



Guarding Life Against Sharps and Sticks (G.L.A.S.S)

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Abstract

Needle stick injuries are injuries caused by needles or sharp objects penetrating the skin, often occurring in healthcare settings. The campaign was conducted among nurses at Indraprastha Apollo Hospitals during February 2024. The objectives of the campaign were to reduce the incidence of needle stick injuries, to assess the pre-test and post-test knowledge regarding prevention of Needle stick injury. 249 Staff nurses were selected for the study. Numerous campaign activities were organized, including clinical teaching program, Informative one-day continuing Nursing education session on preventing of Needlestick injuries, Multiple activities and quiz related to Needle stick injury, Daily audits and briefing. The percentage of Needle stick injury incidence between September 2023 and February 2024 was 35, which got reduced to 20 between March and August 2024. The overall post-test level of knowledge showed that 97 of them had an average knowledge, and 152 had good knowledge.

Keywords: *Needle stick injury, health care workers, Hospital, Prevention of NSI, clinical teaching program.*

I. Introduction

A Needle stick injury (NSI) is a penetrating or cut wound in the skin cause by a needle or sharp instrument in the healthcare setting. Needle stick injuries are known to occur frequently in healthcare setting and can be serious, Needle stick injuries is a severe occupational hazard worldwide and around 3 million healthcare workers sustain sharps injuries each year. The introduction of universal precautions and safety conscious needle designs has led to a decline in needlestick injuries, Awareness of needlestick injuries started to develop soon after the identification of HIV in the early 1980s. However, today the major concern after a needlestick injury is not HIV but hepatitis B or hepatitis C.¹

Factors associated with needle stick injury.

The results revealed that over half of the injury occur when staff removed the insulin pen needle, injured due to intravenous cannulation, recapping, blood sampling and improper handling sharps.²

II. Materials and methods

The campaign titled “GLASS” (Guarding life against sharps and sticks) was initiated in the month of February 2024 The objectives of the campaign were.

- To raise awareness about the risks associated with NSI.
- To promote preventive measures among healthcare workers
- To reduce the incidence of needle stick injuries
- To ensure the safe and effective administration of medication by promoting the use of single-use needle
- To provide education to empower individuals to protect themselves and others from Needle stick injuries
- To assess the pretest and post-test knowledge regarding prevention of Needle stick injury

The campaign happened in three phases such as Pre-phase, Intra phase and post phase.

II.I Pre-phase

The NSI Incidents reported from September 2023 to February 2024 was 35. The root cause analysis of the Needle stick injury data revealed that.

- Time at which maximum Needle stick injury happened is between 10:00 Pm to 9:00 am
- Specific areas where injuries are most likely to happen are Patient rooms, injection stations, blood and tissues sample processing and waste Disposal areas.
- The primary reason for Needlestick injuries were.
 - ✓ Unsafe practices and behaviours
 - ✓ Unexpected patient Movement
 - ✓ Non-use of safety-Engineered Devices
 - ✓ Failure to Dispose Immediately
 - ✓ Recapping
 - ✓ Mishandling of Needles

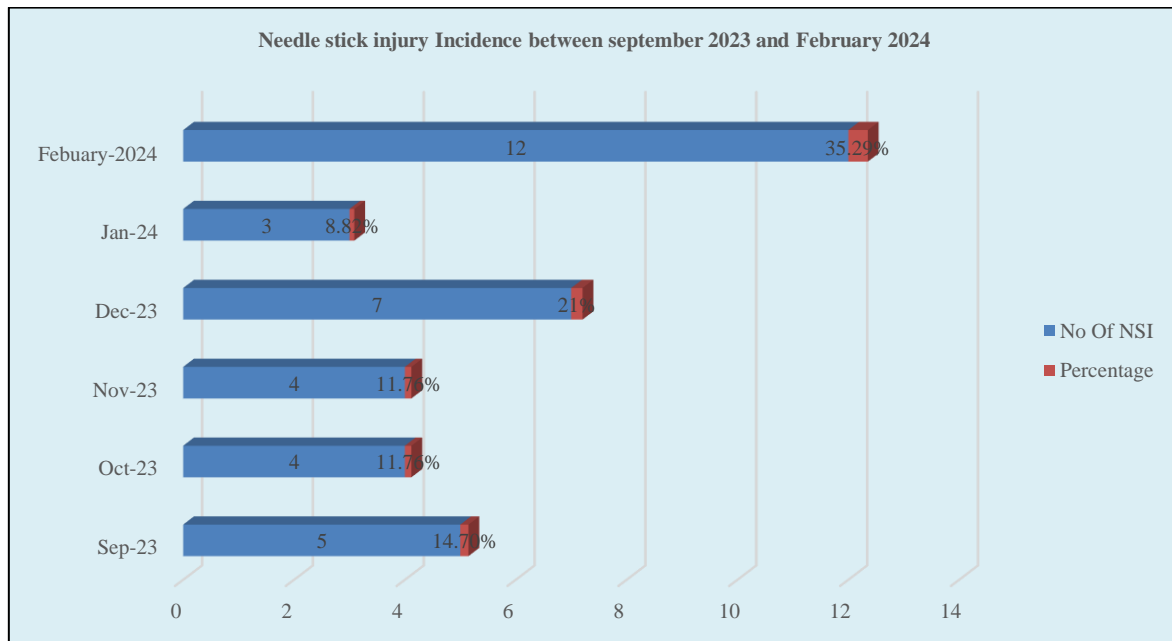


Fig. 1: Needle stick injury Incidence between September 2023 and February 2024

2.2 Intra-phase

Campaign Activities

DATE	TIME	SESSION	VENUE
01/02/2024	1 PM -2PM 3PM-4PM	NSI OPENING	EDUCATION & TRAINING DEPARTMENT
05/02/2024	1 PM -2PM 3PM-4PM	PRE-TEST	EDUCATION & TRAINING DEPARTMENT
06/02/2024	11 AM-1 PM	CLINICAL TEACHING PROGRAM	TOWER-1
07/02/2024	11 AM-1 PM	CLINICAL TEACHING PROGRAM	TOWER-1I
08/02/2024	11 AM-1 PM	CLINICAL TEACHING PROGRAM	TOWER-1II & DIALYSIS
09/02/2024	11 AM-1 PM	CLINICAL TEACHING PROGRAM	1 st Floor
10/02/2024	11 AM-1 PM	CLINICAL TEACHING PROGRAM	HOUSE KEEPING/GDA
12/02/2024	1 PM-2PM 3 PM-4 PM	POST TEST	EDUCATION & TRAINING DEPARTMENT
13/02/2024	12 PM -2PM	QUIZ COMPETITION/FUN GAMES ACTIVITIES	TOWER-I
14/02/2024	12 PM -2PM	QUIZ COMPETITION/FUN GAMES ACTIVITIES	TOWER-II
15/02/2024	12 PM -2PM	QUIZ COMPETITION/FUN GAMES ACTIVITIES	TOWER-III
16/02/2024	12 PM -2PM	QUIZ COMPETITION/FUN GAMES ACTIVITIES	HOUSE KEEPING/GDA
21/02/2024	1PM-2PM	EDUCATIONAL TRAINING AWARENESS-CNE	FOR ALL UNIT
26/02/2024	12 PM -2PM	NSI CLOSING WITH A TOKEN OF APPRECIATION FOR WINNERS FOLLOW BY CERTIFICATE DISTRIBUTION	EDUCATION & TRAINING DEPARTMENT

Fig. 2: Needle stick injury Campaign Activities

- Pre-test Session

Nursing staff were given a pre-test with 13 questions regarding prevention of Needlestick injury via online Testmoz.



Fig. 3: Pre-test Session

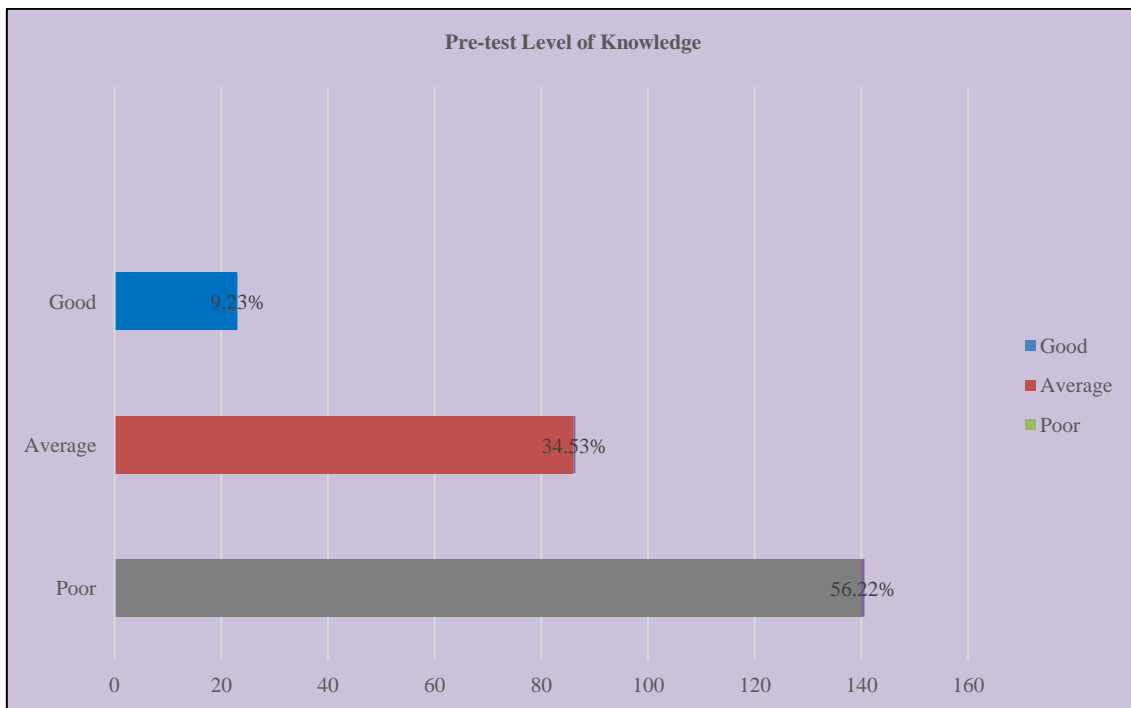


Fig. 4: Pre-test level of Knowledge regarding prevention of Needle stick injuries

Fig4: shows that 56.22% of staff had poor knowledge whereas 34.55% average and only 9.23% had good knowledge.

- Clinical teaching Program were conducted for each tower.
- Demonstration on sharps safety handling and how to use individual use pen needle.
- An Informative one-day continuing Nursing education (CNE) session on preventing of Needlestick injuries was conducted.

- Multiple activities and quiz related to Needle stick injury are organized in each tower to enhance the staff interest for learning.
- Daily audits were conducted to improve staff safety and reduce needlestick injuries.
- Daily Briefing was held in all the three shifts on prevention of Needlestick injuries.



Fig. 5: Clinical Teaching program



Fig. 6: Activities and quiz competition

2.3 Post phase

Post-test session (After 7 days)

Nursing Staff were given a post-test after 7 days with 13 questions regarding prevention of Needlestick injury via online Testmoz.



Fig. 7: Post-test Session

- Winners for post-test and quiz competition were rewarded.

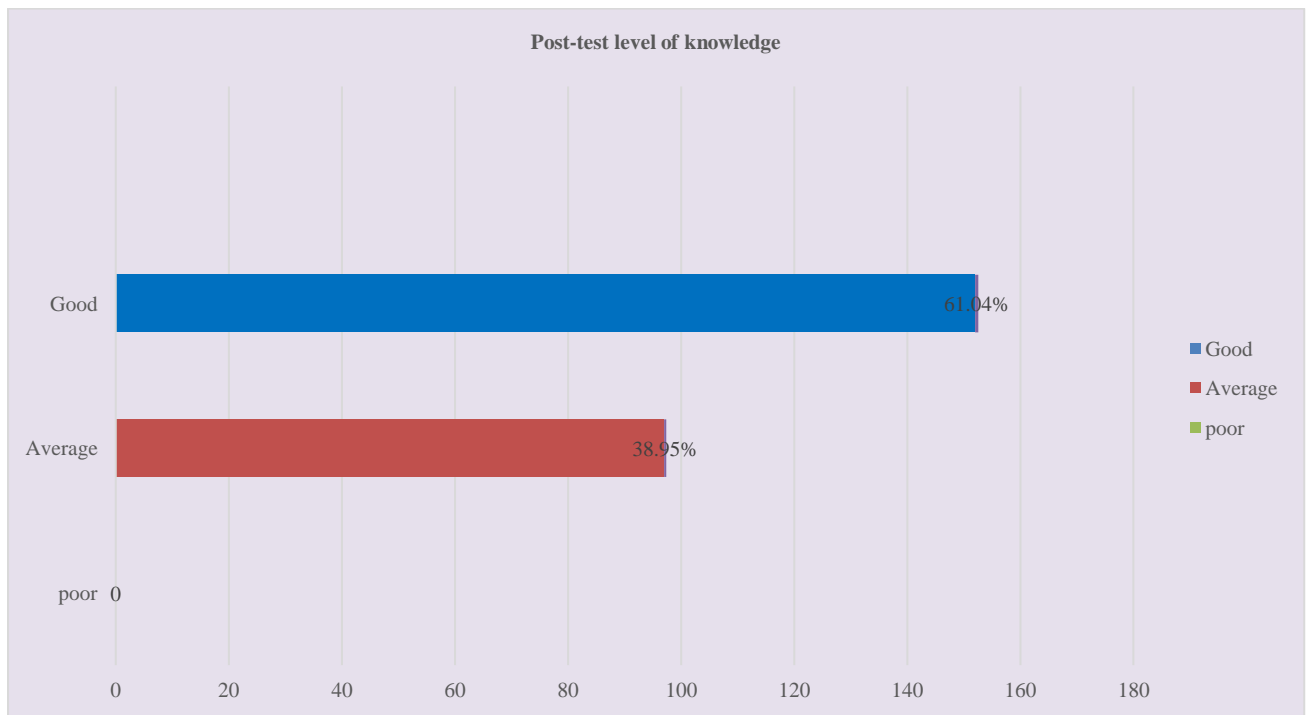


Fig. 8: Post-test level of Knowledge regarding prevention of Needle stick injuries

Fig. 9: shows that 38.95% of staff had average knowledge 61.04% of staff nurses had good knowledge about prevention of needle stick injury.

III. Results

There was a gradual reduction in the number of NSI from March 2024 to August 2024.

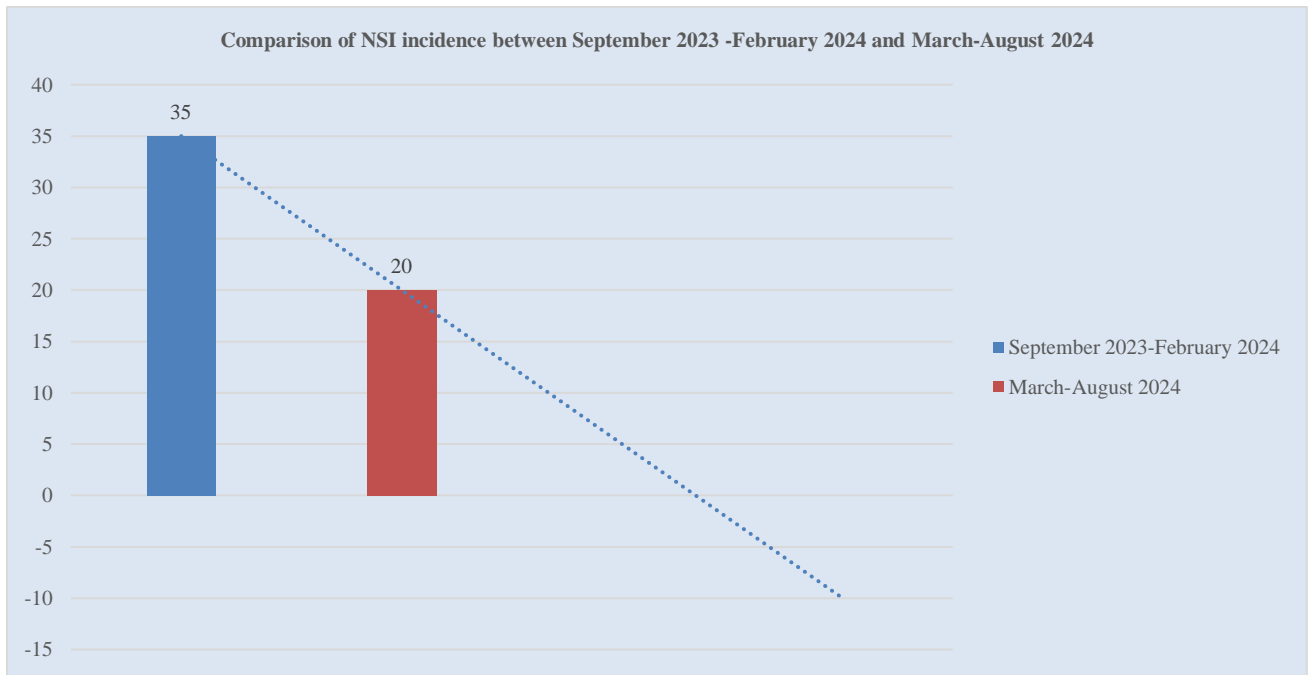


Fig. 9: Comparison of NSI Incidence between September 2023-February 2024 and March-August 2024

IV. Discussion

The Campaign's impact was evident in reducing the NSI incidence rate from 35 to 20. To maintain this, decrease its crucial to continue efforts to prevent further incidents. The following substance activities are ensured.

- ✓ Daily audits had been conducted to ensure correct assessment.
- ✓ Daily briefing happens in all the three shifts on prevention of NSI.
- ✓ Proper training in needle handling and disposal techniques id conducted at regular intervals.
- ✓ Needle safety protocols that include the use of safety-engineered needles and devices are implemented to minimize the risk of injuries.
- ✓ Simulation exercises for the staff nurses to practice safe needle handling are conducted regularly.
- ✓ The culture of reporting all needle stick injuries is promptly reported without the fear of reprisal is encouraged.
- ✓ Psychological support and counselling services are provided for those who have experienced NSI, addressing any anxiety or stress related to the incident.
- ✓ Safe sharps disposal is promoted.

V. Conclusions

Needle stick injury is a major occupational hazard for Health care workers. It causes major economic burden on health care system.² Regular training of all categories of Health care workers on infection control practices, timely reporting of Needle stick injury incident, proper care while handling sharps and use of safety engineering devices to be involved more are some of the practices to reduce Needle stick injury.

VI. Compliance with ethical standards

Disclosure of conflict of interest

There are no conflicts of interest in connection with this paper.

Statement of Ethical approval

The present research work does not contain any studies performed on the animals/human subjects by any of the authors. The campaign was conducted with the approval of the Group Director Nursing and all the staff Nurses participated with their own interest.

Statement of informed consent

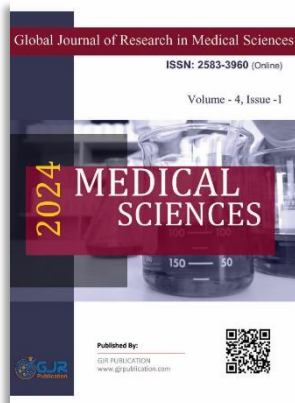
Informed consent was obtained from all individual participants included in the study.

VII. Reference

1. Verma. A. Study of Prevalence and Response to Needle Stick Injuries among Health Care Workers in a Tertiary Care Hospital, Indian journal of community medicine,2024;35(1)
DOI: 10.4103/0970-0218.62565
2. Sharma. M. Effectiveness of educational program on knowledge regarding needle stick injuries. Research Gate,2023;18(1) DOI:10.30574/wjarr.2023.18.1.0663

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