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Perception about Precautions of Needle Stick Injuries among Nurses

SOSHEAL SOHAIL
BSN, The University of Lahore
MUHAMMAD AFZAL
Master of Science in Nursing, AKU, Karachi
MSC Haematology, BMU, Karachi
MBA in Health Management, Preston University
Associate Professor
Lahore School of Nursing, The University of Lahore
MUHAMMAD HUSSAIN
MS in Medical Imaging Technology (MSMIT) UOL, LHR
Bachelor of Science in Nursing (BSN) DUHS, KARACHI
Assistant Professor
Lahore School of Nursing, The University of Lahore
SYED AMIR GILANI
PhD Public Health
PhD Medical Diagnostic Ultrasound
Dean, Faculty of Allied Health Science, The University of Lahore

Abstract:

Introduction: *Nurses are the most commonly affected group among health workers. Due to needle stick injuries twenty lac people are exposed to blood borne virus each year. Needle stick injuries means sharp attempted wound that initiates blood. Needle stick injuries can occur during the duty of the health care worker, by a dangerous needle, sharp instruments or lancets.*

Objective *of study was to assess nurses' perception about precautions of needle stick injuries.*

Material and Method*: 140 participants were participated in this study voluntarily study was conducted in Doctors hospital Lahore.*

Results: *Study finding showed that 56.5%nurses have the perception regarding the needle stick injury. This study further elaborated that needle stick injuries can be prevented by proper perception of precaution.*

Conclusion: *Some simple steps need to be practiced and every organization should address this issue because safety of employee is the responsibility of organization, managers and policy makers.*

Key words: Needle stick, Injury, Nurses

1. INTRODUCTION

Needle stick injuries means sharp attempted wound that initiates blood. Needle stick injuries can occur during the duty of the health care worker, by a dangerous needle, sharp instruments or lancets (Manzoor, et.al., 2015).

Nurses are the most commonly affected group among health workers. Due to needle stick injuries twenty lac people are exposed to blood borne virus each year (WHO, 2016). In Saudi Arabia the incidence of needle stick injuries is sixteen percent during previous study in nurses (Mahfouz, et. al., 2017). In Pakistan the reported incidence of needle sticks injuries is sixteen percent in nurses. Needle stick injuries are estimated to transmit sixty thousand infections with HBV, sixteen thousand with HCV, and one thousand with HIV globally. 80% of needle stick injuries can be prevented through the use of safety devices and effective safety programs (Manzoor, et. al., 2015).

Needle stick injuries occur during the administration of injections, withdrawing of blood, recapping of the needle, disposing of needle and handling waste disposal. The occupational infection could be prevented and their prevention is most necessary for the reason that they are the common way of transmitting blood born disease from one person to another person (Acharya et. al., 2014).

There is a need for nurse's to have the expertise in handling of needles and sharp objects. Poor perception toward needle stick damage can predispose to more serious dangers in needle stick injuries and due to this poor perception the nurses are prone to infectious conditions which may lead to serious life threatening situations (Firas, 2014).

Although study showed that medical employees have knowledge about needle stick injuries, but they have less awareness about preventive measure, though immunized medical employees are still at risk. Universal precaution is that health care employees should have certain perception about recapping used needles. Study about perception of needle stick injuries and relation of needle stick injuries to every employee in the health care setting agreed that health care worker are at risk of needle stick injuries, but universally there is a need to enhance the perception among nurses (Swe et, al., 2014).

Rampal et, al., (2010).conducted the study in Serdang Hospital, Malaysia; results showed that the nurses have no perception to wear gloves during phlebotomy procedure.

According to study by Lal P et, al.,(2017).nurses have low perception about the needle stick injuries and have a great risk to acquire the human immunodeficiency virus during their duties hours. The general reason of high risk of human immunodeficiency virus is lack of perception of needle stick injuries among nurses. Nurses undergo the needle stick injury and become infected with blood borne and other diseases. Wide spread safety measures incorporate hand washing strategies before and after doing procedure and utilization of obstruction like glove as essential level of prevention.

2. LITERATURE REVIEW

Study by (Swe et. al., 2014) showed that medical employees have knowledge about needle stick injuries, but they have less awareness about preventive measure, though immunized

medical employees are still at risk. Universal precaution is that health care employees should have certain perception about recapping used needles. Study about perception of needle stick injuries and relation of needle stick injuries to every employee in the health care setting agreed that health care worker are at risk of needle stick injury, but universally there is a need to enhance the perception among nurses.

Every health care workers should be aware about the possibility of spreading Infection diseases like, human immunodeficiency virus, Hepatitis B, and Hepatitis C from needle stick injury. Result of this study showed that participants have no perception regarding the recapping of needle according to standard precautions. Recapping is much safer before discarding the sharps like syringes lancets, IV cannulas (Saleem et. al., 2015).

Khraisat (2015) conducted a study on perception of medical employee regarding needle stick injuries and results revealed medical care providers have a good and maximum level of perception and knowledge regarding needle stick injuries. They have inappropriate attitude towards needle stick injuries. Rampal et, al., (2016).conducted the study in Serdang Hospital, Malaysia; results showed that the nurses have no perception to wear gloves during phlebotomy procedure.

According to study by Lal P et, al., (2017).nurses have low perception about the needle stick injuries and have a great risk to acquire the human immunodeficiency virus during their duties hours. The general reason of high risk of human immunodeficiency virus is lack of perception of needle stick injuries among nurses. Nurses undergo the needle stick injury and become infected with blood borne and other diseases. Wide spread safety measures incorporate hand washing strategies before and after doing procedure and utilization of obstruction like glove as essential level of prevention.

There are many risk factors of needle stick injuries or sharp injury among health care workers like nurses and

paramedics, like insufficient knowledge and perception about recapping of needle and disposing of needles. Nurses are at a greater risk of needle stick injury due to direct exposure of infected sharps because they have no perception regarding precautionary measures like hand washing and wearing gloves while there is still mishandling of used syringes. They have insufficient perception about needle stick injuries (Firas, 2015).

Wide spread safety measures incorporate hand washing strategies before and after doing procedure and utilization of obstruction like glove as essential level of prevention (Rajput et al., 2016).

Bhat et al., (2014) conducted a study among student nurses of school to evaluate, learning and mindfulness amongst the nurses in regards to danger of human immune deficiency virus disease through accidental needle stick injuries. The study showed that eighty nine percent student of nursing have no perception about the needle stick injuries and transmitted infection.

Poor level of perception of the health care worker toward needle sticks injuries is reflected by their improper level of attitude towards needle stick injuries. The study found that 46.7% of the nurses have low perception toward the needle sticks injuries (Al-Dabbas et al, 2014).

3. PROBLEM STATEMENT

Nurses are the most commonly affected group among health workers. Due to needle stick injuries twenty lac people are exposed to blood borne virus each year (WHO, 2016).

In Saudi Arabia the incidence of needle stick injuries is sixteen percent during previous study in nurses (Mahfouz, et. al., 2017).

In Pakistan the reported incidence of needle sticks injuries is sixteen percent in nurses. Needle stick injuries are estimated to transmit sixty thousand infections with HBV,

sixteen thousand with HCV, and one thousand with HIV globally. 80% of needle stick injuries can be prevented through the use of safety devices and effective safety programs (Manzoor, et. al., 2015).

Needle stick injuries among nurses are common and are often not reported and the majority of them did not take precautionary measures. These incidences warranted the need for ongoing attention to strategies to reduce such injuries in a systematic way and to improve reporting system so that appropriate medical care can be delivered.

The study findings will enable the organization to develop policies regarding the precautionary measure of needle stick injuries. That will minimize the chance of injuries to nurses during provision of care to patients.

4. OBJECTIVE

The objective of the study is:

1. To see perception about precautions of needle stick injuries among nurses.

5. RESEARCH HYPOTHESIS

Null Hypothesis:

Nurses have no perception about precautions of needle stick injuries among nurses.

Alternative Hypothesis:

Nurses have perception about precautions of needle stick injuries among nurses.

6. MATERIAL AND METHOD

Study Design

A cross-sectional analytical study design was used.

Study Setting

The setting for this research was Doctor Hospital Lahore.

Duration of the Study:

This study took approximately 4 months (September 2018, to December 2018).

Study Population:

The study population for this research was all nurses working in Doctor Hospital Lahore.

Sampling Technique:

The simple random sampling technique was used to collect data from selected population.

Sample Size:

Sample size is determined by using this formula

$$n= N/ 1+ (N) (E)^2$$

Desired sample size= n=?

Target Population= N =216

Margin of error =E=0.05 at 95% confidence interval

$n=216/1+216(0.05)^2$

n= 216/1+216(0.0025)

n=216/1+0.54

n=216/1+0.54

n=216/1.54

n=140

The sample size is 140

Sample Selection for Nurses:

Inclusion criteria:

The subject included in the study was:

- All staff nurses
- Both male and female
- Those patients who were interested to participate in the study

Exclusion criteria:

The subjects who are excluded from the study was:

- Head nurses and nursing assistant
- Those who are not willing to participate

7. ETHICAL CONSIDERATION

The rules and regulations set by the ethical committee of Lahore School of Nursing was followed while conducting the research and the rights of the research participants will be respected.

- Written informed consent attached was taken from all the participants.
- All information and data collection was kept confidential.
- Participants remained anonymous throughout the study.
- The subjects were informed that there are no disadvantages or risk on the procedure of the study.
- They will also be informed that they were free to withdraw at any time during the process of the study.
- Data was kept in under key and lock while keeping keys in hand. In laptop it will be kept under password.

8. DATA COLLECTION PLAN

- After taking informed consent, data wascollected by the help of collection tool questionnaire adopted from McDowell (2006).
- Data was collected from 140 staff nurses.

9. DATA ANALYSIS:

Data was analyzed by using SPSS version 22.0 statistical software for data analysis.

- Demographic variables like age, gender, marital status, education etc. was analyzed by using descriptive statistics like frequency, percentage, mean and standard deviation. Percentages were calculated for categorical data while continuous data was analyzed through mean and standard deviation.

RESULTS

Data analysis:

Table 1.
Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	female	117	83.6	83.6	83.6
	Male	23	16.4	16.4	100.0
	Total	140	100.0	100.0	

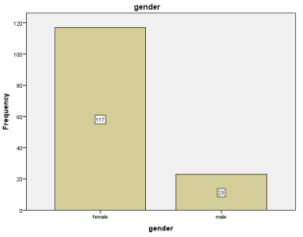


Figure 01

The figure show gender are participant in the study the female nurses were 83.6% (117) and male nurses are 16.6%(23).

Table 2.
Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20_25	13	9.3	9.3	9.3
	26_30	96	68.6	68.6	77.9
	31_35	31	22.1	22.1	100.0
	Total	140	100.0	100.0	

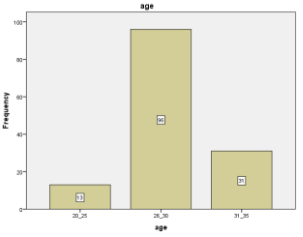


Figure 2.

The whole proportion of sample size on female and male staff nurses working in doctors hospital (n=140,100%). About 9.3% (n=13) of the respondent were 20-25 years old,68.6% (n=96) between 26 to 30 years of age,22.1% (n=31) were between 31 to 35 years old.

Table 3.
Qualification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	G.Nursing	97	69.3	69.3	69.3
	Specialization	24	17.1	17.1	86.4
	Post RN.BSN	19	13.6	13.6	100.0
	Total	140	100.0	100.0	

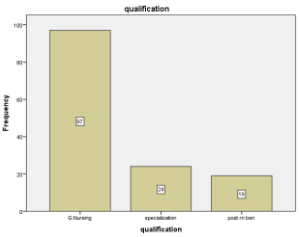


Figure 3.

Most of employs had general nursing diploma69.3% (n=97), and about 17.1%,(n=24) had specialization and 13.6%(n=19) had post RN degree.

Table 4.
Stay_in_organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less then 1 year	25	17.9	17.9	17.9
	1 to 5 years	105	75.0	75.0	92.9
	6 to 10	8	5.7	5.7	98.6
	more than 10	2	1.4	1.4	100.0
	Total	140	100.0	100.0	

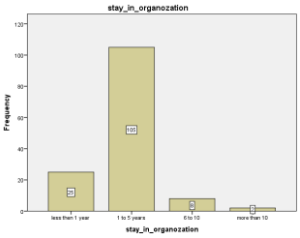


Figure 4.

Nurses having less than one year experience17.9% (n=25), while 75%(n=105) were having 1-5 years experience.5.7%(n=8) were 6 to 10 years experience and only 1.4%(n=2) were having above 10years experience.

Table 5.

marital_status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	single	113	80.7	80.7	80.7
	married	27	19.3	19.3	100.0
	Total	140	100.0	100.0	

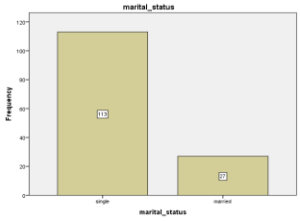


Figure5.

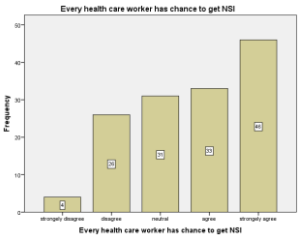
Figure show that the 80.7% (113) participants was single and19.3% (27) was married.

Question.1

Table 6

Every health care worker has chance to get NSI

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	4	2.9	2.9	2.9
	Disagree	26	18.6	18.6	21.4
	Neutral	31	22.1	22.1	43.6
	Agree	33	23.6	23.6	67.1
	strongly agree	46	32.9	32.9	100.0
	Total	140	100.0	100.0	



The response rate was 100%.140 nurses participated to answer the question.2.9%(4) replied strongly disagree and, 18.6%(26) are disagree and 22.1%(31) was neutral, 23.6%(33) were agree and, 32.9%(46) are strongly agree with this statement Question2.

Table 7
NSI are unavoidable things for the HCW

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	23	16.4	16.4	16.4
	disagree	32	22.9	22.9	39.3
	Neutral	37	26.4	26.4	65.7
	Agree	43	30.7	30.7	96.4
	strongly agree	5	3.6	3.6	100.0
	Total	140	100.0	100.0	

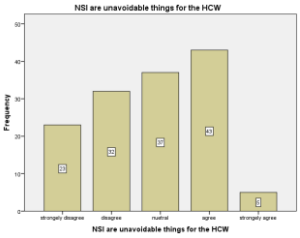


Figure shows the response of nurses the response rate was 100%. 16.4%(23) was strongly disagree and 22.9%(32) was disagree 26.4% (37)neutral and 30.7% (43)was agree 3.6(5) were strongly agree with this statement.

Question 3.

Table 8.

Increase workload can lead to NSI

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	20	14.3	14.3	14.3
	disagree	31	22.1	22.1	36.4
	Neutral	43	30.7	30.7	67.1
	Agree	26	18.6	18.6	85.7
	strongly agree	20	14.3	14.3	100.0
	Total	140	100.0	100.0	

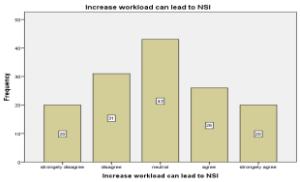


Figure shows the response of nurses 14.3 %(20) was strongly disagree and 22.1 %(31) disagree and 30.7 %(43) was neutral, 18.6% (26) were agree and 14.3 %(20) strongly agree with this statement.

Question4.

Table 9.

If HCW get infected with NSI they should resign their job

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	7	5.0	5.0	5.0
	disagree	50	35.7	35.7	40.7
	neutral	52	37.1	37.1	77.9
	agree	30	21.4	21.4	99.3
	strongly agree	1	.7	.7	100.0
	Total	140	100.0	100.0	

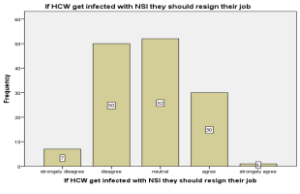


Figure shows the response of nurses were only 5%(7) nurses were strongly disagree and 35.7%(50) were disagree 21.4%(52) was agree and 37.1%(30) neutral and only .7%(1) were strongly agree this statement

Question5.

Table 10.

The standard precaution to handle the sharp object must always follow as improper handling can lead to get infection

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	disagree	22	15.7	15.7	15.7
	neutral	41	29.3	29.3	45.0
	agree	64	45.7	45.7	90.7
	strongly agree	13	9.3	9.3	100.0
	Total	140	100.0	100.0	

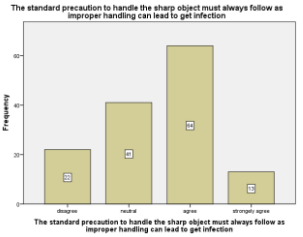


Figure shows that 15.7 %(22) nurses were disagree and 29.3 %(41) neutral and 45.7 %(64) were agree and only 9.3 %(13) were strongly agree with this statement.

Question 6.

Table 11.

The infection transmitted from NSI are life threatening

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	21	15.0	15.0	15.0
	Neutral	50	35.7	35.7	50.7
	Agree	60	42.9	42.9	93.6
	strongly agree	9	6.4	6.4	100.0
	Total	140	100.0	100.0	

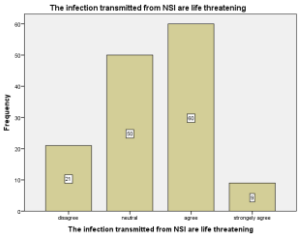


Figure shows that 15% (21) nurses were disagree and 35.7 %(50) neutral 42.9 %(60) was agree and the only 6.4 %(9) were strongly agree with this statement.

Question 7.

Table 12.

Although there is a risk of infection confident and skillfulness can prevent injury

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	26	18.6	18.6	18.6
	Neutral	47	33.6	33.6	52.1
	Agree	51	36.4	36.4	88.6
	strongly disagree	16	11.4	11.4	100.0
	Total	140	100.0	100.0	

Figure shows that 18.6 %(26) nurses were disagree and 33.6 %(47) neutral 36.4% (51) were agree and only 11.4 %(16) strongly disagree with this statement.

Question8.

Table 13.

Unavailability of protective measures can predispose a person to get NSI

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	7	5.0	5.0	5.0
	Disagree	22	15.7	15.7	20.7
	Neutral	38	27.1	27.1	47.9
	Agree	56	40.0	40.0	87.9
	strongly agree	17	12.1	12.1	100.0
	Total	140	100.0	100.0	

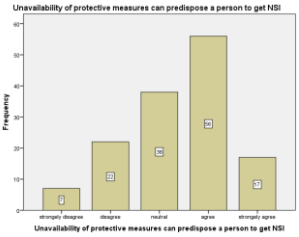


Figure shows that unavailability of protective measure 5%(7) nurses were strongly disagree and 15.7%(22) were disagree 27.1% (38)neutral and 40% (56)were agree and only 12.1%(17) were strongly agree with this statement.

Question 9.

Table 14.

Handle needle without wearing gloves rather than wearing of gloves

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	4	2.9	2.9	2.9
	disagree	25	17.9	17.9	20.7
	Neutral	48	34.3	34.3	55.0
	Agree	43	30.7	30.7	85.7
	strongly agree	20	14.3	14.3	100.0
	Total	140	100.0	100.0	

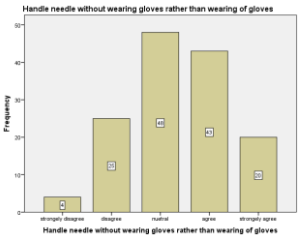


Figure and table show the response rate was 100%.2.9% (4)nurses strongly disagree 17.9%(25) were disagree and 34.3%(48) were neutral 30.7% (43)agree and 14.3%(20) were strongly agree with this statement.

Question 10.

Table 15.

We have not learned about the standard precautions of NSI

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	6	4.3	4.3	4.3
	Disagree	26	18.6	18.6	22.9
	Neutral	51	36.4	36.4	59.3
	Agree	45	32.1	32.1	91.4
	strongly agree	12	8.6	8.6	100.0
	Total	140	100.0	100.0	

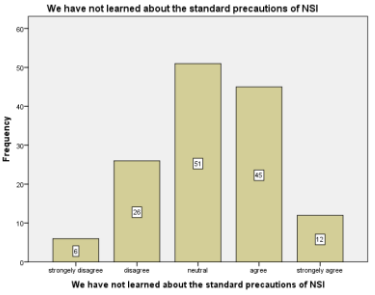


Figure and table show the response of nurses were 100%. Only 4.3%(6) strongly disagree and 18.6%(26) disagree 36.4%(51) neutral and 32.1%(45) were agree and only 8.6%(12) was strongly agree with this statement.

Question11.

Table 16.

Reporting after NSI are not much useful

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly_disagree	2	1.4	1.4	1.4
	Disagree	36	25.7	25.7	27.1
	Neutral	43	30.7	30.7	57.9
	Agree	50	35.7	35.7	93.6
	strongly_agree	9	6.4	6.4	100.0
	Total	140	100.0	100.0	

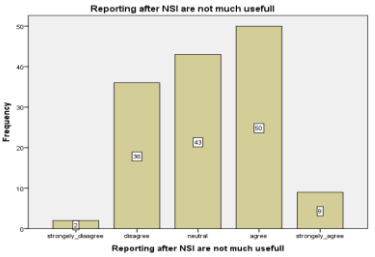


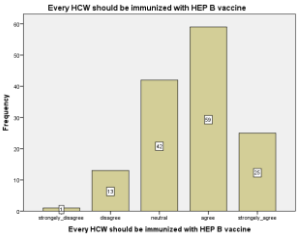
Figure and table show only 1.4%(2) were strongly disagree and 25.7%(36) disagree 30.7%(43) was neutral and 35.7%(50) agree only 6.4%(9) were strongly agree with this statement.

Question12.

Table 17.

Every HCW should be immunized with HEP B vaccine

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly_disagree	1	.7	.7	.7
	Disagree	13	9.3	9.3	10.0
	Neutral	42	30.0	30.0	40.0
	Agree	59	42.1	42.1	82.1
	strongly_agree	25	17.9	17.9	100.0
	Total	140	100.0	100.0	



The figure shows the response of nurses was 100%.only .7%(1) nurses was strongly disagree and 9.3%(13) were disagree and 30%(42) nurses was neutral, 42.1%(59) was agree and 17.9%(25) were strongly agree with this statement.

Question13.

Table 15.

Health education for universal on NSI to the nurses &HCW can reduce the prevalence. of NSI

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly_disagree	3	2.1	2.1	2.1
	Agree	22	15.7	15.7	17.9
	Neutral	35	25.0	25.0	42.9
	Agree	54	38.6	38.6	81.4
	strongly_agree	26	18.6	18.6	100.0
	Total	140	100.0	100.0	

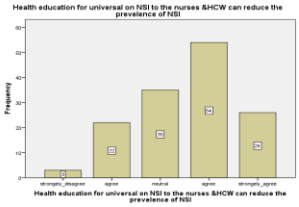


Table and Figure show that the 100% response of nurses. 2.1% (3)were strongly disagree and 15.7%(22)agree 25%(35) were neutral 38.6%)(54)were agree and 18.6%(26) was strongly agree with this statement.

DISCUSSION

Needle stick injuries are very dangerous for health care worker because it can be source of blood borne infections like, HCV Hep B, HIV. Nurses are the most commonly affected group among health workers. In this study results shoes that nurses have adequate perception about precautions of needle stick injuries.

The object of this study was to assess the nurse's perception about precautions of needle stick injuries. The study findings enable the organization to develop policies regarding the precautionary measure of needle stick injuries. That will minimize the chance of injuries to nurses during provision of care to patients.

The study conducted by (Rampal et al,2010) showed that health care worker had low scored regarding knowledge on important of wearing gloves to reduce the risk of needle stick injuries 47% and recapping of needle 45%,and standard precautions 33.5%. My study results showed that 56.5%nurses have perception about precautions of needle stick injuries.

CONCLUSION

The aim of this study was to assess the perception of nurses regarding needle stick injury. Nurses are the most commonly affected group among health workers. Due to needle stick injuries twenty lac people are exposed to blood borne virus each year nurses should have proper perception regarding the needle stick injuries because the nurses are so vulnerable because they remain in direct contact with patients, infectious diseases and needle stick injuries. and all organization , policy makers and nurses manager should address this serious issue of needle stick injuries because with some simple steps we can prevent needle stick injuries .it will ultimately help the organization to secure their employee it will also enhance the productivity and efficient working in safe environment .

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