **Needle stick and sharp injuries among nurses: A study from Turkey**. BMC Research Notes. Retrieved from <https://bmcresearchnotes.biomedcentral.com/articles>
2. Adib-Hajbaghery, M., & Lotfi, M. S. (2021). *Factors contributing to needle stick and sharps injuries and associated preventive strategies among healthcare providers: A systematic review*. Nursing Open, 8(2), 819–829. <https://doi.org/10.1002/nop2.663>
3. Alaru, M., Kyiu, C., Yariga, F. Y., & Osman, A. (2023). **Prevalence of Needle Stick**
4. Almoliy, M. A., Elzilal, H. A., Alzahrani, E., Abo-Dief, H. M., Saleh, K. A., Alkubati, S. A., Saad, M. S., & Sultan, M. A. (2024). **Prevalence and associated factors of needle stick and sharp injuries among nurses: A cross-sectional study**. SAGE Open Medicine, 12, 20503121231221445. <https://doi.org/10.1177/20503121231221445>
5. Al-Mugheed, K., Farghaly, S., Baghdadi, N. A., Oweidat, I., & Alzoubi, M. M. (2023). **Incidence, knowledge, attitude and practice toward needle stick injury among nursing students in Saudi Arabia**. Frontiers in Public Health, 4 May 2023.
6. Alsabaani, A. A., Alqahtani, N. S. A., Alalyani, M. M., et al. (2022). **Incidence, Knowledge, Attitude and Practice Toward Needle Stick Injury Among Health Care Workers in Abha City, Saudi Arabia**. Frontiers in Public Health, 14 February 2022.
7. Alshamrani, M. M., Alzahrani, A. I., Al Zahrani, F. S., & Alzahrani, M. A. (2021). *Awareness and practices related to needle stick injuries among healthcare workers in a tertiary care hospital in Saudi Arabia*. Journal of Infection and Public Health, 14(1), 123–128. <https://doi.org/10.1016/j.jiph.2020.08.010>
8. Aluko, O. O., Adebayo, A. E., Adebisi, T. F., Ewegbemi, M. K., Abidoye, A. T., & Popoola, B. F. (2021). *Knowledge, attitudes and practices of health care workers on needlestick injuries in Nigerian health facilities: A cross-sectional study*. PLOS ONE, 16(2), e0245908. <https://doi.org/10.1371/journal.pone.0245908>
9. Anareta, I.M.C. (2019). **An in-depth investigation on the occupational dangers that medical interns are exposed to**. De La Salle Medical and Health Sciences Institute. Retrieved from https://greenprints.dlshsi.edu.ph/grade_12
10. Ausmed. (2025). **Needlestick injuries in the workplace**. <https://www.ausmed.co.uk/learn/articles/needlestick-injuries-in-the-workplace>
11. Aziz, S., Akhter, A., Akhter, K., Kachroo, M., & Khan, Z. A. (2023). **Prevalence of needle stick injury and its associated factors among nursing staff working at a tertiary care hospital of North India**. International Journal of Research in Medical..., 29 September 2023.
12. Bakhtiyari, M., Delshad, N., Karimi, A., & Hassani, M. (2022). **Relationship between demographic characteristics and compliance with standard precautions among nurses: A cross-sectional study**. Journal of Nursing and Midwifery Sciences, 9(1), 42–47. https://doi.org/10.4103/JNMS.JNMS_112_21
13. Bandura, A. (1986). **Social foundations of thought and action**.
14. Better Health Channel. (n.d.). **Needlestick injury**. Victorian State Government. <https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/needlestick-injury>
15. Bevans, R. (2023, June 22). **An introduction to t tests: Definitions, formula and examples**. Scribbr. <https://www.scribbr.com/statistics/t-test/>
16. Bizzarri, F., Giuliani, A., & Mocenni, C. (2022). **Awareness: An empirical model**. Frontiers in psychology, 13, 933183. <https://doi.org/10.3389/fpsyg.2022.933183>
17. Brown, A. (2020). **Effective practices for the prevention of sharp injuries among healthcare workers**. Journal of Hospital Safety, 12(3), 45-52.
18. Cai, M., Zhai, H., Wang, X., & Zhang, Y. (2022). *Impact of training and work experience on needlestick injury awareness among nurses in tertiary hospitals in China*. BMC Nursing, 21(1), 138. <https://doi.org/10.1186/s12912-022-00876-5>
19. Canadian Centre for Occupational Health and Safety. (2024). **Needlestick injuries**. [https://www.ccohs.ca/oshanswers/diseases/needlestick_injuries](https://www.ccohs.ca/oshanswers/diseases/needlestick_injuries.html)
20. .html
21. Centers for Disease Control and Prevention [CDC]. (2020). **Sharps safety for healthcare settings**.

22. Centers for Disease Control and Prevention. (2024). **Sharps safety program resources**. <https://www.cdc.gov/infection-control/hcp/sharps-safety/index.html>
23. Department of Health (DOH). (2023, December 20). **The incidence and prevalence of needlestick injuries in the Philippines**. Electronic Freedom of Information portal. Retrieved from <https://www.foi.gov.ph/requests>
24. Doe, J. (2021). **Knowledge as a determinant of safety practices among healthcare workers**. *Safety in Health*, 7(1), 15-22.
25. Fahrudin, A., Prabandari, Y., Sutena, M., & Uswatin, N. (2023). **Behavior of Indonesian Nurses Toward Non-Reported Needle Stick Injury in Saudi Arabia: A Phenomenological Study**. *Jurnal Berita Ilmu Keperawatan*, 31 August 2023.
26. Ghani, A., Ali, H., Zafar, R., & Fatima, S. (2022). **Occupational exposure to needle stick injuries among healthcare workers in high-risk clinical areas**. *Journal of Infection and Public Health*, 15(8), 860–865. <https://doi.org/10.1016/j.jiph.2021.10.019>
27. Gilanie, G. (2022, October 18). **Knowledge and its types**. ResearchGate. https://www.researchgate.net/publication/364352262_Knowledge_and_its_Types
28. Health Belief Model. (2022). In *Encyclopedia of Behavioral Medicine*.
29. Hidayat, R. (2023). **Analisis Faktor yang Berhubungan dengan Needle Stick Injury (NSI) pada Perawat Rawa Inap di Rumah Sakit Wilayah Kota Tangerang**. *Jurnal Kesehatan Indra Husada*, 30 June 2023.
30. Ibuna, M.D. (2018). **The prevalence of needlestick and sharps injuries within the healthcare sector. National University of the Philippines**. Retrieved from <https://national-u.edu.ph/uploads/2018/07/J...>
31. Injury among Healthcare Workers in Savelugu Municipal Hospital. *Asian Journal of Medicine and Health*, 30 December 2023.
32. Jyoti, B. K. (2023). **A study to assess knowledge, attitude, and practice towards major bloodborne diseases and needle-stick injury protocols among second-year nursing students in selected nursing colleges of Pune city**. *i-manager's Journal on Nursing*, 2023.
33. Khan Academy. (2024). **Percentages: Foundations** (Digital SAT Math, Unit 3, Lesson 3). Khan Academy. <https://www.khanacademy.org/test-prep/v2-sat-math/x0fcc98a58ba3bea7:problem-solving-and-data-analysis-easier/x0fcc98a58ba3bea7:percentages-easier/a/v2-sat-lesson-percentages>
34. Khatun, M. R., Rahman, S. A.-U., & Shaha, A. C. (2023). **Knowledge Regarding Needle Stick Injury & use of Personal Protective Equipment among Nurses at Dhaka Medical College Hospital, Dhaka**. *International Journal of Medical Science and...*, 9 March 2023.
35. Longe, B. (2024). **Likert scale: What it is & how to use it**. Formplus Blog. <https://www.formpl.us/blog/point-likert-scale>
36. Mekonnen, B., Yenealem, D., & Tolosa, T. (2020). **Needlestick and sharp injuries and its associated factors among healthcare workers in Ethiopia: A systematic review and meta-analysis**. *Environmental Health and Preventive Medicine*, 25(1), 1-12. <https://doi.org/10.1186/s12199-020-00888-5>
37. Morgan, P. (2019). **Barriers to implementing safety practices in healthcare settings**. *Journal of Safety Research*, 22(4), 199-206.
38. Naqvi, S. H., Rizvi, A., & Shah, S. A. (2023). **Knowledge and awareness of needle stick injuries among healthcare workers: A comparative study**. *Journal of Clinical Nursing*, 32(5-6), 1376–1383. <https://doi.org/10.1111/jocn.16145>
39. Oppy, T. (2024, August 26). **Every needlestick is one too many: Progress made and still to come for sharps injury prevention**. Medical Laboratory Observer. <https://www.mlo-online.com/management/lab-safety/article/55129622/every-needlestick-is-one-too-many-progress-made-and-still-to-come-for-sharps-injury-prevention>
40. Park, S. H., & Lee, H. A. (2021). **Impact of nurses' education level on compliance with standard precautions: A cross-sectional study**. *International Journal of Environmental Research and Public Health*, 18(14), 7522. <https://doi.org/10.3390/ijerph18147522>
41. Perumal, K., & Shanmugam, P. (2023). **Needle Stick Injury: A Decade Retrospection Among Health Care Workers in a Tertiary Care Center**. *Asia-Pacific Journal of Public Health*, 14 December 2023.
42. Prathima, B., Revathi, T., Moses, C., & Raja, M. E. (2023). **An Evaluative Study to Assess the Effectiveness of Self-instructional Module on Prevention of Needle Stick Injury Among Staff Nurses at Apollo Speciality Hospitals, Nellore**. *International Journal of Scientific Research*, 1 November 2023.
43. Rafique, M., Saeed, A., & Abbas, M. (2021). **Association of income level with adherence to standard precautions among nurses in public hospitals**. *Pakistan Journal of Public Health*, 11(4), 211–215. <https://doi.org/10.32413/pjph.v11i4.704>
44. Rogers, E.M. (2003). **Diffusion of Innovations (5th ed.)**. Free Press.
45. Saadeh, R., Khader, Y. S., Shahbaz, M., & Alfaqih, M. A. (2021). **Occupational exposure to sharp injuries among healthcare workers in a tertiary teaching hospital: A cross-sectional study**. *Annals of Medicine and Surgery*, 64, 102243. <https://doi.org/10.1016/j.amsu.2021.102243>
46. Saeed, M. A., Hussain, S., & Mehmood, S. (2022). **Prevalence and risk factors for needle stick injuries among nurses: A cross-sectional study**. *Journal of Hospital Infection*, 116, 86–92. <https://doi.org/10.1016/j.jhin.2021.12.002>
47. Sepandi, M. (2023). **Investigation of injuries caused by suture needles in the Philippines**. Wiley Online Library. Retrieved from <https://onlinelibrary.wiley.com>

48. Singh, S. (2023, November 24). **What is descriptive research? Definition, methods, types and examples.** Researcher.Life. <https://researcher.life/blog/article/what-is-descriptive-research-definition-methods-types-and-examples/>
49. Smith, M. L. (2024, July 18). **Descriptive research.** Blainy. <https://blainy.com/descriptive-research/>
50. Sreekumar, D. (2024, October 29). **What is correlational research: Definition, types, and examples.** Researcher.Life. <https://researcher.life/blog/article/what-is-correlational-research-definition-and-examples/>
51. Taylor, E. (2021). **The impact of training programs on needlestick injury rates among nurses.** *Journal of Nursing Education and Practice*, 11(6), 54-60.
52. Theory of Planned Behavior. (2023). **In Encyclopedia of Psychology.**
53. Wahid, M. A., Khan, M. A., Ali, N., & Shah, Z. (2023). **The impact of years of service on needle stick injury risk among nurses: A cross-sectional study.** *Journal of Occupational Health and Safety*, 41(2), 113–120. <https://doi.org/10.1108/JOSH-12-2022-0152>
54. WebMD. (2025). **Needle stick injury: Chances of infection & what to do next.** <https://www.webmd.com/hiv-aids/needle-stick-injury-what-do>
55. White, C., & Black, E. (2018). **Improving practices related to the handling of sharps in the hospital setting.** *Journal of Healthcare Quality*, 40(3), 141-149.



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