

# A Cross Sectional Study on Incidence of *Needle Prick Injury* among Health Care Providers in Tertiary Care Hospital

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**Abstract:** *Introduction:* Health care providers are at increased risk of infection with blood-borne pathogens because of their occupational exposure. *Objectives:* The objective of the following study is to assess the occurrence of needle prick injury (NPI) among Health care providers. *Materials and Methods:* A prospective observational study, cross-sectional in design. *Results:* 280 (56.0%) reported NSI in the preceding 2 years in the health care facility. Ward boys 70(28.57%) Nurses and nursing students 120(46.42%), Lab technicians 80(28.57%). Nurses and nursing students had the highest percentage. Only 220 (44 %) HCPs were wearing gloves at the time of NPI. Among HCP 140 Junior residents (63.63%), 80 Assistant professors (36%). Most common cause for injury was not taking proper care during recapping of needles after use. Only (40%) 200 HCPs took action immediately after an NPI. *Conclusion:* Occurrence of NPI among the HCPs in Andhra Pradesh was high due to lack of availability of Information, education, counseling and communication materials. To obviate this, all the precautionary measures should be displayed prominently at the work place.

**Keywords:** Needle prick injury, Blood borne pathogens, Health care workers

## 1. Introduction

Hepatitis B, Hepatitis C and HIV/AIDS in health-care workers were due to needle prick injuries, Other infections transmitted through needle pricks include syphilis, malaria, herpes etc. Needle prick injuries are neglected by many health care workers and it is the major route of transmission of serious blood borne diseases. Most exposures among HCWs are caused by percutaneous injuries with sharp objects like needles surgical blades contaminated with blood or body fluids and broken ampoules. According to World Health Organization, 35.7 million health care workers in the world are exposed to the risk of Needle prick injuries, 2 million experience percutaneous exposures to infectious diseases every year<sup>1,2</sup>. 85% -90% of the occupational exposures occur in developing countries Where there is paucity of standard reporting protocol and 40-75% goes unreported<sup>3</sup>. Infections from each of these pathogens were potentially life threatening and preventable. The emotional impact of needle stick injury could be severe and long lasting, even though serious infection was not transmitted. Not knowing infection status of the patient among those injured can increase the stress. More than 80% of needle stick injuries can be prevented through the use of safer devices and techniques . Personnel who regularly practice invasive procedures such as blood sample collection and starting intravenous lines are particularly at risk to percutaneous injurie<sup>4</sup> Needlestick injuries present the single greatest risk to medical personnel<sup>5</sup>.

## 2. Objectives

The objective of the following study is to assess the occurrence of needle prick injury (NPI) among Health care providers. various factors are responsible for injury, the circumstances under which they occur and exposed are responses of the health care providers after NPI.

## 3. Materials and Methods

A prospective observational study, cross-sectional in design was conducted in inpatient and Out-patient Departments of Obstetrics and Gynaecology, Surgery, Medicine and and casualty of Sri Venkateswara Medical College and Hospital, Tirupati from Jan 2017 to Dec 2018 among all the 500 health care providers using a pre-designed pre-tested self-administered questionnaire including House surgeons, Post graduates, Asst professors , Nursing staff, Ward boys and lab technicians.

## 4. Results

280 (56.0%) reported NSI in the preceding 2 years in the health care facility. Ward boys 70(28.57%) Nurses and nursing students 120(46.42%), Lab technicians 80(28.57%). Nurses and nursing students had the highest percentage . Only 220 (44 %) HCPs were wearing gloves at the time of NPI. Among HCP 140 Junior residents (63.63%), 80 Assistant professors (36%). Most common cause for injury was not taking proper care during recapping of needles after use. Only (40%) 200 HCPs took action immediately after an NPI.

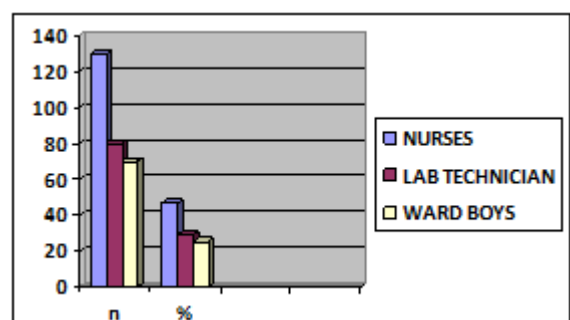
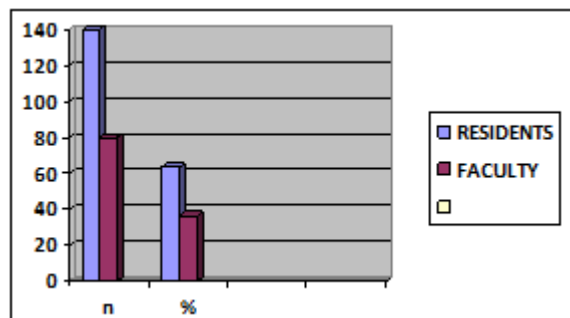
DISCUSSION: In the present study area 25% of class IV employees said they have no idea about needle prick importance. 96% of medical faculty, 63% of P.G's and interns, 46.42% of nurses, 28.57% of lab technicians said needle prick transmits HIV and Hepatitis –B and C. 90% of total said tetanus, 50% of nurses and lab technicians said tuberculosis.

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Total				Faculty	Interns and PGS
Needle Prick Exposed Persons (Doctors) 220				80	140
Persons Exposed	Nurses	Lab Technicians	Wardboys		
280	130	80	70		
	46.42%	28.57%	25%		
				36%	63.63%



50%Technicians has blood test after needle prick, whereas rest haven't and 100% of class IV employees have not undergone any blood test. In the study conducted, has revealed that after getting stuck by a contaminated needle 98% of the nurses cleaned the wound with a spirit or betadine swab, 90% washed the area with soap and water . Needle stick injuries occurred during all work shifts and all the nurses self-medicated their wounds while a small minority consulted the physicians.<sup>6</sup> In a study conducted by Rahul sharma et.al study while 60.9% washed the site of injury with water and soap, a matter of concern is that 14.8% did nothing following their most recent NSI Very few of the NSIs get reported to the health care system.<sup>7</sup> knowledge regarding the potential transmission of Hepatitis B, C and HIV was high among the participants.<sup>8</sup> In a study conducted by Alison E. Heald et. al out Of 221 respondents, 57 (26%) reported never having had a needle stick, while 164 (74%) reported at least one needle stick injury with a suture or hollow-bore needle.<sup>9</sup> The predominance of injuries among nurses is a common feature in studies around the world.<sup>10-14</sup>

### 5. Conclusion

Bio medical waste system should worked strictly in all healthcare systems. There should be hospital training programs for awareness about safety precautions, complications and post- prick sequele especially in healthcare workers working in injury occurring areas. Reporting of needle prick injury should be essential to the

concerned authorities to take further steps. Post injury prophylaxis should be compulsory in institution. Health care system counselling should be given to nursing staff, Lab personnel and OT staff and Interns, Pgs repeatedly and frequently for prophylactic measures to be taken while handling hospital waste or needles or sharp instruments. Baseline immunization of all involved in providing healthcare system should be mandatory.

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