



KNOWLEDGE REGARDING NEEDLE STICK INJURY AMONG HEALTH CARE PROVIDERS

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Abstract:

Objective: To determine the knowledge regarding needle stick injury (NSI) among nursing staff and technicians at Isra university Hospital.

Study setting: Isra university hospital, Hyderabad Sindh Pakistan

Study design: Cross-sectional survey

Study duration: 10 months from February 2015 to December 2015

Materials and Method: All the health care providers including nursing staff, dispensers and laboratory technicians of Isra University Hospital, Hyderabad either of gender were included. A structured questionnaire in English language was designed to assess the knowledge regarding needle stick injury. All the data was entered in the proforma.

Results: Total 60 health care providers were studied and most common age groups were 31-40 years and 41-50 years. According to health care providers, nurses were most common 46.70%, followed by dispensers 25.0%, laboratory technicians were 18.30% and doctors were only 10.0%. 37.0% had history of needle-stick injuries. Most of the cases 90.0% were aware regarding needle-stick injuries, assisted in disposal of needles was among 67.0%, 58.0% knew about first aid after NSI, 48.0% knew about universal precautions, 63.0% Get investigated after NSI, 48.0% Use gloves and 78.0% had sufficient number of safety tools.

Conclusion: It was concluded that the almost all individuals knew regarding needle-stick injuries, but ignorance was very common and use of preventive protocols were inadequate.

Key words: Needle-stick injuries, knowledge, healthcare providers

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INTRODUCTION:

Needle Stick Injuries (NSIs) in health care settings are a worldwide issue. Percutaneous damages, due to needle sticks in addition to other sharp tools are a significant concern for all Healthcare workforces and impose a substantial risk of work-related transmission of blood borne pathogens [1,2] The prevalence of NSI is substantially higher compared to current approximations, due to overall misreporting and therefore low injury rates must not be taken as a negligible problem.¹ Injuries due to needle stick are the 2nd most frequently recounted and adverse event within the National Health Services UK (17%), and represent a major risk for the transmissions of prion infection, viral infections, HIV and further diseases. A substantial number of people are at likely risk for transmission of blood-borne infection to blood bank workers, laboratory technicians, doctors, nurses, workforce in transplant and kidney dialysis units, and other healthcare employees [3,4]. Regardless of a substantial burden of HBV and HCV and further bloodborne infections, a small number of studies have explored injuries associated with needle stick in Pakistan [3,5]. Healthcare workforces who have work-related exposure to blood are at raised risk for getting blood-borne diseases. Work-related exposure to blood can take place due to percutaneous injury (sharp tool or needle stick injuries), muco-cutaneous injury or interaction with non-injured skin. Thus not only nurses and doctors and even hospital waste handlers, housekeeping personnel and laboratory technicians are at risk of harboring the bloodborne infections via needle-stick injury [6]. As stated by World Health Organization regional classification, Pakistan sits in Eastern Mediterranean Region D. Unluckily this area has the greatest rate of injuries due to needle stick than the whole world [7,8]. Most of the NSI take place during opening of vial or ampoule, recapping, disposal of syringes or procedure [9]. The survey discovered that awareness of healthcare workforces regarding the risk correlated with injuries associated to needle-stick and application of preventive measures was poor [10]. Introduction of safe working practices and safety devices is one of the major foundations to avoid such injuries [9]. Injuries associated to needle stick are highly prevalent among underdeveloped countries including Pakistan. Since it is a significant

occupational risk in the community associated to medical, and regardless of its serious outcomes, it can possibly remain ignored and most of them misreported. These Injuries associated to needle stick among healthcare workforces can be prevented through implementing the strict universal precaution approaches. Therefore this study has been carried out to determine the knowledge regarding needle stick injury among nursing staff and technicians at Isra university Hospital.

MATERIAL AND METHODS:

This cross-sectional survey was held on health care providers at Isra university hospital, Hyderabad Sind Pakistan. The duration of study was 6 months from august 2015 to January 2016. All the health care providers including nursing staff, dispensers and laboratory technicians of Isra University Hospital, Hyderabad either of gender were included in the study. Those unwilling to take part in the study and those who had less than one year work experience were excluded. A written well-versed consent was taken from every subject. Calculated sample size was 100. A structured questionnaire in English language was designed to assess the knowledge regarding needle stick injury. All the data was entered in the proforma. Data analysis was done with SPSS version 20.

RESULTS:

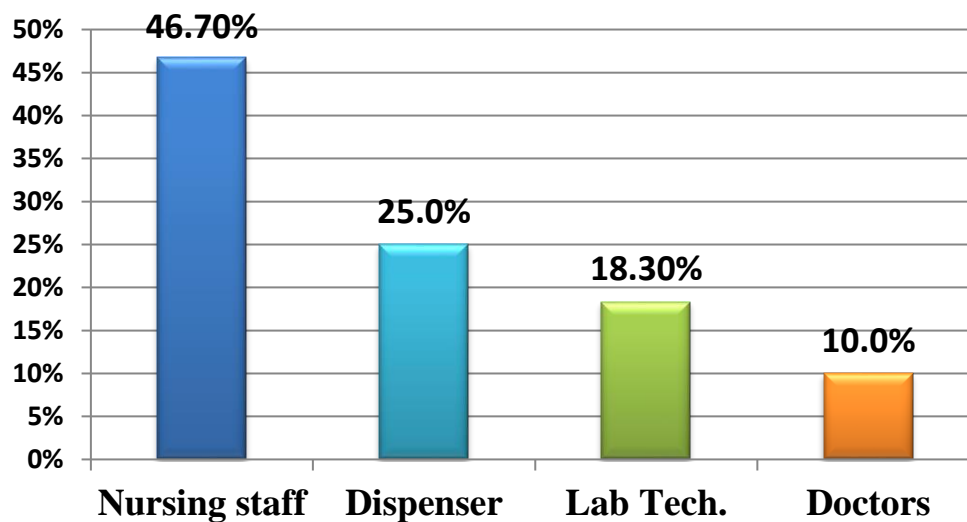
In this study most common age groups were 31-40 years and 41-50 years as 30.0% and 42.0% respectively, followed by 20-30 years 21.0% and >50 years 07.0% respectively. Study participants comprised of 46(76.6%) females and 14(23.4%) males. **Table. 1.**

According to health care providers, nurses were most common 46.70%, followed by dispensers 25.0%, laboratory technicians were 18.30% and doctors were only 10.0%. **Fig. no.1**

Most of the cases 90.0% were aware regarding needle-stick injuries, assisted in disposal of needles was among 67.0%, 58.0% knew about first aid after NSI, 48.0% knew about universal precautions, 63.0% Get investigated after NSI, 48.0% Use gloves, 37.0% had history of needle-stick injuries and 78.0% had sufficient number of safety tools. **Table. 1.**

Table 1: Subjects distribution according to age and gender n=60

Variables	Frequency	Percentage
Age groups		
20-30 years	19	21.0%
31-40 years	22	42.0%
41-50 years	10	30.0%
>50 years	09	07.0%
Total	60	100.0%
Gender		
Female	46	76.6%
Male	14	23.4%
Total	40	100.0%

**Fig 1:** Distribution according to health care work n=60**Table 1:** Individual distribution according to awareness regarding NSI n=60

	Frequency	Percent
Aware about NSI	54	90.0%
Assisted in disposal of needles	40	67.0%
Knew about first aid after NSI	35	58.0%
Knew about universal precautions	29	48.0%
Get investigated after NSI	38	63.0%
Use gloves	29	48.0%
Had NSI	22	37.0%
Sufficient number of safety tools	47	78.0%

DISCUSSION:

Needle-stick injuries (NSIs) pose a great occupational risk of blood-borne disease transmission in health-care workers. In this study most common age groups were 31-40 years and 41-50 years as 30.0% and 42.0% respectively, followed by 20-30 years 21.0% and >50 years 07.0% respectively. Study participants comprised of 46(76.6%) females and 14(23.4%) males. Similarly in the study of Sardesai RV et al¹¹ reported that a total of 100 HCWs participated in the study, in which 71 were females and 29 were males, and the range of the age group was 22–65 years. Singh B et al⁹ reported that among all partakers 142(86.10%) were females and 23(13.90%) were males. Most of partakers 88(77.90%) belonged to the age group of 20.0-30.0 years after that by 22(19.5%) belonged to 30-40 years of age group and 3 participants were ages \geq 40 years.

In this study according to health care providers, nurses were most common 46.70%, followed by dispensers 25.0%, laboratory technicians were 18.30% and doctors were only 10.0%. On other hand Amini M et al [12] documented that among the staffs partaking in this study, there were 50 (16.1%) interns, 14 (4.5%) midwives, 45(14.5%) nursing assistants, 49 (15.8%) practical nurses, 135 (43.4%) nurses, 2 (0.6%) anesthesia technicians, 4 (1.3%) operating room technicians, and 12(3.9%) specialists.

In this series 37.0% subjects had history of needle-stick injuries, which is very lower rate from other studies as Singh B et al [9] reported that among the overall 165 partakers, 116(70.30%) had history of injury associated with needle stick in the past. While comparable findings were seen in the study of Arora A et al¹³ as; the incidence of NSSIs was greatest among nurses (38.4%).

In this study most of the cases 90.0% were aware regarding needle-stick injuries, assisted in disposal of needles was among 67.0%, 58.0% knew about first aid after NSI, 48.0% knew about universal precautions, 63.0% Get investigated after NSI, 48.0% Use gloves and 78.0% had sufficient number of safety tools, but ignorance was higher among our study participants, they following the complete rule and regulation during work. In the comparison of this series Singh B et al⁹ reported a very high incidence of NSI (70.3%), and nurses had the highest injuries associated with needle stick (76.7%); ($p < 0.05$), which is comparable to this study as nurses are more involved in the patients' care and medicine dosing,

along with elevated work load in addition to night shifts. Alike findings of raised incidence and higher distribution among nurses have been reported by several studies,^{14,15} as large number of partakers had multiple episodes of NSI and the mean number of injuries was around 2.06 ± 1.16 . These data reveal a very high incidence of NSI in this study. A high rate of partakers (30.2%) had injury during suture handling which could possibly be due to handling of sutures manually. Lack of awareness, ignorance (eg: (31.9%) not using gloves, recapping of needles, (80%) recapping by a single handed method) and longer night shifts could be its major factors. Wearing gloves during any procedure is believed to be a significant line of defense. The practice of not using gloves was found to be greater among laboratory technicians and nurses during NSIs [16]. Likewise, recapping has been found to be a definite factor of NSI [9].

CONCLUSION:

It was concluded that the almost individuals knew regarding needle-stick injuries, but ignorance was very common and use of preventive protocols were inadequate. Health care workers should strictly follow the rules and regulations of preventive measures and post-exposure prophylaxis to needle-stick injuries. A hospital-wide awareness programs and checking teams should be started.

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