Logical Creations Education Research Institute
MADER E MILAT INTERNATIONAL JOURNAL OF NURSING AND ALLIED SCIENCES
E-ISSN: 2960-2181
Web: www.minasij.com | **Email:** editor@minasij.com
Volume-02 | Issue-03 | September-2024

Prevalence, Attitude and Risk Factors Regarding Needle Stick Injuries among Nursing Students

Muhammad Huzaifa[1], Afsha Bibi[2], Najeeb Ullah[3], Naseem Bibi[4], Asad Khan[5]
[1]RN at Shaukat Khanum Memorial Cancer Hospital & Research Center Peshawar-Pakistan.
[2]Principal at Dilshad College of Nursing Swat-Pakistan.
[3]RN at Luqman International Hospital, Pakistan.
[4]Lecturer Nursing at National College of Nursing Peshawar-Pakistan.
[5]Lecturer Nursing at Nightingale Institute of Nursing & Health Sciences Swat-Pakistan.
iamozepa@gmail.com

DOI: 10.5281/zenodo.14029055

ABSTRACT

Needle stick injuries are the most common occupational threat to healthcare professionals. Nursing students are the most vulnerable population for needle stick injuries among nurses and other healthcare workers. This study aims to find out the prevalence, attitude, and Risk Factors of NSI among nursing students as well as to identify the risk factors related to NSI. A cross-sectional survey approach is used in this study while data was collected via convenient sampling from 105 Generic BSN students who perform their clinical duties. The data reveals that hurrying (55.38%) and inattention (23.07%) are the most common worker-related causes of unsafe healthcare practices, with work-related factors like overcrowding (40%) and insufficient protective measures (26.15%) also contributing. Glove use compliance is higher in risky patient care (47%) but drops to 24% in resuscitation. Needle handling shows 54% recap needles and 41% dispose of them properly. Additionally, 61.9% of nursing students experienced needle or sharp injuries, but only 27.69% reported the incidents, and 56.19% had received protective training. In conclusion, unsafe healthcare practices are influenced by both worker-related and environmental factors, with hurrying and inattention being the most common causes. Compliance with safety measures, such as glove use and needle disposal, is inconsistent, and a significant number of nursing students experience injuries but fail to report them. Training on protective measures is essential to improve safety and reporting practices.

Keywords: Student Nurses, Needle stick injuries, Risk factor, Prevalence

Cite as: Muhammad Huzaifa, Afsha Bibi, Najeeb Ullah, Naseem Bibi, & Asad Khan. (2024). Prevalence, Attitude and Risk Factors Regarding Needle Stick Injuries among Nursing Students. *Mader E Milat International Journal of Nursing and Allied Sciences (MINAS), 2*(3), 33–43. **https://doi.org/10.5281/zenodo.14029055**

INTRODUCTION

Needle Stick Injury (NSI) is the term for an unintentional wound or injury caused by needles used in intravenous (IV) and blood transfusion settings. The danger of contracting diseases including Hepatitis B (HBV), Hepatitis C (HCV), and HIV—which have post-exposure transmission rates of 30%, 5–10, and 0.4%, respectively—may exist for individuals who are harmed by infected needles (Al-Mugheed et al., 2023).

Logical Creations Education Research Institute
MADER E MILAT INTERNATIONAL JOURNAL OF NURSING AND ALLIED SCIENCES
E-ISSN: 2960-2181
Web: www.minasij.com | Email: editor@minasij.com
Volume-02 | Issue-03 | September-2024

The risk of NSIs is a significant concern for healthcare workers, particularly nurses, who are frequently exposed to needles during routine procedures. According to the World Health Organization (WHO), approximately 3 million healthcare workers worldwide experience NSIs annually, resulting in potential transmission of blood-borne pathogens. Effective prevention strategies and safety protocols are crucial to minimizing this risk. NSIs can have severe consequences, including emotional distress, physical harm, and financial burdens. In addition to the risk of contracting infectious diseases, NSIs may lead to long-term psychological effects, such as anxiety and post-traumatic stress disorder (PTSD). Healthcare organizations must prioritize NSI prevention, providing adequate training, safety equipment, and support for affected workers.

Several factors contribute to the risk of NSIs, including inadequate training, insufficient safety measures, and high workload. Healthcare settings with limited resources, outdated equipment, and poor infection control practices are particularly vulnerable. Implementing evidence-based guidelines, such as those developed by the Centers for Disease Control and Prevention (CDC), can significantly reduce NSI incidence. To mitigate NSI risks, healthcare organizations should adopt safety-engineered devices, such as self-sheathing needles and needle-free IV systems. Additionally, regular training programs, emphasizing safe handling practices and proper use of personal protective equipment, are essential. Encouraging a culture of safety and reporting NSIs can help identify areas for improvement and prevent future incidents.

Preventing NSIs requires a multifaceted approach, involving policymakers, healthcare administrators, and frontline workers. By prioritizing safety, investing in effective prevention strategies, and promoting a culture of safety, healthcare organizations can minimize the risk of NSIs and protect the well-being of healthcare workers.

Needle stick injuries are the most common type of occupational threat to healthcare professionals. Nurses are more prone to needle stick injuries because they are closely involved in caring for patients with different kinds of contagious diseases and therefore put them at high risk of contracting infectious diseases like hepatitis B and C and in some cases HIV but not limited to it (Bouya et al., 2020). Nursing students are the most vulnerable populations for injuries specifically needle stick injuries among nurses and other healthcare workers (Bagnasco et al., 2020). According to a study conducted, In the sample, 14.1% of needle stick injuries were reported overall (Al-Mugheed et al., 2023). A similar study shows 24% (Hasak et al., 2018). A study from Pakistan also estimated the incidence of NSI (53.7%) among nurses (Ali et al., 2023). Additionally, the likelihood of NSSIs was higher for nurses (67.9%) (Sabaa et al., 2022). The majority of NSI events happened during administering drugs, preparing drugs, recapping, transporting syringes without the appropriate container, disposing of needles incorrectly, opening needle caps, moving the patient suddenly while receiving an injection, drawing blood, and suturing (Al Qadire et al., 2021a). Needlestick injuries (NSIs) are not only a physical hazard but also a significant source of infection for healthcare workers, particularly nursing students. When a needle or sharp instrument punctures the skin, it creates a direct pathway for bloodborne pathogens to enter the body. NSIs can expose healthcare workers to infectious diseases such as HIV, hepatitis B (HBV), and hepatitis C (HCV), all of which can have serious, long-term health consequences (Altaf et al., 2022).

Most nursing students receive their training in clinical settings, where they are supervised by professors and acquire a variety of nursing skills, such as administering injections, drawing blood, and using glucometers to monitor blood sugar levels. However, because they lack the necessary training and expertise to handle needles and sharp items in a clinical setting, these nurses are more susceptible to NSI than more seasoned nurses (Schmid et al., 2007). Moreover, nurses who lack the necessary training

Logical Creations Education Research Institute
MADER E MILAT INTERNATIONAL JOURNAL OF NURSING AND ALLIED SCIENCES
E-ISSN: 2960-2181
Web: www.minasij.com | Email: editor@minasij.com
Volume-02 | Issue-03 | September-2024

throughout their undergraduate studies and have a limited understanding of preventing needle stick accidents are more likely to experience needle stick injuries (Al Qadire et al., 2021a).

Due to the immense importance for nurses and students, the present study is going to be conducted to find out the prevalence, and risk factors associated with NSIs, and may yield a sound background for policymakers in the said hospital to take preventive measures to reduce the risk of getting fatal infections among student nurses.

The study's objectives include determining the incidence rate of NSIs among student nurses, identifying factors contributing to NSIs, and exploring existing safety protocols in the hospital. A cross-sectional survey design will be employed, targeting student nurses who have completed at least one clinical rotation. Data will be collected using a standardized questionnaire, incorporating elements from established NSI reporting tools.

The findings of this study will contribute to the development of evidence-based guidelines for NSI prevention, targeting high-risk areas and practices. Policymakers can utilize these insights to enhance hospital policies, improve needle safety, and promote a culture of safety among nursing staff. Moreover, this research will inform educational programs aimed at student nurses, emphasizing safe handling practices and proper use of personal protective equipment.

By addressing NSI risk factors and prevention strategies, this study will provide valuable recommendations for healthcare educators, administrators, and policymakers. The research outcomes will be disseminated through peer-reviewed publications, conference presentations, and stakeholder workshops, ensuring broad dissemination and potential for meaningful impact. Ultimately, this study aims to reduce the risk of NSIs and promote a safer working environment for student nurses, safeguarding their health and well-being.

Needlestick injuries pose significant occupational health risks to student nurses, potentially exposing them to blood-borne pathogens like HIV, hepatitis B, and hepatitis C. Understanding the prevalence and risk factors associated with NSIs is crucial for developing effective prevention strategies. This study will employ a cross-sectional design, surveying student nurses at the hospital to gather data on NSI experiences, risk factors, and existing safety protocols.

The findings of this study will contribute to the development of evidence-based guidelines for NSI prevention, targeting high-risk areas and practices. Policymakers can utilize these insights to enhance hospital policies, improve needle safety, and promote a culture of safety among nursing staff. Moreover, this research will inform educational programs aimed at student nurses, emphasizing safe handling practices and proper use of personal protective equipment.

To achieve these objectives, the study will investigate several key factors, including the frequency and circumstances of NSIs, knowledge and attitudes toward needle safety, and adherence to existing protocols. Additional factors, such as work environment, staffing levels, and availability of safety equipment, will also be examined. By identifying modifiable risk factors, healthcare administrators can implement targeted interventions to reduce NSI incidence.

This research will provide valuable insights for healthcare policymakers, nursing educators, and student nurses, ultimately contributing to a safer working environment and reduced risk of occupational injuries. The study's recommendations will be disseminated through peer-reviewed publications,

Logical Creations Education Research Institute
MADER E MILAT INTERNATIONAL JOURNAL OF NURSING AND ALLIED SCIENCES
E-ISSN: 2960-2181
Web: www.minasij.com | Email: editor@minasij.com
Volume-02 | Issue-03 | September-2024

conference presentations, and stakeholder workshops, ensuring broad dissemination and potential for meaningful impact.

LITERATURE REVIEW

In 2022, a systematic review was conducted with study objectives. To ascertain the risk variables, epidemiological profile, and pooled prevalence of NSI among dentistry students. Among dentistry students, the estimated pooled prevalence of NSI was 44% (95% confidence interval: 38–51%) (Huang et al., 2022).

Students studying dentistry and nursing participated in a cross-sectional study. A questionnaire was used to gather and analyze the data. A total of 410 students—160 studying dentistry and 250 studying nursing—participated in the survey. The purpose of this study was to evaluate the prevalence, awareness, and understanding of dental and nursing students. Compared to dental students, nursing students experienced NSI more frequently. Just 22.23% of dental students and 82.76% of nursing students reported the incidence of NSI to the on-campus healthcare department (Zagade et al., 2020).

The study's findings highlight significant disparities in NSI reporting practices between dental and nursing students. The low reporting rate among dental students (22.23%) raises concerns about underreporting and potential lack of awareness regarding NSI protocols. In contrast, nursing students demonstrated a higher reporting rate (82.76%), suggesting better awareness and adherence to safety guidelines.

The higher frequency of NSIs among nursing students may be attributed to their increased exposure to needles during clinical rotations and patient care activities. This underscores the need for targeted interventions, such as enhanced safety training and improved access to safety-engineered devices, to mitigate NSI risks in nursing education. Furthermore, the study's results emphasize the importance of interdisciplinary collaboration between dental and nursing educators to develop standardized NSI prevention protocols.

The implications of this study extend beyond the academic environment, highlighting the need for healthcare institutions to prioritize NSI prevention and reporting. By addressing the knowledge gaps and reporting practices identified in this study, healthcare educators and administrators can develop effective strategies to reduce NSI incidence and promote a culture of safety among healthcare professionals. Future research should investigate the effectiveness of NSI prevention programs and explore innovative solutions to minimize NSI risks in healthcare settings.

A descriptive cross-sectional study was conducted at the University of Lahore's Lahore School of Nursing in Pakistan. Data was collected using a self-administered questionnaire, and convenient sampling was employed. The gathered data was analyzed using SPSS software, incorporating both inferential and descriptive statistics (22). Frequencies and percentages were utilized for descriptive analysis. The study's findings revealed that:

- 37 (35.5%) participants responded "no" and 49 (64.5%) responded "yes" to experiencing a needle stick injury (NSI).
- 52 (68.4%) participants reported not reporting the NSI incident, while 24 (31.6%) reported yes.
- 43 (56.6%) participants disagreed that NSI may cause severe anxiety, whereas 33 (43.4%) agreed.
- 61 (80.3%) participants were aware of safety devices for needles, whereas 15 (19.7%) were not.

Logical Creations Education Research Institute
MADER E MILAT INTERNATIONAL JOURNAL OF NURSING AND ALLIED SCIENCES
E-ISSN: 2960-2181
Web: www.minasij.com | Email: editor@minasij.com
Volume-02 | Issue-03 | September-2024

The study's findings underscore the prevalence of NSIs among nursing students, with 64.5% experiencing at least one NSI. The low reporting rate (31.6%) raises concerns about underreporting and potential lack of awareness regarding NSI protocols. This highlights the need for targeted interventions, such as enhanced safety training and improved access to safety-engineered devices.

The study's results also indicate a significant knowledge gap regarding NSI-related anxiety. While 43.4% of participants acknowledged the potential for severe anxiety, 56.6% disagreed. This disparity emphasizes the importance of addressing psychological impacts of NSIs in nursing education. Furthermore, the high awareness rate regarding safety devices (80.3%) suggests potential for improved prevention strategies.

The implications of this study extend beyond the academic environment, emphasizing the need for healthcare institutions to prioritize NSI prevention, reporting, and psychological support. By addressing the knowledge gaps and reporting practices identified in this study, healthcare educators and administrators can develop effective strategies to reduce NSI incidence and promote a culture of safety among healthcare professionals. Future research should investigate the effectiveness of NSI prevention programs and explore innovative solutions to minimize NSI risks in healthcare settings.

METHODOLOGY

A cross-sectional survey approach is used for our study. The study settings were the Royal College of Nursing and Swat, Pakistan. The Duration of the study was three months (June to August). The sample size for this study is calculated using Raosoft Calculator. With a 95% confidence level and 8% margin of error, the sample size was 105 responses for this study. Moreover, a convenient sampling technique is used in this study. The Sample selection was all Generic BSN students at the Royal College of Nursing Swat, who have spent at least 3 months in practice. The Exclusion criteria were Registered Nurses, Nursing interns, other healthcare care professionals, and nursing students who have spent less than three months at the hospital side.

The inclusion criteria ensured that participants had sufficient clinical experience to provide valuable insights into needle stick injuries (NSIs) and related safety practices. Exclusion criteria consisted of Registered Nurses, nursing interns, other healthcare professionals, and nursing students with less than three months of hospital experience. This allowed the study to focus on undergraduate nursing students' perceptions and experiences.

Data collection entailed a self-administered questionnaire, distributed among the selected participants. The questionnaire's validity and reliability were ensured through rigorous testing and pilot studies. Descriptive statistics and inferential statistics were applied using SPSS software to analyze the data. Frequencies, percentages, and mean scores facilitated the identification of trends and patterns in participants' responses.

The study's findings will contribute to the development of targeted interventions aimed at reducing NSI incidence among nursing students. By exploring knowledge gaps, attitudes, and practices related to NSI prevention, this research will inform evidence-based educational programs and policy initiatives. Ultimately, this study seeks to promote a culture of safety and enhance the well-being of nursing students and healthcare professionals.

Logical Creations Education Research Institute
MADER E MILAT INTERNATIONAL JOURNAL OF NURSING AND ALLIED SCIENCES
E-ISSN: 2960-2181
Web: www.minasij.com | Email: editor@minasij.com
Volume-02 | Issue-03 | September-2024

Data was collected from Generic BSN students at Royal College of Nursing Swat, after approval from the institute. Informed verbal and written consent were taken from the study participants to safeguard their rights and dignity. The adopted data collection tool was used in this study with few modifications to make it suitable for data collection from students. The questionnaire has three sections: 1. Incidence of NSI or Sharp injuries, 2. Attitudes regarding sharp safety, 3. Causes of injury. The questionnaire is based on a Likert scale and multiple-answer questions that allow the participants to select answers for each question.

The questionnaire's Likert scale enabled participants to express their attitudes and perceptions regarding sharp safety, ranging from strongly agree to strongly disagree. Multiple-answer questions allowed respondents to identify multiple causes of injury, providing a comprehensive understanding of the factors contributing to NSIs. The adapted tool demonstrated strong reliability and validity, ensuring accurate and consistent measurements.

The data collection process ensured participant anonymity and confidentiality, promoting honest responses. Participants completed the questionnaire voluntarily, and their involvement was entirely optional. The researcher provided clear instructions and clarification on any queries, ensuring participants understood the questionnaire's content. The data collection process adhered to ethical standards, respecting participants' autonomy and dignity.

The findings of this study will provide valuable insights into Generic BSN students' experiences with NSIs, attitudes toward sharp safety, and perceived causes of injury. By identifying knowledge gaps and areas for improvement, this research will inform evidence-based educational programs and policy initiatives. Ultimately, this study aims to enhance sharp safety practices, reduce NSI incidence, and promote a culture of safety among nursing students and healthcare professionals.

The data collection procedure was approved by the Royal College of Nursing Swat. Written consents were taken before the involvement of every participant to make sure that all the information should remain confidential. The rights and dignity of all individuals were our prior consideration.

The research process will not cause any harm to the subjects. The subject’s details and data confidentiality were maintained.

DATA ANALYSIS AND RESULTS

Table 1 shows the gender distribution of 105 nursing students shows that 80.95% (85) are male, while 19.05% (20) are female. This indicates a significantly higher proportion of male students compared to female students in the group.

Table 1 Demographic data

Gender	Frequency (n)	Percentage (%)
Male	85	80.95%
Female	20	19.05%
Total	**105**	**100%**

The data in Table 2 shows that 61.9% (65) of nursing students experienced needle sticks or sharp injuries while working, while 38.09% (40) did not. Among those injured, only 27.69% (18) reported

Logical Creations Education Research Institute
MADER E MILAT INTERNATIONAL JOURNAL OF NURSING AND ALLIED SCIENCES
E-ISSN: 2960-2181
Web: www.minasij.com | Email: editor@minasij.com
Volume-02 | Issue-03 | September-2024

the incident, whereas the majority, 72.30% (47), did not report their injuries. Additionally, 56.19% (59) of the participants received training on protective measures, but 43.80% (46) had not been trained.

Table 2 Prevalence of needle stick injuries

NSI or sharp injuries while working?	YES	65
	Percent	61.90
	NO	40
	Percent	38.09
Injuries reported	YES	18
	Percent	27.69
	NO	47
	Percent	72.30
Trained on protective measures?	YES	59
	Percent	56.19
	NO	46
	Percent	43.80

Table 3 highlights healthcare workers' adherence to safety practices related to glove use, needle handling, and sharp object disposal. A majority (47%) consistently wear gloves during risky patient care, though this drops to 24% during resuscitative procedures. Needle handling practices show varied compliance, with 54% recapping needles after use and 39% detaching them. When it comes to sharp disposal, 41% consistently dispose of contaminated needles in special containers, and 49% intervene if they encounter a sharp object in an improper place.

Table 3 Attitudes regarding sharp safety

Questions	**Always**	**Mostly**	**Sometimes**	**Rarely**	**Never**
I put on gloves in risky procedures in patient care.	47	28	23	06	01

Logical Creations Education Research Institute
MADER E MILAT INTERNATIONAL JOURNAL OF NURSING AND ALLIED SCIENCES
E-ISSN: 2960-2181
Web: www.minasij.com | Email: editor@minasij.com
Volume-02 | Issue-03 | September-2024

I put on gloves in resuscitative procedures.	24	28	25	14	14
I recap the needle of syringes after use.	54	19	18	06	08
I detach the needle from the syringes after use.	39	20	16	20	10
I throw contaminated sharp needles into the special container.	41	27	27	10	00
I intervene to dispose of a sharp object properly if I run into a sharp in the wrong place.	49	14	22	13	07

Table 4 outlines various causes of unsafe practices in healthcare settings, categorized into worker, work-related, and other causes. Among worker-related factors, hurrying (55.38%) and inattention (23.07%) are the most frequent causes, with smaller percentages attributing issues to failure to use PPE (9.23%), sleepiness (3.07%), and lack of training (9.23%). Work-related causes include unfavorable physical conditions, such as overcrowding and noise (40%), and insufficient protective measures (26.15%). Additionally, patient-related factors, like unexpected movements (43.93%), and poorly designed sharp collectors (55.38%) contribute significantly to safety issues.

Table 4 Causes of Injuries

Question	Options	Response	Percent
	Hurrying	36	55.38
	Inattention	15	23.07
Worker-related causes	Failure to use PPE	06	9.23
	Sleepiness	02	3.07
	Lack of training	06	9.23
	Inappropriate disposition of Contaminated needles and sharps.	22	33.84
Work-related causes	Unfavorable physical conditions, (over crowdedness, noise, workload)	26	40
	Lack of protective measures, (eg, gloves, goggles, sharps collectors)	17	26.15

Logical Creations Education Research Institute
MADER E MILAT INTERNATIONAL JOURNAL OF NURSING AND ALLIED SCIENCES
E-ISSN: 2960-2181
Web: www.minasij.com | Email: editor@minasij.com
Volume-02 | Issue-03 | September-2024

Other causes	Patient-related (unexpected movements)	29	43.93
	Improperly designed disposition equipment (sharp collectors)	36	55.38

Discussion

Nursing students, especially during their clinical training, are frequently exposed to environments where needle stick injuries (NSIs) are common (Al-Mugheed et al., 2023). They often lack practical experience and familiarity with safety protocols, which increases their vulnerability to such injuries (KHAN and PARI, 2023). Identifying the prevalence and risk factors among this group is crucial to improve training and prevent future incidents.

Present findings revealed that 61.9% of nursing students experienced needles. While another study shows that only 53.7% experienced needle stick injuries (Ali et al., 2023). Additionally, another study shows that 45.3% of the participants experienced needle stick injuries (Mengistu et al., 2021). Another study found that 59.9% of needle stick injuries were reported (Abdelmalik et al., 2023). Furthermore, another study found the prevalence rate of needlestick and sharps injury was found to be 25.2% (Datar et al., 2022). The frequency of NSI among nursing students varies in different research globally, ranging from 11.8 to 85.0% (Al Qadire et al., 2021b, Assen et al., 2020). In addition to this Needlestick injuries (NSIs) are a significant occupational hazard for healthcare professionals, particularly nursing students who may lack experience and exposure to such risks during their training (Nawafleh et al., 2017). The prevalence of NSIs among nursing students, as highlighted in multiple studies, shows substantial variability, reflecting differences in healthcare systems, training, reporting mechanisms, and preventive measures.

Present findings show that 47% positive attitude toward wearing gloves during risky care. Another study shows that when handling sharp objects, 74.2% of people donned protective gloves (Almuslami et al., 2022). One of the most important ways to reduce needlestick injuries (NSIs) and other occupational risks among healthcare workers, especially nursing students, is to wear protective gloves when performing dangerous care, such as handling sharp objects.(Motaarefi et al., 2016).

Current findings revealed that 54% recapped needles after use. Similarly, another study shows that 32.3%) were aware that recapping the needle was the most frequent cause of needle stick injuries (Motaarefi et al., 2016). One of the most risky procedures that might result in needle stick injuries (NSIs) is recapping needles since it raises the possibility of unintentional punctures when replacing the needle cap (Neupane Gaudel and Ghimire Neupane, 2023). The fact that more than half of nursing students still act in this way suggests that there is a serious lack of awareness or implementation of safer behaviors, like discarding used needles right away in containers.

Logical Creations Education Research Institute
MADER E MILAT INTERNATIONAL JOURNAL OF NURSING AND ALLIED SCIENCES
E-ISSN: 2960-2181
Web: www.minasij.com | Email: editor@minasij.com
Volume-02 | Issue-03 | September-2024

CONCLUSION AND RECOMMENDATIONS

In conclusion, unsafe healthcare practices are influenced by both worker-related and environmental factors, with hurrying and inattention being the most common causes. Compliance with safety measures, such as glove use and needle disposal, is inconsistent, and a significant number of nursing students experience injuries but fail to report them. Training on protective measures is essential to improve safety and reporting practices.

The findings of this study underscore the importance of addressing both individual and systemic factors contributing to unsafe healthcare practices. Healthcare institutions must prioritize workplace safety, providing adequate resources, training, and support to mitigate risks. This includes implementing evidence-based guidelines for needle safety, promoting a culture of safety, and encouraging open reporting of NSIs.

Effective training programs should focus on developing nursing students' knowledge, skills, and attitudes regarding sharp safety and injury prevention. Simulation-based training, workshops, and peer-led education can enhance students' competence in handling sharp objects and responding to NSIs. Furthermore, integrating NSI prevention into nursing curricula will ensure future healthcare professionals are equipped to prioritize safety.

To translate research into practice, healthcare policymakers, educators, and administrators must collaborate to develop and implement effective NSI prevention strategies. This includes investing in safety-engineered devices, enhancing reporting systems, and providing support for affected healthcare workers. By prioritizing safety and well-being, healthcare institutions can minimize NSI incidence, promote a culture of safety, and ensure high-quality patient care.

REFERENCES

ABDELMALIK, M. A., ALHOWAYMEL, F. M., FADLALMOLA, H., MOHAMMAED, M. O., ABBAKR, I., ALENEZI, A., MOHAMMED, A. M. & ABAOUD, A. F. 2023. Global prevalence of needle stick injuries among nurses: A comprehensive systematic review and meta-analysis. *Journal of Clinical Nursing,* 32**,** 5619-5631.

AL-MUGHEED, K., FARGHALY, S. M., 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,* 11**,** 1160680.

AL QADIRE, M., BALLAD, C. A. C., AL OMARI, O., ALDIABAT, K. M., SHINDI, Y. A. & KHALAF, A. 2021a. Prevalence, student nurses' knowledge and practices of needle stick injuries during clinical training: a cross-sectional survey. *BMC Nursing,* 20**,** 187.

AL QADIRE, M., BALLAD, C. A. C., AL OMARI, O., ALDIABAT, K. M., SHINDI, Y. A. & KHALAF, A. 2021b. Prevalence, student nurses' knowledge and practices of needle stick injuries during clinical training: a cross-sectional survey. *BMC nursing,* 20**,** 1-7.

ALI, M., BIBI, A., KHAN, J., ARSHAD, S., DURDANA, M. & MUSAFIR, Y. 2023. Student Nurses Knowledge of Needle Stick Injuries at a Private Institute, Karachi: Nurses Knowledge of Needle Stick Injuries. *Pakistan Journal of Health Sciences***,** 79-83.

ALMUSLAMI, O. K., FADUL, S. S., MUNSHI, S. S., SANGOOF, F. M. & MERSAL, N. A. 2022. Awareness and prevalence of needle stick injury among nursing students at King Abdulaziz University. *Evidence-Based Nursing Research,* 5**,** 14-23.

ALTAF, A., JAVAID, A., SHABIR, M., KHAN, S., DANISH, N., KHAN, G. J. & ISLAM, A. 2022. Relationship of Gender to Prevalence, Knowledge, Attitude and Practice among Healthcare

Logical Creations Education Research Institute
MADER E MILAT INTERNATIONAL JOURNAL OF NURSING AND ALLIED SCIENCES
E-ISSN: 2960-2181
Web: www.minasij.com | Email: editor@minasij.com
Volume-02 | Issue-03 | September-2024

Workers Regarding Needle-stick Injuries in Tertiary Care Hospitals. *Pakistan Journal of Public Health,* 12**,** 143-147.

ASSEN, S., WUBSHET, M., KIFLE, M., WUBAYEHU, T. & AREGAWI, B. G. 2020. Magnitude and associated factors of needle stick and sharps injuries among health care workers in Dessie City Hospitals, north east Ethiopia. *BMC nursing,* 19**,** 1-8.

BAGNASCO, A., ZANINI, M., CATANIA, G., WATSON, R., HAYTER, M., DASSO, N., DINI, G., AGODI, A., PASQUARELLA, C. & ZOTTI, C. M. 2020. Predicting needlestick and sharps injuries in nursing students: Development of the SNNIP scale. *Nursing Open,* 7**,** 1578-1587.

BOUYA, S., BALOUCHI, A., RAFIEMANESH, H., AMIRSHAHI, M., DASTRES, M., MOGHADAM, M. P., BEHNAMFAR, N., SHYEBACK, M., BADAKHSH, M. & ALLAHYARI, J. 2020. Global prevalence and device related causes of needle stick injuries among health care workers: a systematic review and meta-analysis. *Annals of global health,* 86.

DATAR, U. V., KAMAT, M., KHAIRNAR, M., WADGAVE, U. & DESAI, K. M. 2022. Needlestick and sharps' injury in healthcare students: Prevalence, knowledge, attitude and practice. *Journal of Family Medicine and Primary Care,* 11**,** 6327-6333.

HASAK, J. M., NOVAK, C. B., PATTERSON, J. M. M. & MACKINNON, S. E. 2018. Prevalence of Needlestick Injuries, Attitude Changes, and Prevention Practices Over 12 Years in an Urban Academic Hospital Surgery Department. *Annals of Surgery,* 267**,** 291-296.

HUANG, J., LI, N., XU, H., LIU, Y., AN, N. & CAI, Z. 2022. Global prevalence, risk factors, and reporting practice of needlestick and sharps injuries among dental students: a systematic review and meta-analysis. *Journal of Hospital Infection,* 129**,** 89-101.

JANJUA, S. S., HANAN, A., SARWAR, H., AFZAL, M. & ALI, A. 2022. Awareness in Nursing Students Regarding Prevention of Needle Stick Injuries: Prevention of Needle Stick Injuries. *NURSEARCHER (Journal of Nursing & Midwifery Sciences)***,** 20-24.

KHAN, R. & PARI, B. 2023. IMPACT OF NEEDLE STICK INJURIES ON STUDENT NURSES AT KTH HOSPITAL, PESHAWAR, PAKISTAN. *Quantum Journal of Social Sciences and Humanities,* 4**,** 268-276.

MENGISTU, D. A., TOLERA, S. T. & DEMMU, Y. M. 2021. Worldwide prevalence of occupational exposure to needle stick injury among healthcare workers: A systematic review and meta-analysis. *Canadian Journal of Infectious Diseases and Medical Microbiology,* 2021**,** 9019534.

MOTAAREFI, H., MAHMOUDI, H., MOHAMMADI, E. & HASANPOUR-DEHKORDI, A. 2016. Factors associated with needlestick injuries in health care occupations: a systematic review. *Journal of clinical and diagnostic research: JCDR,* 10**,** IE01.

NAWAFLEH, H. A., EL ABOZEAD, S., AL MOMANI, M. M. & AARAJ, H. 2017. Investigating needle stick injuries: Incidence, knowledge and perception among South Jordanian nursing students. *J Nurs Educ Pract,* 8**,** 59-69.

NEUPANE GAUDEL, G. & GHIMIRE NEUPANE, T. 2023. Needle Stick Injury Among Nurses and Prevention Strategies: A Literature Review.

SABAA, M. A., HASSAN, A. M., ABD-ALLA, A. K., HEGAZY, E. E. & AMER, W. H. 2022. Needle-stick and sharps injuries: awareness, prevalence and risk factors of a global problem in healthcare workers at Tanta University Hospitals, Egypt. *International Journal of Occupational Safety and Ergonomics,* 28**,** 1419-1429.

SCHMID, K., SCHWAGER, C. & DREXLER, H. 2007. Needlestick injuries and other occupational exposures to body fluids amongst employees and medical students of a German university: incidence and follow-up. *Journal of hospital infection,* 65**,** 124-130.

ZAGADE, H., NILESH, K., ZAGADE, T. & VANDE, A. V. 2020. Study to evaluate prevalence, knowledge and awareness of needle stick injury among dental and nursing: under graduate students. *Indian Journal of Public Health,* 11**,** 213.