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## Knowledge Practice Gaps About Needle Stick Injuries among Health Care Workers at Omdurman Teaching Hospital – Sudan 2016

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### ABSTRACT

Needle stick injury remains the potential source for transmission of blood born infection and one of the main safety concerns which need to be address for the prevention of various blood borne diseases among HCW .The aim of our study were to assess the knowledge and practice gaps about Needle Stick Injuries (NSIs) and their associated factors among Health Care Workers' (HCWs) at Omdurman teaching hospital. Methods: A cross-sectional study was conducted in may–June2016. (92) Respondents enrolled in the study (medical officer, lab technicians and nurses selected randomly. Results: Overall the knowledge about transmission of HBV HCV and HIV was good mean knowledge 76.1% in general their practice regard nsis was poor means score practice 88.9%.there is significant relation between knowledge and socio demographic data p .000 and insignificant between socio demographic and their practice p.612 From the study concluded that NSSIs are common risk factors for infection among health care workers due to their poor practice, although their knowledge is good. lastly recommended that Hospitals and health care facilities should be provided all preventive skills and instruments against infections. Record keeping and reporting of sharp injuries should be considered.

**Keywords:** *Needle Stick Injury, HCW, Knowledge and Practice.*

### 1. INTRODUCTION

A needle stick injury occurs due to needle point or sharp instruments. Most common among health care workers who are handling needles in the medical settings (1) Needle stick injury remains the potential source for transmission of blood born infection and one of the main safety concerns which need to be address for the prevention of various blood borne diseases among HCWs. Reported risk associated with transmission of HBV infection by NSI is about 30% similarly for HCV and HIV, 10 and 1% respectively the greatest risk for medical personnel. (2)

Most people at risk for occupational exposures are in developing countries where there is paucity of reporting standard protocols.(3) emotional distress following a Needle Stick Injury. In addition HCWs suffer from significant anxiety (4) The results of several studies have shown that different healthcare workers have had various rates of NSIs among which the proportion of nurses has been higher than others (5)

Reported activities related to the majority of NSIs are administering injections, drawing blood recapping needles, and disposing of needles, handling trash and dirty linen and transferring blood or body fluids from a syringe to a specimen container (6)

Occupational safety and health administration (OSHA) put standard's requirements for health care workers who are occupationally exposed to blood or other potentially infectious materials (OPIM), as a result of doing their job duties. One of These standards is personal protective equipment (PPE). (7)

Recapping of needle after use can lead to an injuries to health care providers which is responsible for transmission of blood borne diseases (8)

In addition, poor knowledge and practices about the risk and hazards of NSIs substantially contribute the probability of NSIs (9)

Reporting of sharp injuries is important for treatment and prevention. For the injured person, injury reporting prompts evaluation for post-exposure prophylaxis, allows early detection of sero conversion and helps to decrease anxiety. Furthermore, injury reporting allows identification of hazardous devices or procedures and so diminishes the risk of future injuries (10)

## 2. OBJECTIVE

- To assess knowledge and practice regard needle stick injuries among health care workers
- To identify the various factors associated with knowledge and practice gaps among health care workers

## 3. MATERIAL AND METHODS

A cross-sectional study was conducted in Omdurman teaching hospital 92 HCWs were participated in this study after giving consent to participate in this study. No ethical issue or harm risk was involved in this questionnaire based study, nevertheless study protocol and questionnaire was reviewed structured questionnaire, interviews were conducted during the months of may –June 2016. The variables of questionnaire include as sex, designation years since practicing and area of practice (medicine and surgery) of study knowledge related questions participants. Questions were included and 11 practice related All the responses were categorized in ‘yes’ and ‘no’ response and takes about 10 minutes to complete the questionnaire. For knowledge score every Correct answer scored= 1), while an incorrect answer scored = (0)). The respondents were divided into fair, poor and good groups evaluated as follows: poor less than 50% while from fair = 50-65% and Good = more than 65% regard Practice score One mark was awarded for each correct answer, also evaluated as follows; Poor = less than 50%, Fair= 50-65% score and Good = more than 65% total score (11)

We analyzed the data of 92 HCWs whose information was complete. SPSS-20 was used to enter validate and analyze the data. Frequency proportions were calculated for all variables of interest while chi square test was used for identifying the factors associated with poor knowledge and practices among HCWs.

## 4. RESULTS

Most of our respondents were in the age group of 20-30 years, females, most of them with diploma and they are Nurses, while most of them had Needle source of prick Needle (table (1)

In table (2) their knowledge regard needle stick injuries awareness regard about the needles safety device and transmission of blood borne disease (HBV and HCV and HIV/AIDs), their mean knowledge is good 76.1% p-value 000.1.

In table (3) their practice regard needle stick injuries is poor in the area of not use gloves in every procedure, wear gloves when withdrawing a needle from a patient, disassemble used needle or sharp with hands, separate the needle from the syringe prior to disposal, don't throw needles or sharps into the sharp bin immediately although the report for needle stick and sharp injuries. P value.765

There is significant relation between demographic data and knowledge p vale .261 while insignificant relation between demographic data and practice p value .616 instead of good mean knowledge table (4).

**Table 1: Socio- Demographic Data No. (92)**

item	frec	%
<b>Age</b>		
20-30 years	40	43.5
31-40 years	31	33.7
above 41	21	22.8
<b>gender</b>		
male	42	45.7
female	50	54.3
<b>Education level</b>		
Diploma	67	72.8
Bacloria	18	19.6
Master degree	7	7.6

Status		
Medical Laboratory Technician	17	18.5
Medical officer	23	25.0
Nurses	52	56.5
Area of practice		
Medicine	37	40.2
Surgery	38	41.3
labrotory	17	18.5
Source of prick		
Scalpel	26	28.3
Needle source of prick Needle	53	57.6
Both needle & scalpel	6	6.5
Any other	7	7.6

Table (2) Knowledge of Respondents Regard Needle Stick Injury

item	frec	%
Do you know about the universal precaution guidelines		
yes	35	38.0
no	57	62.0
Do you know about the needles safety device		
yes	71	77.2
no	21	22.8
Hepatitis B Can be transmitted by needle stick and sharp injuries		
yes	69	75.0
no	23	25.0
Hepatitis C Can be transmitted by needle stick and sharp injuries		
yes	69	75.0
no	23	25.0
HIV/AIDS Can be transmitted by needle stick and sharp injuries		
yes	69	75.0
no	23	25.0
TB can be transmitted by NSIs		
yes	6	6.5
No	86	93.5
Mean knowledge		
65%> Good	70	76.1%
Fair 50-65%	0	0
poor<50%	22	23.9%

Table (3) Practice of Respondents Regard Needle Stick Injury no(92)

item	frec	%
Do you use gloves during phlebotomy		
yes	27	29.3
no	65	70.7

<b>Do you wear gloves when withdrawing a needle from a patient</b>		
yes	26	28.3
no	66	71.7
<b>Do you recap needles after use</b>		
yes	70	76.1
no	22	23.9
<b>Do you disassemble used needle or sharp with your hands</b>		
yes	23	25.0
no	69	75.0
<b>Do you wear gloves when disposing of contaminated needles or sharps</b>		
yes	46	50.0
no	46	50.0
<b>Do you separate the needle from the syringe prior to disposal</b>		
yes	27	29.3
no	65	70.7
<b>Do you throw used needles or sharps into the sharp bin immediately</b>		
yes	46	50.0
no	46	50.0
<b>Do you wear gloves when manipulating the sharp bin</b>		
yes	26	28.3
no	66	71.7
<b>Do needle stick and sharp injuries need to be reported</b>		
yes	79	85.9
no	13	14.1
<b>Have you ever had a needle stick or sharp injury</b>		
yes	13	14.1
no	79	85.9
<b>Was the incident of needle stick or sharp injury reported</b>		
yes	87	94.6
No	5	5.4
<b>Mean practice</b>		
65%> Good	0	0%
Fair 50-65%	10	11.1%
poor<50%	81	88.9%

Table (4) Co relation between Demographic dat and Knowledge and Practice of NSIs

variables	Good (%)	Fair (%)	Poor (%)	P value
<b>knowledge</b>				
<b>Gender</b>				
Male	0	0	34.0	.216
female	81.6	0	0	
<b>Status</b>				
Medical. Tec		----	0.9	.000
Medical officer		59.4		

nurses		-	47	
<b>Year experience</b>				
Less than 5 years	82.3			.
More than 5 years			37.6	.000
<b>practice</b>				
<b>Gender</b>				
Male			37.4	
female		52.2		.616
<b>Status</b>				
Medical. Tec			37.3	
Medical officer		55.5		.312
nurses			49.2	
<b>Year experience</b>				
Less than 5 years			41.9	.616
More than 5 years			36.6	

## 5. DISCUSSION

In this study nearly half of study group their age between 20-30 years, female, with diploma degree, nurses similar to study done in public tertiary hospitals in an urban community in Mongolia (11) half of them work in medical and surgical words with equal percent 40% similarly to study done in provincial teaching hospital in China where most of their respondents work in surgical words. (12) Most of our study group exposed to prick source from Needle prick which is at contrast with study done Rawalpindi where their respondents had prick source to both needle & scalpel (13)

In relation to knowledge regard NSIs our study group showed good knowledge regard HBV and C and HIV p value .001 ,this results at contrast with study done in Pakistan where their result show unawareness of respondents regard HBV ,HCV (14)

Also results show good knowledge regard safety device but they don't know about universal precaution which is supported by study done in Mongolia their respondents do not know 66.7% don't know about it (11)

As far as use for personal protection was concerned 71.7% of health care workers were not wearing gloves while dealing with the patients. Usage of

Gloves was lowest among the nurses compare to doctors. Around 76.1% HCWs had poor practice regard recapping the needle, while half of them throw used needles or sharps into the sharp bin immediately, similar practice observed in respondents group in study done in Pakistan (15) this may be due to stress and work overload among HCW

## 6. CONCLUSION

In conclusion, NSSIs are common risk factors for infection among health care workers due to their poor practice, although their knowledge is good but they had poor practice regard NSIs ,also there is significant relation between their practice and socio demographic data p value.261 ,and insignificant relation between their socio demographic data and knowledge p value.616 Recommendation:

Hospitals and health care facilities should be provided will all preventive skills and instruments against infections. Record keeping and reporting of sharp injuries should be considered as an essential part of the infectious control actively. Post-exposure prophylaxis and follow-up facility should be provided by hospital management. Infectious control training and teaching should be an integral part of the curriculum of all disciplines including medical, dental, nursing, and paramedics. Immunization program should be mandatory for every employee.

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