



A Study To Assess The Level Of Knowledge On Management And Prevention Of Needle Stick Injury Among II year . B.Sc.Nursing Students At Selected College In Coimbatore

¹R. Jaya, ²Dr. Esther Rakel

¹ Nursing tutor, Ganga College of nursing affiliated to The Tamil Nadu Dr. M.G.R. Medical university, Chennai, Tamil Nadu, India

² Dean cum principal, Ganga College of nursing/Health sciences affiliated to The Tamil Nadu Dr. M.G.R. Medical university, Chennai, Tamil Nadu, India

Email – ¹ gayuvasanth146@gmail.com ² estherjohn95@gmail.com

Abstract: *Aim and objectives:* To assess the knowledge on management and prevention of needle stick injury among selected II Year BSc nursing students.

Methodology: Descriptive Research Design was adopted in order to assess the knowledge regarding specific procedure and safe techniques.

The dependent variable was individual knowledge of preventive methods, Independent valuable was management and prevention of needle stick injury.

The study was conducted for selected II Year B.Sc nursing students at Ganga college of nursing in Coimbatore. The sample size consisted of 60 students (who fulfilled the inclusion and exclusion criteria).

II year B.Sc.Nursing students were included in the study. All other Nursing batch students are excluded from the study, selected by a convenient sampling technique.

Result : This study is aimed to assess the level of knowledge on management of needle stick injury among selected II year, B.Sc nursing students and also to enhance knowledge on the methods of procedures, techniques, disposal uses of PPE by teaching various safe procedure and methods. Among selected 60 BSc nursing II year students 30% of students were having moderate knowledge (51-74%), 20 % of students were having inadequate knowledge ($\leq 50\%$), 10% of students were having adequate knowledge regarding management and prevention of needle stick injury. **Conclusion:** The study was aimed to enhance their knowledge on management and prevention of needle stick injury, and also make them to gain knowledge about procedures, techniques, method of needle disposal, color coding of Bio medical waste disposal, immediate management, Do's and Dont's, importance of personal productive equipment, This study has important implications, to prevent infectious disease, and to enhance the selected II Year B.Sc nursing students knowledge in management and prevention by using various techniques and procedure and handling of needle and equipment's to prevent the needle stick injury.

Key Words: Prevention and management of needle injury, procedure, technique, methods of disposal.

1.INTRODUCTION:

Needle stick injury is defined as any percutaneous injury, penetration of skin resulting from a needle or other sharp object, which has been in contact with blood, tissue, or other body fluids prior to the exposure . (1)

Needle stick injury among healthcare workers is still a global concern and poses a significant risk of occupational transmission of 20 blood borne pathogens such as human immunodeficiency virus (HIV) and hepatitis B virus (HBV) and C virus (HCV). However, today the major concern after a needle stick injury is not HIV but hepatitis B or hepatitis C . All these three viruses can be acquired by a percutaneous needle stick or splashing of blood on the mucosal surfaces of the body. While HIV primarily affects the immune system, both hepatitis B and C have a predilection for the liver. Tetanus should always be considered when a needle stick injury has occurred, and the patient's vaccination history must be obtained . (11)



Guidelines have been established to help healthcare institutions manage needle stick injuries and when to initiate post-exposure HIV prophylaxis. The Centers for Disease Control and Prevention (CDC) has developed a model which helps healthcare professionals know when to start anti-retro viral therapy.(12)

Despite the high number of needle sticks that occur in healthcare settings, the majority of healthcare workers do not develop any infection. Even if the skin is punctured or there is a spill in the mucous membranes, the majority of individuals do not acquire any organisms.(6)

Needle less connectors (NCs) were introduced in the 1990s to reduce the risk of health care worker needle stick injuries.[15] The second is to start using safe working practices such as the hands-free technique.[16] The third line of prevention is increased personal protective equipment such as the use of two pairs of gloves.[17] In addition to these preventive approaches, implementation measures are necessary because the measures are not universally taken up. To achieve better implementation, legislation, education and training are necessary among all health care workers at risk.[18]

1.1 STATEMENT OF THE PROBLEM

“A descriptive study to assess the level of knowledge on management and prevention of needle stick injury among Nursing students at selected college in Coimbatore”.

1.2 OBJECTIVES OF THE STUDY

- ❖ To assess the level of knowledge on management and prevention of needle stick injury among selected II, year B.Sc.Nursing students.
- ❖ To associate the selected demographic variables with mean different level of knowledge scores regarding management and prevention of Needle Stick Injury among, II. year B.Sc.Nursing students at selected college in Coimbatore.

2.MATERIALS AND METHODS:

Descriptive Research design was adopted in order to assess the knowledge regarding management and prevention of needle stick injury among selected II, year B.Sc.Nursing students .

The sample size consisted of 60 II year B.Sc.Nursing students present studying at Ganga college of nursing, in Coimbatore.

(who fulfil the inclusion and exclusion criteria) selected by convenient sampling technique.

The tool consists of two parts

A) Data collection tool

B) Awareness Promotion

A)The data collection tool was self- structured Questionnaire,consists of knowledge assisted questions,about safe needle handling methods and purpose of using PPE .

Scoring key : About knowledge on bio-medical waste disposable methods.

Correct answer	1
Wrong answer	0

Scoring interpretation :

Scores	Level of Knowledge
≤50%	Inadequate Knowledge
51-74%	Moderately adequate knowledge
75-100%	Adequate knowledge

B) Awareness Promotion by slide presentation / video showed 15 minutes

- Preventive methods of needle stick injury
- Causes of needle stick injury
- Avoid recapping
- Safe techniques
- Management of needle stick injury



2.1. Ethical Consideration: □

The formal administrative approval was obtained from the Ganga College of Nursing Ethical committee and approval from dean cum principal of Ganga college of nursing The researcher has followed the fundamental ethical principle like the right to freedom from the harm and discomfort, respect to human dignity. The researcher gave freedom to all the participants to decide voluntarily whether to participate in the study or withdraw from the study and rights to ask questions at any-time during the study period. The investigator has maintained the study participant privacy throughout the study.

2.2. Statistical Analysis

Demographic variables were described by using descriptive statistics one way ANOVA / Unpaired t test was used to analyse the knowledge regarding safe handling techniques on needle and PPE.

3. Result :

This study is aimed to assess the level of knowledge on management of needle stick injury among selected II Year BSc nursing students and also to teach the methods of procedures, techniques, disposal uses of PPE. Among selected 60 BSc nursing II year students 30% of students were having moderate knowledge (51-74%), 20 % of students were having inadequate knowledge ($\leq 50\%$), 10% of students were having adequate knowledge regarding management and prevention of needle stick injury.

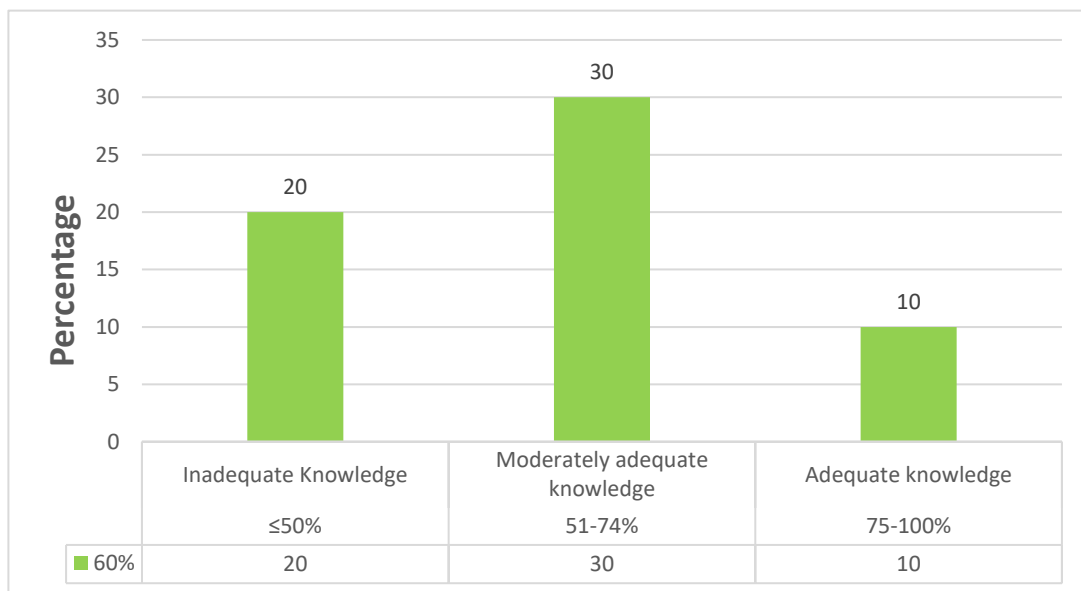


Figure: 1 Percentage distribution of knowledge on management and prevention of needle stick injury

4. DISCUSSION :

The study finding showed that an intervention administered for the same day states that there will be effective difference on their knowledge regarding management and prevention of needle stick injury.

5. LIMITATIONS :

1. Difficult to get sample at same day/ time.

6. CONCLUSION:

The study was aimed to enhance their knowledge on management and prevention of needle stick injury, and also make them to gain knowledge about procedures, techniques, method of needle disposal, color coding of Bio medical waste disposal, immediate management, Do's and Dont's, importance of personal productive equipment, This study has important implications, to prevent infectious disease, and to enhance the selected nursing students knowledge in management and prevention by using various techniques and equipment's to prevent the needle stick injury.



AUTHOR CONTRIBUTION STATEMENT

Conceived and designed this study let the over all research proceed and provided critical revision to the manuscript, responsible for methodology and writing of the result and discussion, selection of the study conducted literature review, contributed to the survey design, Dean Cum Principal Dr. Esther Rakel assisted in final editing and ensured that relevant ethical consideration were addressed through out this study.

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REFERENCES :

1. Debapriya das, choudhry, et al. The study of prevalence of needle stick and sharp injuries among healthcare workers in tertiary care hospital, navi mumbai. *IP International Journal of Medical Microbiology and tropical disease*. volume 7,227-231(2021)
2. Leigh JP, Markis CA, Iosif A-M, Romano PS. California's nurse-to-patient ratio law and occupational injury. *Int Arch Occup Environ Health*. 2015;88:477-84.
3. Shyamkumar Sriram, *Journal of Family Medicine and Primary Care* 8(2):599,DOI:10.4103/jfmprc.jfmprc.454.18LicenseCC BY-NC-SA 4.0
4. Ashat M, Bhatia V, Puri S, Thakare M, Koushal V. Needle stick injury and HIV risk among healthcare workers in North India. *Indian J Med Sci*. 2011;65:371-8.
5. Goel V, Kumar D, Lingaiah R, Singh S. Occurrence of needle stick and injuries among healthcare workers of a tertiary care teaching hospital in North India. *J Lab Physicians*. 2017;9:20-5.
6. King KC, Strony R. Needle stick. [Updated 2019 Dec 5]. In: Stat Pearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2019 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK493147>
7. Triassi M, Pennino F. Infectious risk for healthcare workers: evaluation and prevention. *Ann Ig*. 2018 Jul-Aug;30(4 Suppl 1):48-51.
8. *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*e-ISSN: 2279-0853, p-ISSN: 2279-0861. Volume 21, Issue 11 Ser.9 (November. 2022), PP 01-11 www.iosrjournals.org
9. *International Journal of Nursing and Health Science* 024; 6(2): 43-50
10. Alhazmi RA, Parker RD, Wen S. Needlestick Injuries Among Emergency Medical Services Providers in Urban and Rural Areas. *J Community Health*. 2018 Jun;43(3):518-523.
11. Stephenson J. Nurses should insist trusts obey sharp safety law. 2016 Feb 24-Mar 1 *Nurs Times*. 112(8):2-3. [PubMed]
12. Adams S, Stojkovic SG, Leveson SH. Needlestick injuries during surgical procedures: a multidisciplinary online study. *Occup Med (Lond)*. 2010 Mar;60(2):139-44. [PubMed]
13. Stringer, Bernadette; Haines, A. Ted; Goldsmith, Charles H.; Berguer, Ramon; Blythe, Jennifer (2009). "Is use of the hands-free technique during surgery, a safe work practice, associated with safety climate?". *American Journal of Infection Control*. 37 (9): 766-72. doi:10.1016/j.ajic.2009.02.014. PMID 19647344.
14. Jump up to:^{a b c d} Mischke, Christina; Verbeek, Jos H.; Saarto, Annika; Lavoie, Marie-Claude; Pahwa, Manisha; Ijaz, Sharea (1 January 2014). "Gloves, extra gloves or special types of gloves for preventing percutaneous exposure injuries in healthcare personnel". *The Cochrane Database of Systematic Reviews*. 2014 (3): CD009573. doi:10.1002/14651858.CD009573.pub2. ISSN 1469-493X. PMC 10766138. PMID 24610769.
15. Hasak, Jessica M.; Novak, Christine B.; Patterson, Jennifer Megan M.; Mackinnon, Susan E. (1 February 2018). "Prevalence of Needlestick Injuries, Attitude Changes, and Prevention Practices Over 12 Years in an Urban Academic Hospital Surgery Department". *Annals of Surgery*. 267 (2): 291-96. doi:10.1097/sla.0000000000002178. ISSN 0003-4932. PMID 28221166. S2CID 10024783.
16. Hospital Infection Control Committee AIIMS, Raipur 2019 All India Institute of Medical Sciences, Raipur HOSPITAL INFECTION CONTROL MANUAL HOSPITAL INFECTION CONTROL MANUAL 2019 Website: www.aiimsraipur.edu.in E-mail: hicc@aiimsraipur.edu.in