

A Study of the Knowledge, Attitudes and Practices Regarding Needle Stick Injuries among Health Care Workers in Government Health Facilities of District Bandipora, J&K

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ABSTRACT

Introduction: Needle stick injuries are often neglected despite being an important occupational hazard, with potential to transmit infectious diseases. There is a need for raising awareness about them among all cadres of health care workers. The current study was done to assess the problem in Government Health facilities of a rural district of J&K.

Material and methods: Descriptive cross sectional study was done using all the secondary and 40% of the primary health facilities of the district. Study was conducted among doctors, paramedics and waste handlers. Statistics involved were proportions or percentages, assessed by chi square test.

Results: about 85% health workers considered needle stick injury as a matter of concern. 27% were recapping the needle after use. 12% had suffered a needle stick injury in the last one year and only half of them were immunized for Hepatitis B.

Conclusion: There is a need of sensitization of the various cadres of healthcare staff which is necessary to decrease the risk of occupational exposure of infectious diseases with significant focus on waste handlers. There is a need for enhancing the coverage of Hepatitis B immunization especially among the waste handlers who form the most vulnerable group.

Keywords: Knowledge, Attitudes and Practices, Needle Stick Injuries, Health Care Workers, Government Health Facilities

INTRODUCTION

Needle-stick injuries are considered as a serious occupational hazard in the healthcare settings. Needle-stick injuries occur when sharp instruments such as a needles penetrate the skin during medical procedures. If the needle is contaminated with blood and bodily fluids, there is a significant risk of transmission of infectious diseases. Needle-stick injuries have received much attention among professional medical circles, however they continue to be neglected in the field of action. In- fact, exposure to potentially infected body fluids or blood via contaminated needle-sticks and sharps is a significant occupational hazard, leading to the risk of infection with blood-borne pathogens among various cadres of healthcare workers. The present study was undertaken to better understand the needle stick injuries happening in the Government health facilities of the Bandipora District.

MATERIAL AND METHODS

Descriptive, cross-sectional study was undertaken in District Bandipora. Data was collected between April 2018 & March

2019. The district has a total of 103 health institutions to provide health facilities to the people. This includes 1 District Hospital, 3 CHCs, 31 PHCs/NTPHCs & 68 Sub Centers Both primary and secondary level facilities were included. All the secondary level facilities comprising of district hospital and 3 CHCs were chosen. Among primary level facilities, 40% of PHCs/NTPHCs and 20% of sub-centers were included in the sampling unit. The study was done among health care personnel which included Doctors, Nurses/MPHWs, Lab technicians & Waste handlers.

Inclusion Criteria

All those Health care workers who gave consent for the study.

Those who were working in medical field for more than 3 months.

Exclusion Criteria

Those who were not available at the time of study.

Newly employed health care workers.

Thus a total of 222 health care workers participated in the study including 58 Doctors, 108 paramedics i.e. (nurses/FMPHWs and lab technicians) and 56 waste handlers working in these facilities.

Ethical clearance was obtained from the Institutional Ethics Committee of SKIMS Medical college Bemina. Besides this Proper permission in writing was sought from the Director Health Services Kashmir.

STATISTICAL ANALYSIS

The standard statistical test like chi square (χ^2) was applied where ever required. All the results obtained have been discussed on 5% level of significance i.e. a p value of < 0.05 has been considered significant.

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RESULTS

Out of a total of 222 health care workers, 84.7% of the participants reported needle stick injury as a matter of concern, 26.6% of the workers were recapping the needle after use. Among 222 health care workers 78.8% of the workers used to destroy needle using hub cutter and 91.4% were aware of the consequences of needle stick injury. 11.7% of the workers had sustained a needle stick injury within last 12 months and only 10.8% of the workers filled the incident report on injury. Only 50.9% of the health care workers were fully immunized against hepatitis B. This is depicted in table 1.

Table 2, depicts association of various aspects of needle stick injury with the designation of HCWs. It was observed that 84.5% of doctors, 87% paramedics and 80.4% of waste handlers were of the opinion that needle stick injury is a matter of concern were as 15.5% doctors, 13.0% paramedics and 19.6% waste handlers did not think so. Regarding the practice of recapping the used needle 25.9% doctors, 30.6% paramedics and 19.6% waste handlers used to recap the needle after use. Again 91.4% doctors, 98.1% paramedics and 28.6% waste handlers used to destroy the used needle immediately by using hub cutter while as 8.6% doctors, 1.9% paramedics and 71.4% waste handlers were not following the practice and this difference was statistically significant with a P value of 0.000. It was also observed that 93.1% doctors,

94.4% paramedics and 83.9% of waste handlers were aware of the consequences of needle stick injury. Table 14 also shows that 84.5% doctors, 92.6% paramedics and 83.9% of waste handlers were either not remembering or have not sustained a needle stick injury during last 12 months. It was also observed that 94.8% of doctors, 83.3% of paramedics and 94.6% of waste handlers used to fill an incident report. This difference was statistically significant with a P value of 0.031. Again it was seen that 56.9% of doctors, 62% of paramedics and only 23.2% of waste handlers were fully vaccinated against hepatitis B. This difference was found to be statistically significant with a p value of 0.000.

Table 03 depicts the association of KAP of HCWs regarding needle stick injury with their experience. It was observed that 85% of HCWs with experience <20 years and 83.6% of HCWs with experience >20 years were of the opinion that needle stick injury is a concern. It was also observed that 73.1% of HCWs with experience <20 years and 74.5% with experience >20 years were recapping the used needle. Again it was seen that 79.6% of HCWs with experience <20 years and 76.4% of HCWs with experience >20 years used to destroy the used needle immediately using hub cutter. Also 90.4% of HCWs with experience <20 years and 94.5% of HCWs with experience >20 years were aware of the consequences of needle stick injury. It was also seen that 88% of HCWs with experience <20 years and 89.1% of HCWs with experience >20 years have not sustained a

	N	%
Is needle stick injury a concern?		
Yes	188	84.7
No/ do not know	34	15.3
Total	222	100.0
Do you recap the used needle		
Yes	59	26.6
No	163	73.4
Total	222	100.0
Do you destroy the used needle immediately by using hub cutter?		
Yes	175	78.8
No	47	21.2
Total	222	100.0
Are you aware of consequences of needle stick injury?		
Yes	203	91.4
No/Not concerned	19	8.6
Total	222	100.0
Have you sustained a needle stick injury during last 12 months?		
Yes	26	11.7
No/ Do not remember	196	88.3
Total	222	100.0
Did you fill in an incident report?		
Yes	24	10.8
No	198	89.2
Total	222	100.0
Have you been fully vaccinated against hepatitis B?		
Yes	113	50.9
No/Not sure	109	49.1
Total	222	100.0

Table-1: KAP regarding needle stick injury

	Designation			Total	P-Value
	Doctor	Paramedic	Waste handler		
Is needle stick injury a concern?					
Yes	49	94	45	188	.530
	84.5%	87.0%	80.4%	84.7%	
No/ Do not know	9	14	11	34	
	15.5%	13.0%	19.6%	15.3%	
Do you recap the used needle?					
Yes	15	33	11	59	.321
	25.9%	30.6%	19.6%	26.6%	
No/ Do not bother	43	75	45	163	
	74.1%	69.4%	80.4%	73.4%	
Do you destroy the used needle immediately by using hub cutter?					
Yes	53	106	16	175	.0001
	91.4%	98.1%	28.6%	78.8%	
No	5	2	40	47	
	8.6%	1.9%	71.4%	21.2%	
Are you aware of consequences of needle stick injury?					
Yes	54	102	47	203	.080
	93.1%	94.4%	83.9%	91.4%	
No	4	6	9	19	
	6.9%	5.6%	16.1%	8.6%	
Have you sustained a needle stick injury during last 12 months?					
Yes	9	8	9	26	.151
	15.5%	7.4%	16.1%	11.7%	
No/ Do not remember	49	100	47	196	
	84.5%	92.6%	83.9%	88.3%	
Did you fill in an incident report?					
Yes	3	18	3	24	.031
	5.2%	16.7%	5.4%	10.8%	
No	55	90	53	198	
	94.8%	83.3%	94.6%	89.2%	
Have you been fully vaccinated against hepatitis B					
Yes	33	67	13	113	.0001
	56.9%	62.0%	23.2%	50.9%	
No/ Not sure	25	41	43	109	
	43.1%	38.0%	76.8%	49.1%	

Table-2: Assessment of KAP regarding needle stick injury among HCWs as per their designation.

needle stick injury during last 12 months. It was found that 50.9% of HCWs from both the groups were fully vaccinated against hepatitis B.

DISCUSSION

84.7% of the participants reported needle stick injury as a matter of concern in our study which included 84.5% of doctors, 87% paramedics and 80.4% of waste handlers was in accordance with the studies conducted by Ravishekar N Hiremath et al in Karnataka and Ahmad Yar Mohammad Dawood Al Balushi et al in Oman found 86.3% and 87.2% of needle stick injuries among participants respectively.^{1,2} Recapping of needles after use is a wrong practice and has contributed significantly towards accidental needle stick injuries in health care providers during their practice. Our study could find 26.6% of the workers who used to recap the needle after use. It was observed that the practice of recapping the used needle 25.9% doctors, 30.6% paramedics

and 19.6% waste handlers used to recap the needle after use which was in accordance with the study conducted by Sehgal et al in Delhi were 25.8% of the participants used to recap the needle after use. However, on the contrary studies conducted by Shah M et al in Gujarat and Ahmad Yar Mohammad Dawood Al Balushi et al in Oman showed 88.57% and 65.6% of the workers recapping the needle after use.^{3,4,2}

As per the BMW management rules use of needle destroyer after an injection event is considered as a safe practice. A study conducted by Anand P et al in Haryana found that 77.7% of the workers used to destroy needle using hub cutter which was in accordance with the results in our study were 78.8% of the workers used to destroy needle using hub cutter.⁵

It was encouraging to see that 91.4% of the health care workers in our study were aware of the consequences of needle stick injury including 93.1% doctors, 94.4% paramedics and 83.9% of waste handlers similar to the study

	Professional Experience in years		Total	Odds Ratio (95% CI)	P-Value
	≤ 20	>20			
Is needle stick injury a concern?					
Yes	142	46	188	1.111	.803
	85.0%	83.6%	84.7%	.484-2.552	
No/ Do not know	25	9	34		
	15.0%	16.4%	15.3%		
Do you recap the used needle?					
Yes	45	14	59	1.080	.828
	26.9%	25.5%	26.6%	.538-2.167	
No/ Do not bother	122	41	163		
	73.1%	74.5%	73.4%		
Do you destroy the used needle immediately by using hub					
Yes	133	42	175	1.211	.606
	79.6%	76.4%	78.8%	.585-2.505	
No	34	13	47		
	20.4%	23.6%	21.2%		
Are you aware of consequences of needle stick injury?					
Yes	151	52	203	.544	.418
	90.4%	94.5%	91.4%	.152-1.944	
No/ Not concerned	16	3	19		
	9.6%	5.5%	8.6%		
Have you sustained a needle stick injury during last 12 months?					
Yes	20	6	26	1.111	.831
	12.0%	10.9%	11.7%	.422-2.925	
No/ Do not remember	147	49	196		
	88.0%	89.1%	88.3%		
Did you fill in an incident report?					
Yes	18	6	24	.987	.978
	10.8%	10.9%	10.8%	.371-2.625	
No	149	49	198		
	89.2%	89.1%	89.2%		
Have you been fully vaccinated against hepatitis B					
Yes	85	28	113	1.000	.999
	50.9%	50.9%	50.9%	.543-1.839	
No/ Not sure	82	27	109		
	49.1%	49.1%	49.1%		

Table-3: Assessment of KAP regarding needle stick injury among HCWs as per their experience

conducted by Ravishekar N Hiremath et al were 86.3% of the workers were aware of the consequences of needle stick injury.¹

In the present study 50.9% of the health care workers were fully immunized against hepatitis B. It was seen that 56.9% of doctors, 62% of paramedics and only 23.2% of waste handlers were fully vaccinated against hepatitis B. which was in accordance with the studies conducted by Patil S P et al in Maharashtra and Ismail I M et al in Karnataka where they found 41.8% and 43.3% of the health care workers were fully immunized against hepatitis B.^{6,7}

CONCLUSION

Thus our study reveals that there is a need of sensitization of the various cadres of healthcare staff which is necessary to decrease the risk of occupational exposure of infectious diseases with significant focus on waste handlers who are often neglected in trainings and other activities. Recapping of the needle is a hazardous action and must be discouraged.

There is a need for enhancing the coverage of Hepatitis B immunization especially among the waste handlers who form the most vulnerable group.

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