Prevalence of needlestick injury and knowledge regarding post exposure prophylaxis among staff nurses

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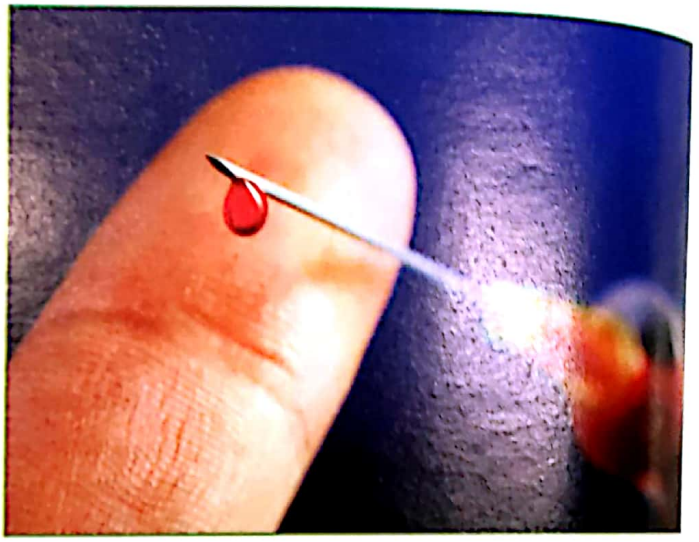
A needlestick injury (NSI) is defined as an accidental skin penetrating stab wound from a hollow-bore needle (or any sharp) containing another person's blood or body fluid. The routine use of sharp instruments in hospitals, the presence of blood and saliva, and the diverse bacterial flora in the oral cavity contribute to the hazardous nature of the hospital for blood-borne infections.

Preventing NSIs is a challenge faced in virtually every medical work place. In a hospital environment, the burden of NSIs can be reduced when the health care professionals abide by the current and universally accepted standard precautionary measures against NSIs. Even though the acute physiological effects of a needlestick injury are generally negligible, these injuries can lead to transmission of blood-borne diseases placing those exposed at increased risk of contracting infectious diseases, such as hepatitis B (HBV), hepatitis C (HCV), and the human immunodeficiency virus (HIV).

Needlestick injuries are more common during night shifts and for less experienced people; fatigue, high workload, shift work, high pressure, or low perception of risk can all increase the chances of a needlestick injury. Generally, needlestick injuries cause only minor visible trauma or bleeding; however, even in the absence of bleeding the risk of viral infection remains.

Approximately half of all needlestick injuries affecting health care workers are not reported, citing the long reporting process and its interference with work as their reason for not reporting an incident. Low risk perception can be caused by poor knowledge about risk, or an incorrect estimate of a particular patient's risk.



Objectives of the study

1. To assess the prevalence of needlestick injury among staff nurses and student nurses working in a selected hospital.
2. To assess the knowledge regarding post exposure prophylaxis (PEP) among staff nurses and student nurses working in a selected hospital.
3. To compare the prevalence of needlestick injury with selected demographic variables.
4. To compare the knowledge regarding post exposure prophylaxis (PEP) with selected demographic variables.

Research methodology

Research approach: The research approach used in this study was descriptive exploratory approach.

Research design: The design chosen for the study was the survey method.

Population: The population comprised of staff nurses and nursing students in selected hospital of Mumbai.

Sample: The sample consisted of staff nurses and nursing students of a selected department in selected hospital in Mumbai.

Sample size: Sample size comprised of 40 staff nurses and 40 nursing students from a selected hospital in Mumbai

Inclusion criterion: • Partici-

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pants who were present on the day of data collection. • Participants who were willing to participate in the study.

Sampling technique: The non-probability convenience sampling was used to select the samples.

Tools and technique

Tool: A structured questionnaire was used to collect the demographic data, prevalence of needle stick injury and knowledge regarding post exposure prophylaxis (PEP).

Technique: The self-reporting technique was used in this study.

Data analysis: Frequency and percentage distribution were used to describe demographic variable, prevalence of needle stick injury and knowledge related to post exposure prophylaxis. 'T' test was used to compare knowledge with the demographic variables.

Significant findings

Demographic data

This section deals with distribution of samples with regards to demographic data.

Total 80 samples were selected. Out of which 40 samples were staff nurses from various departments with varying working experience from 0 – 10 years. Student nurses comprised of 40 samples of which 20 were from 3rd Year GNM and 20 were from 4th B.Sc. Nursing. The samples were of different age groups starting from 18 years of age. Majority of the samples were GNM nurses.

50% of the samples had nil experience as they were nursing students and amongst the remaining samples, a majority had 0-3 years of experience. A majority of the samples (27%) who were a part of the study were working in the medical-surgical wards, whereas an equal number of samples (9%) were working in ICUs and OTs. 37% of the total samples work in wards more than 1:10

Prevalence of needlestick injury

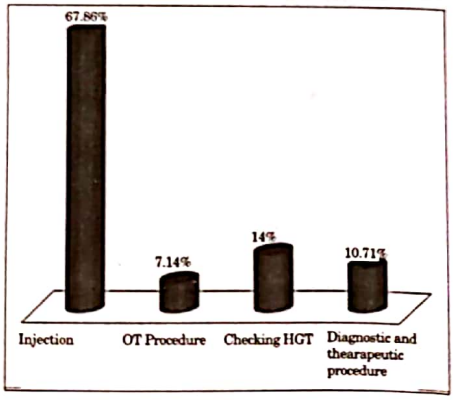
This section deals with the distribution of samples with regards to prevalence of needlestick injury.

In this study, 27.5% of staff nurses had experienced needlestick injury and 72.5% had never experienced it, whereas 42.5% of students had experienced needle stick injury. Out of the total samples, 79% had been exposed to needlestick injury during the morning shift, 21% in the evening shift. Also, it has been found that maximum pricks had been encountered by samples in age group, 21 – 30 years (72%), while those belonging from 18 – 20 years had the least encounter with needle stick injury (3%).

In the study, maximum no. of samples i.e. 39.29% attributed needlestick injury to use of needle in IV Cannulation, whereas 14% attributed it to recapping of the needle. A majority of samples (67.9%) experienced NSI during injection procedure, and the next major cause (14%) of NSI was checking HGT.

Procedures	Frequency	Percentage
Injection	19	67.86%
OT Procedure	2	7.14%
Checking HGT	4	14%
Diagnostic and therapeutic procedure	3	10.71%

Cause of needlestick injury



Knowledge regarding post exposure prophylaxis

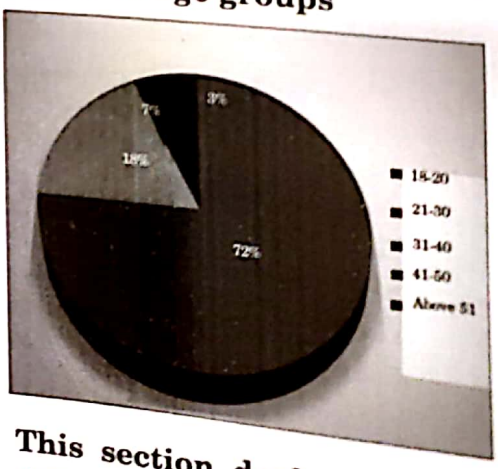
This section deals with the knowledge of staff nurses and student nurses regarding post exposure prophylaxis. Scores above 75% were graded excellent, 51-75% as very good, 26-50% as average and 255 and below as poor.

In this study, 60% staff nurses and 65% student nurses had an excellent knowledge regarding PEP, 27.50% staff nurses and 25% student nurses had a very good knowledge, 5% staff nurses had an average knowledge and 7.50% staff nurses and 10% student nurses had poor knowledge regarding PEP.

This section deals with the comparison of prevalence of needlestick injury with selected demographic variable

In the comparative study, 27.5% of staff nurses had been pricked and 72.5% had not been pricked, whereas 42.5% of students had been pricked and 57.5% has not been pricked. 79% were exposed to NSI in the morning shift, and 21% in the evening shift. In this study, maximum pricks had been encountered by samples in age group of 21 – 30 years (72%), and minimum pricks were experienced by age group of 18 – 20 years (3%).

Comparison of subject in relation to prevalence of needlestick injury among different age groups



This section deals with the comparison of knowledge related to PEP with selected

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Prevalence of needlestick injury

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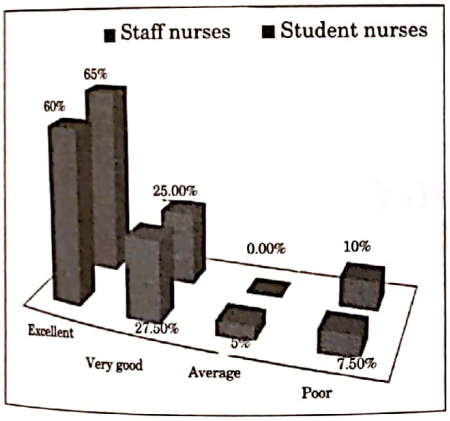
demographic variables

In the study, 60% staff nurses and 65% student nurses had an excellent knowledge regarding PEP, 27.50% staff nurses and 25% student nurses had a very good knowledge, 5% staff nurses had an average knowledge and 7.50% staff nurses and 10% student nurses had poor knowledge regarding PEP.

Knowledge	Percentage	
	Staff nurse	Student nurse
Excellent	60%	65%
Very good	27.50%	25.00%
Average	5%	0.00%
Poor	7.50%	10%

Comparative study related to knowledge among staff nurses and student nurses



For comparison between the mean scores of knowledge regarding PEP among the staff nurses and student nurses, 't' was used.

Particulars	M	SD	N	df	't'		Significance
Knowledge among the staff nurses	7.50	1.74	40	78	Table value	Calculated value	Not significant at the level of 0.05
Knowledge among the student nurses	7.23	1.79	40		0.6	0.4	

The table depicts the comparison of the mean scores of knowledge of PEP between the staff nurses and student nurses. As the table value (0.6) is greater than the calculated value of (0.4), it can be concluded that there is no significance difference between the mean score of knowledge related to PEP among student nurses and staff nurses.

Recommendations

- Effect of planned teaching on the knowledge level regarding PEP.
- Effect of information booklet on the knowledge related to PEP.
- Effect of needlestick injury on the psychological aspect of the samples
- Comparative study related to prevalence of needlestick injury in different hospitals across Mumbai.

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