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ASSESSMENT OF THE KNOWLEDGE, ATTITUDE AND PRACTICE AMONG NURSES REGARDING NEEDLE STICK AND SHARP ITEM INJURIES AT TERRITORY CARE HOSPITAL

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Abstract:

Objective: *To assess the knowledge, attitude and practice among nurses regarding needle stick and sharp item injuries*

Material and methods: *This cross sectional study was conducted at Dera Ghazi Khan Hospital Dera Ghazi Khan from March 2018 to September 2018 over the period of 3 months. Total 200 nurses were selected for this study and knowledge, attitude and practice among nurses regarding needle stick and sharp item injuries was assessed.*

Results: *Majority (6%) of sample were in the age group of 20-25 years and (31%) in age group of 26-30 years. Majority of sample (98.5%) were female. Majority of sample (91.5%) were married.*

Conclusions: *The study identified the presence of suboptimal practices that put both staff nurses and patients at significant risk of contracting occupational infections.*

Keywords: *Knowledge, Attitude, Practice, Needle stick injury*

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INTRODUCTION:

It is estimated that there are 35 million healthcare workers (HCWs) worldwide representing 12% of the working population. Two million injuries are believed to occur each year among HCWs.[1]Approximately 3 million health care workers (HCWs) experience percutaneous exposure to blood borne viruses (BBVs) each year. This results in an estimated 16,000 hepatitis C, 66,000 hepatitis B, and 200 to 5000 human immunodeficiency virus (HIV) infections annually.[2] Percutaneous injuries, caused by needle sticks and other sharps, are a serious concern for all health care workers (HCWs) and pose a significant risk of occupational transmission of blood borne pathogen. Although sharp instruments injuries are preventable, a minor injury can carry the risk of transfer of over twenty pathogens of which the most serious are Hepatitis B virus (HBV), Hepatitis C virus (HCV) and Human Immunodeficiency virus (HIV).[3, 4] Needle stick injuries are defined as wounds that are caused by sharp objects like hypodermic needles, fluid collection needles and IV cannel as which are attributed due to improper handling or manipulation of needles in different activities such as obtaining or transferring sample specimens, recapping activities and failure to dispose needles in puncture proof containers. [3] Those injuries and blood-borne infections can be prevented by applying various strategies such as immunization for hepatitis B virus , post exposure prophylaxis and procedures to prevent percutaneous injuries.[5] It is estimated that worldwide contaminated injection cause 8-16 million hepatitis B virus infection, around 2.4 to 4.5 million hepatitis C virus infection and about 80,000 to 160,000 HIV infections.[6] In 2000-2030, WHO estimate that 16 000 HCV infections attributable to sharps injuries will result in 142 (51-749) early deaths. Similarly, the 66 000 HBV infections will lead to 261 (86-923) early deaths, and about 736 (129-3578) healthcare workers will die prematurely from 1000 HIV infections.[5] The incidence of NSI is considerably higher than current estimates, due to gross underreporting (often less than 50%). In USA 6,00,000 to 10,00,000 receive NSI from conventional needles and sharps every year, while in UK it is 1,00,000 HCWs/year. It is known that around 3-6 billion injections are given per year, of which 2/3rd injections are unsafe (62.9%) moreover in a study done at dental school in Sudan there is (69.6%) students reported being exposed to a sharp instruments injury.[1, 3] Infection by the human immunodeficiency virus (HIV) and hepatitis B virus (HBV) pose great health problems worldwide particularly in the developing countries. The risk of occupational BBI for HCWs in low and middle income countries is high due to crowded hospitals, high patient load per HCW, limited knowledge of risks, inadequate personal protective equipment (PPE), lack of sharps containers, limited knowledge and utilization of Post Exposure Prophylaxis (PEP), low adherence to Universal Precautions (UP), high prevalence of patients with BBI and low hepatitis B vaccination coverage among HCWs.2- 4As 2 million cases of HCV and 21 million of HBV infections are due to unsafe therapeutic injections,5poor adherence to UP puts both patients and HCWs at risk of BBI.[2, 7-9]

Preventing NSI is an essential part of any blood borne pathogen prevention program in the work place. With regard to prevention, when exposures occur, the risk of infection can be significantly reduced by following protocols for PEP. Guidelines have been issued for the management of HCWs who have had occupational exposure to blood borne pathogens. This includes urgent valuation of the source and exposed person's status along with the timely administration of hepatitis B immune globulin (HBIG), hepatitis B vaccine and/or HIV PEP where applicable. For HCV, testing should be performed to determine if infection develops. [7, 10-13]

METHODS:

This cross sectional study was conducted at Dera Ghazi Khan Hospital Dera Ghazi Khan from March 2018 to September 2018 over the period of 3 months. Total 200 nurses (male or female) were selected. An approval was taken from institutional committee. The study population consisted of Staff Nurses who came into contact with patients, or were potentially exposed to body fluids from patients while attending to or handling samples from patients. Questionnaire was adopted and developed with modification from related study– occupational needle stick and sharps injuries among hospital healthcare workers.

All the data was entered in SPSS version 18 and analyzed. Mena and SD was calculated for numerical data and frequencies and percentages were calculated for categorical data.

RESULTS:

Table 1 showed that a total of 200 nurses were included in the main study. The description of demographic characteristics was included in term of age, sex, marital status, place of posting, experience. Table 2 showed that majority (6%) of sample were in the age group of 20-25 years, (31%) in age group of 26-30 years, (19%) in age group of 31-35 years, (8.5%) in age group of 36-40 years, (5.5%) in age group of 41-45 years, (7.5%) in age group of 46-50 years, (7.5%) in age group of 51-55 years, (15%) in age group of 56-61 years. Majority of sample (98.5%)

were female and (1.5%) were male. Majority of sample (91.5%) were married & (8.5%) were unmarried. Majority of sample (31%) have 1-5 years of experience, (31%) have 6-10 years of experience, (1.5%) have 11-15 years of experience, (5%) have 16-20 years of experience, (4.5%) have 21-25 years of experience, (13%) have 26-30 years of experience, (7.5%) have 31-35 years of experience, (10%) have 36-40 years of experience.

In Table 3, all subjects said that dirty hands transmit the disease. Majority (96.5%) of sample had attended training related to infection prevention control. Majority (92.5%) of sample know about needle stick/sharp injuries post exposure prophylaxis. Majority (95%) of sample know about universal precaution guidelines regarding needle stick/sharp injuries. Majority (87.5%) of sample know about hospital had a system for reporting accidental exposure to blood and body fluids including needle stick and sharp object. Majority (89.5%) of sample have received Hepatitis B vaccination. Majority (48%) of sample have sustained needle stick/sharp injuries in last one year, minority (42.5) of sample have not that & not recalled (9.5%) of sample also have not that. Majority (56.5%) of sample have not received any post exposure prophylaxis for needle stick/sharp injury in last one year and majority (99%) of sample were discarding the needle/sharp immediately after using on the patient, minority (1%) of sample didn't that. Majority (58%) of sample have not any accidental spillage blood/body fluid on the body.

Table 1: Detail of nursing staff.

Variable	Total staff nurses posted	Subjects taken
Hospital area		
Medicine ward	50	24
Surgery ward	54	27
Obst and gynae ward	56	26
SOT complex ward	23	11
Paediatrics ward	35	17
A & E ward	59	29
Orthopaedics ward	18	9
Chest and TB ward	13	7
ENT ward	7	3
Eye ward	9	4
Super speciality block		
Cardiology ward	6	2
CTVS ward	7	5
Urology ward	7	4
Nephrology ward	14	7
BPS ward	14	7
Intensive care unit		
CTVS ward	12	5
Cardio ward	6	2
A+E ward	16	8
Ward 25 ICCU	8	4
Total	414	200

Table 2: Demographic characteristics of study subjects (n=200).

S. no.	Characteristics	Demographic variables	Frequency		Percentage (%)
1.	Age (in years)	20-25	12		6
		26-30	62		31
		31-35	38		19
		36-40	17		8.5
		41-45	11		5.5
		46-50	15		7.5
		51-55	15		7.5
		56-61	30		15
2.	Sex	Male	3		1.5
		Female	197		98.5
3.	Marital status	Married	183		91.5
		Unmarried	17		8.5
4.	Experience (years)	1-5	62		31
		6-10	62		31
		11-15	3		1.5
		16-20	10		5
		21-25	9		4.5
		26-30	26		13
		31-35	15		7.5
		36-40	13		6.5

Table 3: Assessment of level of knowledge, attitude, and practice among staff nurses (n=200).

S. no.	Knowledge about	Answer	Frequency	Percentage (%)
1.	Dirty hands transmit the disease	Yes	200	100
		No	0	0
2.	Attended any training related to infection prevention control	Yes	193	96.5
		No	7	3.5
3.	Needle stick/sharp injuries post profile exposure prophylaxis	Yes	185	92.5
		No	15	7.5
4.	Universal precaution guidelines regarding needle stick/sharp injuries	Yes	190	95
		No	10	5
5.	Hospital have a system for reporting accidental exposure to blood and body fluids including needle stick & sharp object	Yes	175	87.5
		No	10	5
		Don't know	15	7.5
6.	Received hepatitis B vaccination	Yes	179	89.5
		No	21	10.5
7.	Recapping needles after the use to the patient	Yes	86	43
		No	114	57
8.	Sustained needle stick/sharp injuries in last one year	Yes	96	48
		No	85	42.5
		Not recalled	19	9.5
9.	Received any post exposure prophylaxis for needle stick/sharp injury in last one year	Yes	74	37
		No	113	56.5
		Not recalled	13	6.5
10	Discarding needles/ sharp immediately after using on patient in your hospital	Yes	198	99
		No	2	1
11	Any medicine for post exposure prophylaxis of needle stick/sharp injury available in your hospital or ward	Yes	166	83
		No	23	11.5
		Not known	11	5.5
12	Any accidental spillage blood/body fluid on your body	Yes	84	42
		No	116	58

DISCUSSION:

Majority (6%) of sample were in the age group of 20-25 years, (31%) in age group of 26-30 years, (19%) in age group of 31-35 years, (8.5%) in age group of 36-40 years, (5.5%) in age group of 41-45 years, (7.5%) in age group of 46-50 years, (7.5%) in age group of 51-55 years, (15%) in age group of 56-61 years. Majority of subjects (31%) had 1-5 years of experience, 31% subjects had 6-10 years of experience, 1.5% had 11-15 years of experience, 13% had 26-30 years of experience and 10% had 36-40 years of experience. All subjects said that dirty hands transmitted the disease. Majority (96.5%) of sample had attained training related to infection prevention and control. Majority (92.5%) of sample knew about needle stick/sharp injuries post exposure prophylaxis treatment but 7.5% of samples were not aware. Jaber et al and Salekar et al reported the similar observations.[14-15]

Majority (95%) of subjects knew about universal precaution guidelines regarding needle stick/sharp injuries while 5% of subjects were not aware. Majority (87.5%) of sample knew about hospital have a system for reporting accidental exposure to blood & body fluids including needle stick & sharp object. Parbhu quoted the similar results.[16] Majority (89.5%) of sample had received Hepatitis B vaccination, few (10.5%) of sample had not received the vaccine. Nearly half (57%) of subjects were not recapping the needle after the using to patient and 43% of subjects had knowledge. Majority (48%) of sample had sustained needle stick/sharp injuries in last one year. 56.5% of sample had not received any post exposure prophylaxis for needle stick/sharp injury in last one year. Maximum (99%) of sample were discarding the needle/sharp immediately after using on the patient in hospital. 83% subjects knew the medicines for post exposure prophylaxis of needle stick/sharp injury available in hospital or ward. 58% of sample had not any accidental spillage blood/body fluid on the body. Parbhu et al and Guruprasad et al revealed the similar observations.[16-17]

CONCLUSION:

The needle recapping was key modifiable risk behavior. The study identified the presence of suboptimal practices that put both staff nurses and patients at significant risk of contracting occupational infections.

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