Content available at: https://www.ipinnovative.com/open-access-journals

Indian Journal of Microbiology Research

Journal homepage: https://www.ijmronline.org/

Original Research Article

Awareness regarding prevention and management of needle stick injury among the health care providers in a tertiary care Hospital, Bhubaneswar, Odisha- A qualitative data exploration

Sonali Kar[1,*], Snigdha Singh[1], Pragyan Parimita[1], Alpana Mishra[1], Prem Sagar Panda[1]

[1] *Kalinga Institute of Medical Sciences, Bhubaneswar, Odisha, India*

ARTICLE INFO

Article history:
Received 20-06-2022
Accepted 23-06-2022
Available online 08-07-2022

Keywords:
Needlestick injury
FGD
AIDS
Occupational hazards

ABSTRACT

Background: Needle stick injuries are preventable causes of fearsome diseases like Hepatitis B and HIV. In spite of this knowledge, the health care providers are quite negligent, and the institutional support too is compromised due to the increased demand for services.

Objectives: The current study is a dipstick audit of the knowledge and practices on NSI (prevention and management) among exposed health care workers, with specific reference to HIV infection in a private health facility in Bhubaneswar city, using an unorthodox tool of Focus Group Discussions among the participants.

Materials and Methods: The exercise was a part of the academic activity of health promotion on World AIDS Day 2021. Health care workers such as doctors, paramedical staff & utility staff voluntarily participated in the FGD session. Total 3 FGDs were conducted at 3 different places inside the hospital premises. Three moderators were selected previously and after discussing the theme of World AIDS Day, they guided the FGDs with similar probing questionnaires. The sessions were recorded with the help of a recorder and also noted down along with Sociograms.

Result: The data gave a real picture of how even premier institutions are complacent regarding the problem. Only 27% knew about the SOPs, and in none of the stations,SOPs were displayed or a register was maintained regarding NSI in their work area. None of the participants were aware of Post Exposure Prophylaxis for the same. This indeed highlighted an ignored aspect of quality health care.

Conclusion: The data was an eye-opener in a tertiary care center and from time to time there should be refresher training or sessions to increase the level of awareness.

1. Introduction

Mushrooming of health care providing units ascends to biomedical waste generation and also the serious health consequences related to its inappropriate and inadequate handling.

Needlestick injuries (NSIs) are among the most common occupational hazards among healthcare workers (HCWs) worldwide. World Health Organization (WHO) estimated that NSIs cause HCV accounts for 16,000, HBV accounts for 66,000, and HIV accounts for 1,000 annually among Health Care Workers. Occupational exposure to needle stick injuries (NSIs) represents the most common sources of infection such as hepatitis B virus, hepatitis C virus, and human immunodeficiency virus (HIV).[1] However, in spite of widespread alerts, it continues to be ill-reported and a topic of stigma and surreptitiousness. The current

* *Corresponding author*.
E-mail address: drsnigdhas92@gmail.com (S. Kar).

https://doi.org/10.18231/j.ijmr.2022.024

study encourages an informal qualitative tool to explore the adherence to measures against NSI in a tertiary care set up in Bhubaneswar.

Focus group discussions are qualitative exercises used to collect data through group interaction.[2] This method is used more to elicit information about community problems but in this study, it was used to extract unbiased first-hand information on the subject in question, which was needle stick injuries.

2. Objectives

1. To gather information on knowledge and practices on NSI (prevention and management) among exposed health care workers, with specific reference to HIV infection.
2. To suggest recommendations to the work areas on the advocating of prevention and management of NSI.

3. Materials and Methods

On the eve of observance of World AIDS Day on 1st December 2021, and as a part of an academic program, requisite Institutional permission was taken, and Focus group discussions (FGD) were conducted as per WHO norms.

The three key areas, whose workers were likely to be prone to NSI were chosen, i.e. Nursing station for Infection Control, Central Lab and Emergency/Casualty. A mix of preidentified nursing staff, lab technicians, and waste management staff participated in the exercise. Permission was taken from the head of institute and the departmental heads, being an academic exercise, ethics approval was waived off.

A predesigned pretested checklist was used to initiate a discussion among at least 10 workers (homogeneity with regards to the type of work i.e exposure to sharps and needles was maintained), with a team of faculty as facilitators. Questions were posed to the participants as per the checklist, by the facilitators in an informal manner and their responses were recorded, with their due consent. Utmost care was taken to avoid any prompting when a participant was speaking. Moreover, the speaker was gently diverted or asked another question if he/ she was deviating from the core topic. The timing of programme did not exceed 40 minutes. FGD was recorded in a template that included -the participants who spoke, participants who chose to keep quiet, the points generated, and any conflicts or discordance in the group. The entire exercise was audio-visually recorded and transcripted. The transcripts and infograms (proxy for sociograms for FGDs done in community settings) were analysed for final results.

3.1. Data analysis

The discussion points were segregated under 2 headings- The Main theme and the Sub themes, which included -

3.1.1. Main theme

1. Do they feel World AIDS Day should be observed?
2. Do they feel that the observation of a day adds more relevance to the theme?
3. Did they know anything extra from the last observation organized?

3.1.2. Sub-theme

1. Anyone in the group experienced NSI, if yes how often
2. What did they do after the injury?
3. Do they report such incidents?
4. If not, do they feel they should be reported?
5. Reasons for NSI?
6. Did they panic post injury?
7. Did they consult an expert or their senior in NSI?
8. Did they go for some testing post-injury?
9. Do they have a protocol in their workstation for NSI incidents?
10. Were they using appropriate Personal Protective Equipment (PPE)?
11. Did they avail leave from work because of NSI?
12. Suggestions on how to limit NSI
13. -Do they take Hepatitis B prophylaxis: If Not, the reason for not being vaccinated? If Yes, partial/ complete vaccination?
14. Were they supported by the institution post-injury?
15. Do they take HIV prophylaxis for suspects of NSI ?

Post FGD, the session ended by apprising the group about NSI and the importance of its reporting in addition to information about the latest HIV prophylaxis for suspect NSI.

4. Results

Overall the participants with maximum interaction in the exercise reflected a higher mean age (40-50 yrs) and higher years of work experience (mean 10 years; SD 2.5) in comparison to the nonrespondents. The infograms station-wise were used to derive inferences on the knowledge and practices among the groups involved in the exercise.

The infograms noted down during the exercise depicts the interaction of the participants.

1. 1/11 participants (P10-WMS) had attended an educational awareness programme regarding NSI/HIV AIDS.
2. 1/11 participants (P5-nurse) experienced NSI once and attributed the incident to recapping of needle.
3. 1/11 participants (P5-nurse) had an idea about SOPs to be followed after encountering a NSI.

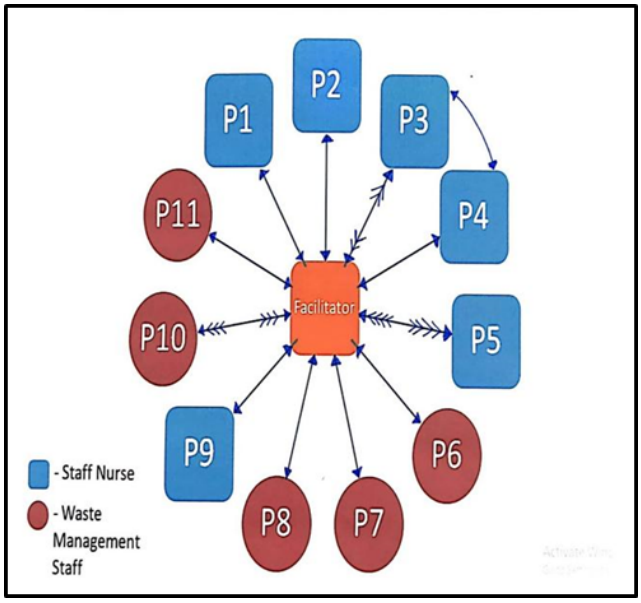

Fig. 1: Infogram of FGD conducted at nursing station of infection control unit

4. 2/11 participants (P6, P8-nurses) had not received complete Hep B Vaccination and mentioned Covid as the reason for not completing their course.
5. 3/11 (27.3%) participated in this discussion.

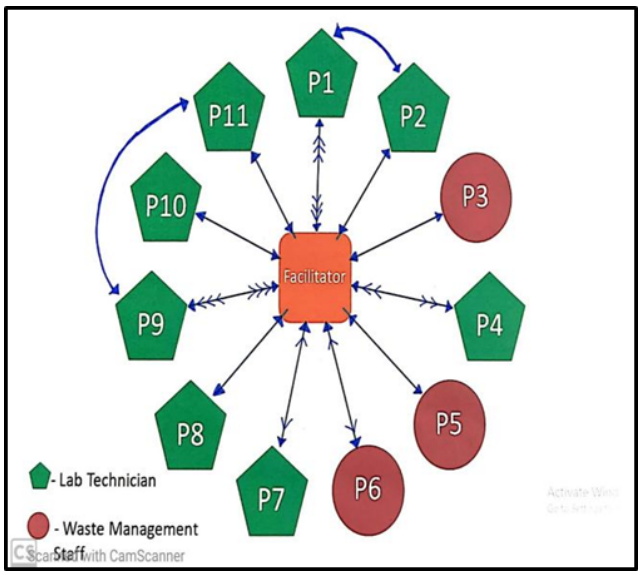

Fig. 2: Infogram of FGD conducted in central laboratory

1. 1/11 participants (P1-LT) had attended an training programme regarding NSI/HIV AIDS.
2. 3/11 participants (P1, P4, P9-all LTs) experienced NSI multiple times and attributed the incident to high work load.
3. 2/11 participants (P2, P3) had an idea about SOPs to be followed after encountering a NSI.
4. 100% participants were completely vaccinated against Hep B.
5. 3/11(27.3%) participated in the discussion.

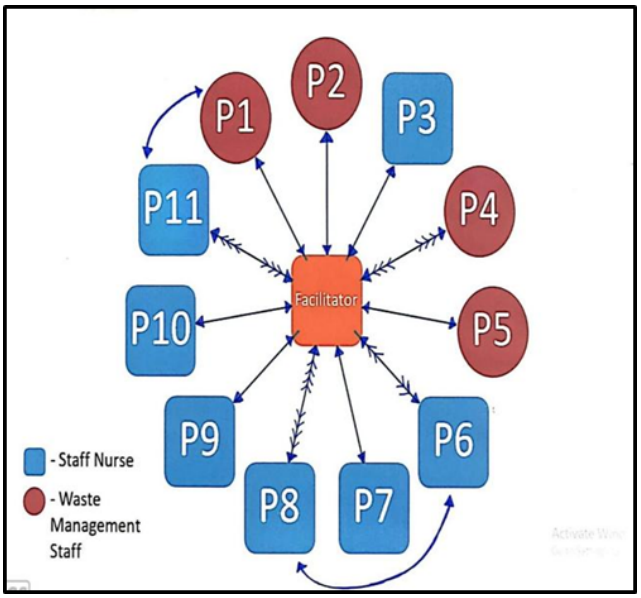

Fig. 3: Infogram of FGD conducted at emergency/casualty

1. 1/11 participants (P8-nurse) had attended an educational programme regarding NSI/HIV AIDS and learnt about transmission, prevention and control.
2. 2/11 participants (P8, P11-nurses) experienced NSI multiple times and attributed the incident to recapping of needle and lack of proper usage of PPE.
3. 2/11 participants (P8, P11-nurses) had an idea about SOPs to be followed after encountering a NSI.
4. 100% participants were completely vaccinated against Hep B.
5. 4/11(36.3%) participated in discussion.

The Central Lab was found to be the most vulnerable site for NSIs, due to the increased workload and maximum reports of NSIs. The LT/Nurse were the most vulnerable group of workers to NSIs, as hinted by inputs. The nonresponse and lack of participation of BMW management staff in terms of occurrence and management of NSI, were the sentinel group identified for training on NSIs and management. NSI reported were mostly attributed to the practice of recapping of needles, despite proper usage of PPE.

Vaccination being inadequate among these active work sites also emerges as an area of concern. SOPs were not put up in any of the workstations. Use of PPE by the staff especially the BMW staff was erroneously reported.

5. Discussion

The above exercise is a simple projection of gaps in knowledge and practices and their influencers for needle stick injuries. Instead of taking a survey, wherein subjectivity refrains information, an informal discussion was done to elicit information and at the same time impart health education. In this study nearly 27% in all 3 groups reported a NSI, but the procedures to be done subsequent to that were unclear to all, akin to other studies wherein only 7%-15.6% workers knew what steps are to be done post-NSI.[3,4] Similarly, the prevalence of NSI were 8.4%, 11.57%, 20.1% & 35.1% by studies conducted at different hospitals.[5–8] Use of PPE was good among nurses and lab technicians (100%) but the knowledge of Post Exposure Prophylaxis (PEP) was only 88.5% in this study, while in studies in Tamil Nadu it was nearly 99.4%,[9,10] this could be because the high prevalence of AIDS in the city and state, for which sharing of equipment and PPE are restricted. Similarly, the knowledge about PPE was seen among 80.4% in a study conducted by Mponela MJ et al.[8] Hepatitis B vaccination in this study is reported 100% among nurses and technicians but not among Biomedical waste management workers, even if their susceptibility is high. Similar findings are noted in a study done in dental premises.[11] The vaccination status is satisfactory compared to other studies done by Batra V et al (49.6%),[12] Byrd KK et al (63.4%).[13]

6. Conclusion

The Focus Group Discussion conducted reflects the lack of awareness/educational exercises among the healthcare workers vulnerable to NSIs or similar themes of work place exposures and hazards, SOPs to be followed after a NSI, although available at the work place, was not followed and practiced. The theme of NSI is to be addressed adequately at the work level among health care providers.

7. Recommendations

1. Robust pre-orientation training, vaccination and refresher measures are advocated to identify and also tackle the burden of NSIs.
2. Registers reporting NSIs and its subsequent management to be encouraged to remove the taboos regarding the theme.
3. SOPs to be clearly put up at the work stations, practiced and reinforced by the workers regardless of their designation. The annual reports, accident reports, as required under BMW rules and regulations, should be submitted to the concerned authorities as per the standard format.
4. All the generators of biomedical waste should adopt universal precautions and appropriate safety measures while handling the bio-medical waste.

8. Limitations

Single centric exercise, so the results cannot be generalised. FGD is not an ideal way out for knowing burden of NSI but here was done as the workers were closed groups and belonged to 1 center, hence recommendations could be robust. The homogeneity of the groups was maintained only regarding the workplace and exposure to NSI and not across the composition of the group.

Although the FGD was conducted as an experimental tool to seek out the ground level lacunae pertaining NSIs through an interactive and unbiased session, the presence of the area heads or seniors among the same cadre could have affected the responses.

9. Source of Funding

None.

10. Conflict of Interest

None.

References

1. Bouya S, Balouchi A, Rafiemanesh H, Amirshahi M, Dastres M, Moghadam MP. Global Prevalence and Device Related Causes of Needle Stick Injuries among Health Care Workers: A Systematic Review and Meta-Analysis. *Ann Glob Health*. 2020;86(1):35. doi:10.5334/aogh.2698.
2. Scheelbeek PFD, Hamza YA, Schellenberg J. Improving the use of focus group discussions in low income settings. *BMC Med Res Methodol*. 2020;20:287. doi:10.1186/s12874-020-01168-8.
3. Saravanan K, Lyngdoh M, Shanthibala K, Brogen A. Knowledge and practices of needle stick injuries among nurses in a tertiary care hospital in Northeast India-A cross sectional study. *IOSR J Dent Med Sci*. 2018;17(3):72–7.
4. Madhavan A, Asokan A, Vasudevan A, Maniyappan J, Veena K. Comparison of knowledge, attitude, and practices regarding needle-stick injury among health care providers. *J Family Med Prim Care*. 2019;8(3):840–5.
5. Alfulayw KH, Al-Otaibi ST, Alqahtani HA. Factors associated with needlestick injuries among healthcare workers: implications for prevention. *BMC Health Serv Res*. 2021;21(1):1–8.
6. Alsabaani A, Alqahtani NS, Alqahtani SS, Al-Lugbi JH, Asiri MA, Salem SE, et al. Attitude and Practice Toward Needle Stick Injury Among Health Care Workers in Abha City, Saudi Arabia. *Front Public Health*. 2022;10:771190. doi:10.3389/fpubh.2022.771190.
7. Isara AR, Oguzie KE, Okpogoro OE. Prevalence of needlestick injuries among healthcare workers in the accident and emergency department of a teaching hospital in Nigeria. *Ann Med Health Sci Res*. 2015;5(6):392–6.
8. Mponela MJ, Oleribe OO, Abade A, Kwesigabo G. Post exposure prophylaxis following occupational exposure to HIV: a survey of health care workers in Mbeya. *Pan Afr Med J*. 2009;21. doi:10.11604/pamj.2015.21.32.4996.
9. Vardhini H, Selvaraj N, Meenakshi R. Assessment on knowledge and practice of postexposure prophylaxis of human immuno-deficiency virus among staff nurses and paramedical workers at a tertiary care hospital in South India. *J Educ Health Promot*. 2020;9:279. doi:10.4103/jehp.jehp_234_20.
10. Sardesai RV, Gaurkar SP, Sardesai VR, Sardesai VV. Awareness of needle-stick injuries among health-care workers in a tertiary health-care center. *Indian J Sex Transm Dis AIDS*. 2018;39(2):107–10.

11. Kapoor V, Gambhir RS, Singh S, Gill S, Singh A. Knowledge, awareness and practice regarding needle stick injuries in dental profession in India: A systematic review. *Niger Med J*. 2013;54(6):365–70.
12. Batra V, Goswami A, Dadhich S, Kothari D, Bhargava N. Hepatitis B immunization in healthcare workers. *Ann Gastroenterol*. 2015;28(2):276–80.
13. Byrd KK, Lu PJ, Murphy TV. Hepatitis B vaccination coverage among health-care personnel in the United States. *Public Health Rep*. 2013;128(6):498–509.

Author biography

Sonali Kar, Professor

Snigdha Singh, Senior Resident https://orcid.org/0000-0002-7432-4302

Pragyan Parimita, Post Graduate Trainee

Alpana Mishra, Associate Professor

Prem Sagar Panda, Assistant Professor

Cite this article: Kar S, Singh S, Parimita P, Mishra A, Panda PS. Awareness regarding prevention and management of needle stick injury among the health care providers in a tertiary care Hospital, Bhubaneswar, Odisha- A qualitative data exploration. *Indian J Microbiol Res* 2022;9(2):135-139.