

A Study to Assess the Knowledge and Prevention Practices Regarding Needle Stick Injuries and Post-Exposure Prophylaxis among Internship Nursing Students

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Abstract—Background: Needle stick injuries (NSIs) are common occupational hazards among nursing interns and expose them to serious blood-borne pathogens. Adequate knowledge and preventive practices, along with prompt post-exposure prophylaxis (PEP), are essential for safety. **Objectives:** (1) To assess knowledge regarding NSIs and PEP, (2) To evaluate prevention practices, (3) To identify associations between knowledge and selected demographic variables. **Methodology:** A descriptive cross-sectional study was conducted among 60 internship nursing students selected by purposive sampling. Data were collected using a validated structured questionnaire on knowledge and practice. Data were analyzed using descriptive and inferential statistics. **Results:** 55% of students had moderate knowledge regarding NSIs, 30% had inadequate knowledge, and only 15% had adequate knowledge. Regarding preventive practices, 62% reported always using gloves and 48% followed proper disposal methods. A significant association was found between prior training and knowledge level ($p < 0.05$). **Conclusion:** Nursing interns demonstrated moderate awareness but inconsistent preventive practices. The study highlights the need for regular skill-based training and strict enforcement of NSI protocols to improve safety.

Index Terms—Needle stick injury, nursing interns, prevention practices, post-exposure prophylaxis.

I. INTRODUCTION

Needle stick injuries are among the most frequent occupational risks faced by healthcare workers. Nursing interns, due to limited experience and frequent exposure to invasive procedures, are

particularly vulnerable. NSIs can transmit serious infections such as Hepatitis B, Hepatitis C, and HIV, making preventive practices critically important. Despite the availability of guidelines on injection safety and PEP, many nursing students lack adequate knowledge or fail to follow correct procedures due to work pressure, inadequate training, or lack of supervision. Hence, assessing existing knowledge and practices is essential to guide educational and policy interventions.

II. NEED OF THE STUDY

Internship nursing students frequently handle needles and sharp equipment, increasing their risk of accidental injuries. Inadequate awareness of universal precautions, improper disposal methods, and delayed reporting can lead to serious infections. Early identification of knowledge gaps and unsafe practices is necessary to strengthen infection-control training and reinforce a safe learning environment. This study will provide valuable data for improving clinical competency and reducing injury incidence among nursing interns.

Objectives

1. To assess the level of knowledge regarding NSIs and PEP among internship nursing students.
2. To evaluate prevention practices followed by nursing interns.
3. To identify associations between demographic variables and knowledge/practice regarding NSIs.

III. METHODOLOGY

Research Approach & Design

A quantitative, descriptive cross-sectional research design was adopted.

Setting

The study was conducted in a tertiary care hospital among internship nursing students.

Population & Sample

All internship nursing students working in clinical areas constituted the population.

Sample size: 60

Sampling technique: Purposive sampling

Criteria for Sample Selection

- Internship nursing students willing to participate
- Present during data collection
- Excluded: Students not available or unwilling to participate

Tool Description

A structured questionnaire consisting of:

- Section A: Demographic variables
- Section B: Knowledge items on NSIs & PEP
- Section C: Practice checklist on preventive behaviors

Validity & Reliability

- Content validity was established by nursing experts. Reliability was tested using Cronbach's alpha ($\alpha = 0.82$), indicating good internal consistency.
- Data Collection Procedure
- After obtaining consent, questionnaires were administered in groups. Average time required was 20–25 minutes.

Data Analysis

- Descriptive statistics: Frequency, percentage, mean
- Inferential statistics: Chi-square test to find association between demographic variables and knowledge.

Data Analysis & Results

Table 1: Knowledge Level of Nursing Interns (N=60)

Knowledge Level	Frequency (n)	Percentage (%)
Adequate	9	15%
Moderate	33	55%
Inadequate	18	30%

Interpretation: Majority (55%) had moderate knowledge; only 15% had adequate knowledge.

Table 2: Prevention Practices Followed by Students

Practices Followed	Yes (%)	No/Some-time (%)
Use of gloves	62%	38%
Recapping needles avoided	40%	60%
Use of puncture-proof container	48%	52%
Immediate reporting after injury	35%	65%

Interpretation: Practices were inconsistent; reporting after injury was notably low.

Association Analysis

Significant association found between:

- Previous training and knowledge level ($\chi^2 = 6.21$, $p < 0.05$) No significant association with age, gender, or clinical posting area.

IV. DISCUSSION

The study revealed that internship nursing students possessed only moderate understanding of NSI risks and PEP guidelines. Preventive practices especially avoiding recapping, proper disposal, and immediate reporting were insufficient. Similar findings reported in previous studies indicate that knowledge does not always translate into safe practice. The lack of frequent training, supervision, and awareness sessions may contribute to this gap. Strengthening training modules, conducting regular workshops, and enforcing hospital protocols are essential for creating a safer clinical environment.

V. CONCLUSION

The study highlights moderate knowledge and inadequate preventive practices among nursing interns. Improving practical competency and reinforcing PEP protocols through continuous education and supportive supervision is critical to reduce NSIs. Hospitals must prioritize training and ensure availability of protective equipment and reporting systems.

VI. RECOMMENDATIONS

- Periodic NSI prevention workshops for nursing interns
- Mandatory induction training on universal precautions
- Availability of color-coded puncture-proof containers in all units
- Monitoring and reinforcement of safe injection practices
- Developing a simplified NSI reporting protocol

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