# ORIGINAL ARTICLE Knowledge of Nurses Regarding Prevention From Needle Stick Injuries in Tertiary Care Hopital Lahore Pakistan

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## ABSTRACT:

Nurses got exposed to various blood borne infections due to injury from different types of sharp instruments like needles, lancets, scissors etc. Such injuries ultimately became the reasons of blood borne diseases. Objectives: To analyze the knowledge and attitude of nurses about prevention from needle stick injury and the magnitude of such incidents in Tertiary Care Hospitals of Lahore. Study Design: Cross-sectional study. Methodology: Study setting was tertiary care hospitals of Lahore-Pakistan after ethical review committee's (ERC) approval. Data was collected from nurses by using self-administered questionnaire from different department of tertiary care hospitals, Lahore. Convenient sampling technique was used, and sample size was 93. Statistical analysis: SPSS 21 was utilized for the data analysis. The tests of frequencies, percentages and graphs were applied. Results: Needle stick injuries association was measured with working experience among nurses. There was statistically significant difference found between the NSIs among (59%) nurses, who were having more working experience (22-24) about handling of needle during any procedure as compared to the nurses who lack in experience. The study results showed that majority of nurses have enough knowledge concerning to NSIs. Conclusion: We concluded that nurses have knowledge regarding the needle stick injury due to the training classes, however, ignorance of the protocols becomes the reason of such incidents even now. It is the need of time to implement appropriate strategies for precaution and intervention through hospital administration to avoid the needle stick injuries. Key Words: Needle Stick Injury, Re-capping of needles, Attitude and Knowledge.

## **INTRODUCTION:**

Nurses got exposed to various blood borne infections due to injury from different types of sharp instruments like needles, lancets, scissors etc. Such injuries ultimately became the reasons of Hepatitis C, Hepatitis B and HIV. In today's life nurse's occupational safety is a matter of special attention. While doing their routine jobs health care providers are more prone to get different types of infectious diseases along with exposure to various types of hazards such as chemical, radiation and physical related to their job and environment. Needle stick injury is the parenteral introduction into the body of a health care worker during the performing duties or using other potentially infectious material. One previous showed that one million annually in Europe and 5.6 million such injuries annually in US occur.1

Nurses are responsible for the medication which becomes the reason of greater probability of the sharp injuries. However, guidelines and protocols are there to avoid such injuries. Similarly, post exposure prophylaxis may minimize the infection. In the same manner, careful practices have key importance to avoid the sharp injuries. That's why they need to learn the strategies to protect themselves from occupational exposure especially needle stick injuries which is most common among health care providers. Different health-based model has been utilized to enhance the awareness of standard practices to avoid the sharp injuries and understanding of the life threating outcomes of sharp injuries. Previously, studies demonstrated that nurses experience infection as well as blood transmitted diseases and the prevalence of such injuries is 45% which is quite high.<sup>2,3</sup>

Previously, studies have emphasized the importance of KAP regarding needle stick injuries but still the prevalence of such injuries is guite high and becomes the reason higher mortality of the health care workers. The study noted that prevalence of sharp injuries in Assam is 21.1% even most of the health care workers were aware of the spread of diseases like HIV and Hepatitis C due to needle stitch injuries.<sup>4</sup> Similarly. the study was conducted to assess the knowledge and practice of protocols regarding needle stick injury (NSI) among nursing students in Sudan, which demonstrated that 23% of the nursing students suffered NSI and knowledge of prevention from sharp injuries among the nurses of hospitals in Yemen was 44%.<sup>5</sup> the study noted the frequent incidents of sharp injuries among the nurses of Turkey.<sup>6</sup> Likewise, prevalence of sharp injuries among the nurses of public hospitals of Lahore, Pakistan is 44% and among the private hospitals is 26.4% and majority of the incidents happened while disposing and recapping of needle.

Moreover, knowledge regarding the prevention measure from such injuries has key importance. The study investigated the awareness of prevention measures among the health care staff and reveal that 51% were aware of standard practices and 80.3% were still ignoring the standardized protocols.<sup>7</sup> Moreover, Ghurki Trust Teaching Hospital, Lahore, a crosssectional descriptive study was conducted on nurses highlighted the poor knowledge and higher incidence of NSIs among nurses.<sup>8</sup> In the light of above description and increasing incidence of needle pricks among health workers especially nurses, we planned the current project to analyze the knowledge and attitude of nurses about prevention from needle stick injury and the magnitude of such incidents in Tertiary Care Hospitals of Lahore.

### **OBJECTIVES:**

To analyze the knowledge and attitude of nurses about prevention from needle stick injury and the magnitude of such incidents in Tertiary Care Hospitals of Lahore.

**Methodology:** The cross-sectional study design was used, and study setting was tertiary care hospitals of Lahore, Pakistan after ethical review committee's (ERC) approval. Data was collected from nurses by using selfadministered questionnaire from different department of tertiary care hospitals, Lahore. Convenient sampling technique was used, and sample size was 93. The researcher has to assess their practices from nurses on morning and evening shifts.

**Statistical Analysis:** SPSS 21 was utilized for the data analysis. The tests of frequencies, percentages and graphs were applied. Chi-square applied with p-value < 0.05 was taken significant.

## **RESULTS**:

Distribution of nurses among different tertiary hospitals with varying work experience duration was presented as frequency and percentage in table-1.

Table-1: Distribution of Nurses Among Tertiary Hospitals (n=93)

Parameters	Hospitals	Frequency	Percentage (%)
Distribution of Nurses According to Hospital	The Children Hospital	31	33.33
	Gulab Devi Hospital	31	33.33
	Sheikh zayd Hospital	31	33.33
Working Experience (Months)	12-15	13	14
	16- 18	16	17
	19-21	9	10
	22-24	55	59

Nurses (70%) have received education regarding needle stick injury. So, 95% of nurses have received education through diploma during educational courses, 48% received education through in-service program. Whereas, there were 8% nurses who had learned from attending seminar and conferences as depicted by table-2.

Table-2: Nurses Education Regarding Needle Stick Injuries

Parameters	Criteria	Yes	No
Education	Education received about prevention from needle stick injuries.	65(70%)	28(30%)
About NSI	Education received through diploma.	62(95%)	3(5%)
	Education received through in-service programs.	31(48%)	34(52%)
	Education received through Work	5(8%)	60(92%)

	shop/Seminar/Conference.		
Reported Incidence	Were incidence reported to the administrative authority.	6 (7.50%)	74 (92.50%)
Vaccination Status	Were nurses vaccinated against Hepatitis B.	76(82%)	17(18%)

Almost 13 (14%) nurses did not experience any NSI whereas, 49 (53%) experienced 1-2 NSIs during last year, 25 (26%) experienced 3-4 NSIs and 06 (7%) experienced more than 5 NSIs during the last year as per estimation as shown in Figure-1.



Figure-1: Distribution of Nurses According to NSI Experience (n=93) knowledge regarding NSIs was evaluated that showed 10 nurses had poor knowledge, 64 nurses had good knowledge while 19 nurses had excellent knowledge as shown by figure-2.



Figure-2: Nurses Knowledge Level about NSIs (n=93) There was significant association between the education about prevention of needle stick injury and the occurrence of Needle Stick Injury in current task as shown by table-3.

Table-3: Correlation Between Education & NSIs (n	∩=93
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Education about prevention from needle	Needle Stick I	njury		p-value
stick injuries	No	Yes	Total	
Yes	57(87.7%)	8(12.3%)	65	.0.001*
No	7(25%)	21(75%)	28	<0.001

\*Statistically significant

There is positive association between working experience and needle stick injuries among nurses as shown by table-4. With experience among nurses the incidence of needle pricks showed a downward trend.

Table-4: Trend of NSIs According to Nursing Experience

Working	Needle stick i	injury		p-value
Experience	No	Yes	Total	
12-15 Months	3(23.1%)	10(76.9%)	13	
16-18 Months	0(.0%)	16(100.0%)	16	
19-21 Months	8(88.9%)	1(11.1%)	9	0.000*
22-24 Months	46(83.6%)	9(16.4%)	55	0.023*
Total	13(14.0%)	80(86.0%)	93	
*Ctatiatiaally ai	anificant			

\*Statistically significant

## DISCUSSION

Current study findings showed that most of the nurses had received education about prevention from needle stick injuries either in basic diploma or through inservice program in Workshops/Seminars or conferences. Another study conducted by Varun also showed that 29% respondents have received their knowledge regarding NSIs through training program.9 In contrast one study showed the source of getting information regarding NSIs was the curriculum of nurses.<sup>10</sup> Other important source of information mentioned by the nurses was training programs. One study found that majority (79.5%) of the health care workers reported a NSIs one or two time in their last working year most of them were nurses.<sup>11</sup> Similarly, it is reported that 27.5% respondent had NSIs in the past 12 months, resulting in 0.27 NSIs per dental professional per year.<sup>12</sup> The prevalence of NSIs in the present study was as when compared to other studies. Most of the NSIs occur during recapping of the needle (41.81%).<sup>12</sup>

Many nurses had good knowledge in relation to prevention from needle stick injuries, while few nurses demonstrated poor knowledge. Our study findings are in line with previous study of Varsha<sup>12</sup> which revealed that 88% of the respondents considered to be known about prevention from NSIs. The analysis of nurses in the present study indicates that they have relatively good level of knowledge about the diseases likely to be transmitted through NSIs. This evaluation indicates that most of the nurses understood that prevention from needle stick injuries is very important for healthy life and it can also prevent from blood borne diseases. However, these findings were in contrast Alam (2010) study which reported that only 21% and 30% of HCWs including nurses and para medical staff were unaware of the prevention from NSIs, respectively.

The knowledge about the transmission of important diseases through NSIs is very important because if someone gets a needle prick injury then the chances of getting Hepatitis B, C and HIV become high. Fortunately, 100% of the nurses were aware of this fact. There is statistically considerable difference found between the incidences of NSIs among nurses who have knowledge as compared to those who do not have Knowledge about needle stick injury it. the percutaneous injuries reduces the NSI's from 13 to 5 cases. A study is conducted in Bangladesh showed that the overall needle stick injury has decreased significantly after providing training to healthcare workers from 47.5% to 82.7%.13 Therefore, it is suggested that seminars/ workshops must be conducted time to time for Nurses, so that nurses can play a better role professionally and personally.

Our study showed that there is a significant difference between the incidences of NSIs among nurses who have more working experience about handling of needle during as compared to nurses who do not have. A study that was conducted in India shows that for up to 4 years,58% nursing personnel had NSIs for 3-times and some had even more than 10 times.14 With the increasing year of working experience, there is an overall improvement in knowledge level, but on the

same side there is more reporting of needle pricking accidents.

Limitations: Our study had limitations like financial constraints, lack of resources and small sample size.

Conclusion: We concluded that nurses had adequate knowledge regarding the needle stick injury due to the training classes, however, ignorance of the protocols becomes the reason of such incidents even now. It is the need of an hour to implement appropriate strategies for precaution and intervention through hospital administration to avoid the needle stick injuries and thus reducing its burden on health community.

Authors' Contribution: Zarnigar: Conception and design of work

Rehana Elahi: Collecting and analyzing the data

Tahira sagir: Drafting the manuscript

Tabassum Zia: Collecting and analyzing the data

Waqas Latif: Drafting the manuscript

Talha Laique: Drafting and revising the manuscript for intellectual content.

Acknowledgement: All authors are thankful to Allah SubhanaoTaála and colleagues who made this study possible. Conflict of Interest: None to declare

Financial Disclosure: None

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