



## Needlestick injuries among health care worker: A narrative review

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### Abstract

A needle stick injury is a transcutaneous penetrating wound usually set by a needle tip but possibly additionally at more sharp instruments or objects. It is mostly considered savage in medical facility and Health care workers with recurrent blood exposures are: nursing staff, nursing students, interns and medical students, labor and delivery room personnel, laboratory technicians, physicians, surgeons, emergency care providers, dentists, health facility cleaning staff, and clinical waste handlers.

**Objective:** The objective of this narrative review is to find the prevalence, knowledge, attitude, practice, and response to needle stick injuries.

**Method:** Types of studies: A computerized search has been done to collect the articles that are available in different databases from t019 to 2022. The search strategy was limited to only the English language and considered only the studies that were conducted on human species. The initial search strategy is made by using terminology and its synonyms, which are processed in databases such as PubMed and EEBSCO.

**Result:** Needle stick injuries are common among health care workers. The prevalence, knowledge, attitude, prevalence, and incidence are such that most nurses, health workers, and nursing students will experience a needlestick injury in their career. It is important to be aware of many preventive measures, including vaccination and the safe handling of sharps, which can reduce transmission. If an injury does occur, it is imperative to promptly report it to your supervisor and seek appropriate care.

**Conclusion:** This article is accomplished, considering the achievements.

**Keywords:** Needle stick injury, health care worker, nurses, Nursing students

### 1. Introduction

A wound caused by a needle that accidentally punctures the skin is called a needle stick injury. Needle stick injuries eat a percutaneous wound set by needlepoint, but possibly also buy other shop instruments or objects. Healthcare workers with frequent blood exposure are nursing staff, nursing students, physicians, surgeons, emergency care providers, health, facilities, cleaning staff, and waste, handlers. Sharp injuries occur in patient rooms (39%), operating rooms (27%), OPD 8%, and emergency rooms (8% Laboratory: 5%; others: 13%. Mainly, six devices account for 80% of all injuries: disposable syringes (30%), suture needles (20%), and winged-steel needles. 10% intravenous catheter stylets; 5% phlebotomy needles; 3% scalpels; 8% ampoules; 2% The majority of needle stick injuries occur when health care workers are disposing of needles, administering injections of blood, recapping needles, handling trash and dirty linens, etc. needle stick injury during and after disposal: 10%, after use and before disposal: 70%; before and during use: 20%. Sharp injuries mostly occur in the disposal of needles, administering injections, drawing black blood, middle handle trace, and dirty linens. Injury can be caused by needles, scalpels, and other sharp instruments or devices during procedures, when cleaning used instruments, during disposal of used needles,

when transferring body fluid between containers, when handling sharp instruments after procedures, injury, the most frequent cause of bloodborne infection, and in healthcare, setting realistic and injury with a needle or other sharp device. More than 20 pathogens have been reportedly transmitted from needle stick injuries, the most serious of which are hepatitis, hepatitis B, and HIV. exposure that might place the CP at risk for HPV, HCV, or HIV infection as a result of a cutaneous injury, for example, a needlestick injury or cut with sharp objects that contact the mucous membrane or non-intact skin, or export skin that is affiliated with dermatitis. Worldwide, the first documented case of an HIV-transmitted patient of HCW was a UK nurse who sustained a needle injury. Well obtain blood from the arterial line of Africa. Patient with its most likely causes our unsafe work practices, likely capping removal of fellow tummy tube holders, failure to dispose properly, disposal system failure like overall containers needles sticking out of containers or pursing sides injuries during and after an injection that affect health workers are doing recapping, caring needles, and syringes patient movement child in appropriate disposal.

#### 1.1 AIM

The aim of this review is to investigate and assess infection

control, knowledge, attitude, practice, and response resources related to needle stick injuries among health care workers.

**1.2 Objective**

The objective of this narrative review is to determine the prevalence, knowledge, attitude, practice, and response to needle stick injuries.

**2. Methodology**

**2.1 Search strategy method**

Type of studies: A computerized search has been done to collect the articles that are available in different databases from 2019 – 2022. The search strategy was limited to only the English language and considered only the studies that were conducted on human species. The initial search strategy is made by using terminology and its synonyms, which are processed in databases such as PubMed and EBSCO. The terminologies that have been used to collect the articles.

**2.2 Types of Studies**

In all the studies, the research design is cross-sectional.

**2.3 Types of Participants**

Nurses, health care workers, or nursing students.

**2.4 Setting**

Most of the study was conducted in a hospital.

**3. Outcome**

Needlestick injuries Among health care workers. In addition to this, a manual PUBMED search was undertaken using the keywords and searching by synonyms from already found articles. An addition of seven articles was found. The initial search retrieved 9456 articles, of which 6669 were selected manually. Duplicates were removed, and we reviewed 302 articles for eligibility. 2485 articles were excluded because of duplication in two databases. 280 more studies were excluded due to the unavailability of the full text. Hence, 22 articles were excluded due to the unavailability of the full text. Hence, 7 articles were screened, which include quantitative studies.

**3.1 Prisma Flow**

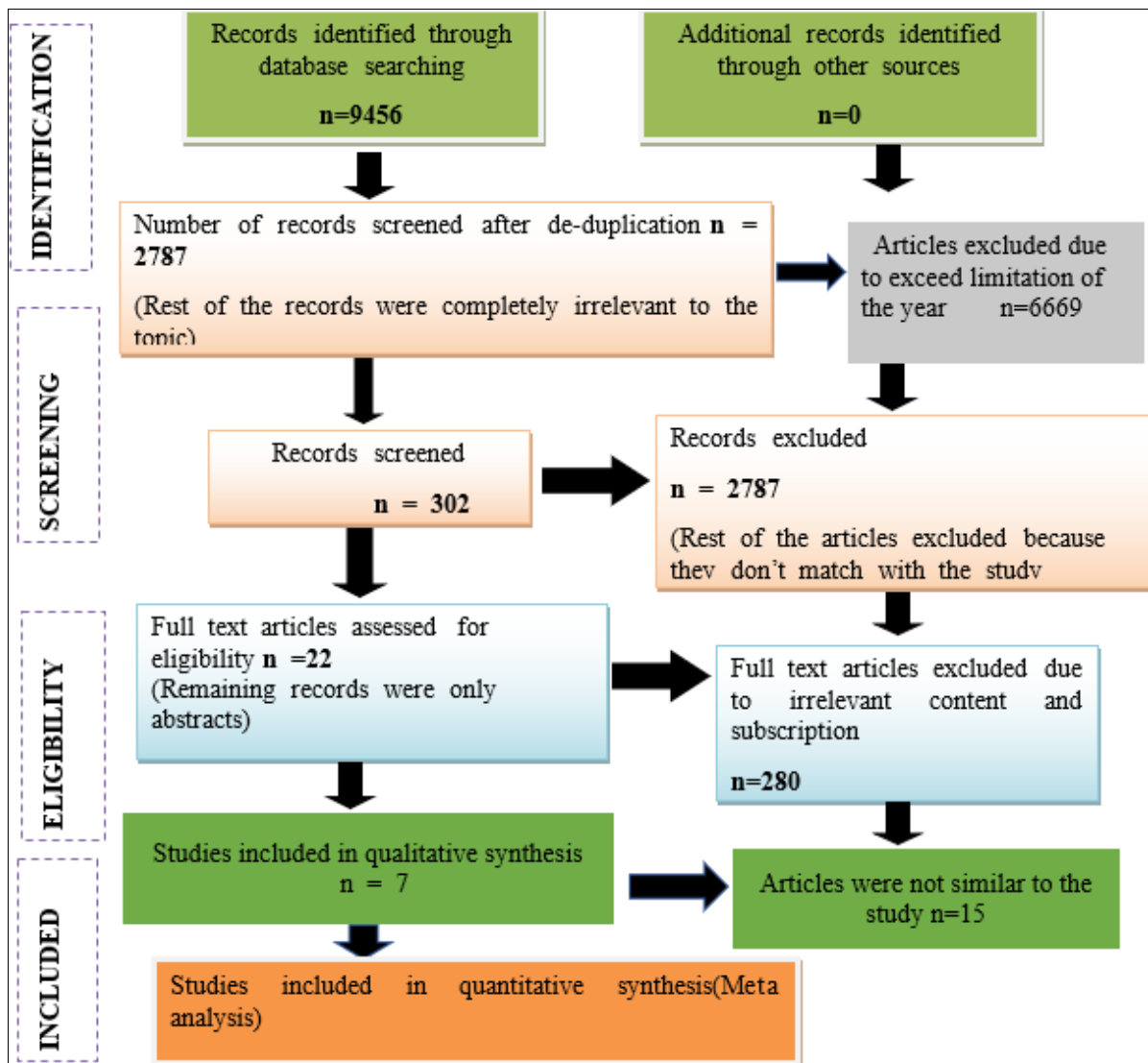


Fig 2: Prisma flow chart of narrative Review

**Table 1:** Data Extraction

Author name and year	Research design	Finding of the study
Rajpal. Shweta	Cross-sectional study	In this study, the comprehensive prevalence of needle stick injuries was 77/384 (20.1%). Among sub-groups, NSIs were 26.6% and 31.3% in nurses, 37.5% and 16.7% and 16.7% in technicians, 15% and 12.5% in ward boys/aaya, and 15.6% and 9.4% in sweepers of public and private hospitals, respectively.
Bharti Prakash Prem	Cross-sectional study	Around 66.7% of staff nurses were exposed to needle stick injuries during their working hours in the health care setting. There was a significant association between NSIs and the place of work at the hospital. There was a significant association between NSIs and the place of work and education of nursing staff in a nonparametric dual logistic regression. About 26% of the nurses were unaware that recapping should be done or not for used needles, and 35% of staff nurses recapped the needle after use.
Chaudhary Das Debapriya	Cross-sectional study	Staff nurses most frequently report needle stick injuries. Among the group, the most common cause of needle stick injuries was found to be the recapping of the needle, followed by cleaning, HGT, and procedure. The most common cause of needle stick injuries among housekeeping staff was found to be needles lying on the floor and the accidental mixing of sharp biomedical waste with other waste.
Sriram <i>et al.</i>	Cross-sectional study	Around 10.81% of the total health care providers in the teaching hospital were exposed to needle stick injuries. Syringe needles (75%) were the most common devices leading to needle stick injuries. The majority of needle stick injuries took place in the wards of the different departments. (75%). The morning shift (70%) was the most common time of the day for the occurrence of needle stick injuries. Only 65% of healthcare providers were wearing gloves at the time of the injury. The majority (82%) took immediate treatment after the needle stick injury.
Bharti PP <i>et al.</i>	Cross-sectional study	The most common cause of needle stick injuries was handling the sharp objects (38.8%), followed by disposing of the sharp objects (19.3%). Furthermore, nurses were found to be the highest-risk category of health care workers experiencing needle stick injuries (49%), while medical waste handlers (1.5%) and dentists (1.3%) were least likely to incur injuries.
Bashir & Qadri	Cross-sectional study	Majority of healthcare workers (94% knew about realistic injury), 92% were aware that HIV can be transmitted through realistic injury, 78.4% and 69.65% were aware of hepatitis B and hepatitis C transmission, respectively, about 28.4% of subjects encountered needle injury in India. The more it was defined, the more it was significantly associated with different categories of healthcare workers (P <0.001).

### 3.2 Summary of finding

Available 7 literature are Cross-sectional study Out of 7 studies concluding that needle stick injury results showed a high level of needle stick injury, good knowledge and attitude, adequate practice, and prevalence among nursing, health workers, and nursing students showed good knowledge in nursing staff and laboratory personnel and a positive attitude toward needle stick injury. The nursing students and health workers reported a low level of needle stick practice. Raising awareness among nurses, health workers, and student nurses and conducting continuing education related to sharp devices and safety is highly recommended.

### 3.3 Importance in Education

- The nursing curriculum should focus on needle stick injuries using different teaching methods.
- Nursing students should be trained in incidental planning and the health education strategy regarding deep knowledge of needle stick injuries.

### 4. Future Significance

Needle stick injury accidentally infected with HIV, AIDS, or Hepatitis B or C because of a needle stick or splash injury while performing the duties of a normal occupation.

### 4.1 Limitation

Computerized databases were limited.  
Limited to only health workers

### 5. Conclusion

Needle stick injuries and their underreporting among health care professionals are still prevalent risks. Raising awareness among health care workers and improving the

reporting system for needle stick injuries to ensure more protection and early use of post-exposure prophylaxis are required. Implementation of safety precautions and safe injection practices and providing engineered safety devices may further reduce risk.

### 6. Conflict of Interest

Not available

### 7. Financial Support

Not available

### 8. References

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**How to Cite This Article**

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