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A Study To Determine The Training Effectiveness Of Nurses About Needle Sticks Injury By Using Kap Analysis

(With Special Reference To Private Hospital)

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Abstract: This is a cross-sectional study with quantitative survey method of knowledge, attitude and practices (KAP) of needle stick injuries in a healthcare environment. Needle stick injuries are frequent incidents while drawing blood, administering drug, or performing any procedure with sharp instruments, many a times, occurrence of this type of accidents develops blood-borne diseases. The main objective of this study is to assess the knowledge, attitude and practice with reference to needle stick injuries among nurses before and after training intervention and also to determine the effectiveness of training by applying the statistical technique.

Key words: Needle sticks, Injury, Knowledge, Attitude, Practice, Training and Intervention.

INTRODUCTION:

In the healthcare environment, needle stick injuries are common event. At the occasion of drawing blood, administering drug, or performing any procedure involving sharp appliances accidents may occur, which may lead to transmission of blood-borne diseases. Injuries also happen while needle recapping or via improper care during disposal of devices into an overfilled or poorly located sharp container. Lack use of appropriate PPE, employee failure to use the available equipment, increases the risk of occupational needle stick injuries.[1] A needle stick injury is a percutaneous piercing wound typically set by a needle point, but it could also happen by other sharp instruments or objects. Commonly encountered by people who handling needles in the medical setting, such injuries are occupational hazards in the medical community. Needle stick injuries constitute a major hazard for the transmission of viral diseases such as Hepatitis B, Hepatitis C, and Human Immunodeficiency Virus (HIV). The risk of transmission of diseases

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from patient to the healthcare worker is as follows: Hepatitis B (30%), Hepatitis C (3%), and HIV (0.3%).[2]

Nursing personnel are having upmost 60% chances of injuries. Most injuries occur during disposal of used needles (23.7%), during administration of parental injections or infusion therapy (21.2%), drawing blood (16.5%), handling linens or trash containing uncapped needles (16.1%) recapping needles after use (12%).[3]

An effective and comprehensive management plan must be prepared for the prevention and proper management of needle stick injuries in healthcare workers. After an occupational coverage, the healthcare worker should be guided and counseled concerning the degree of risk associated with the type of exposure: needle stick injuries pose a larger risk than splashes, and those from a hollow-bore needle are a greater risk than from a solid needle.[4]

For keeping the healthcare workers away from risk of needle sticks injuries, it is greatly required to exercise newer technologies. These new technology facilitate the health care workers to accomplish the preferred standards in the syringe and needle category. Auto Disable and reuse prevention syringes, prefilled injection devices, safety syringes which works on Luer lock mechanism, vacuum based technology for drawing blood, safety needles and annuals . By means of newer technologies it can make a harmless injection atmosphere and lessens the occurrence on needle stick injuries.

There is a need to measure the training effectiveness must be measured. By considering it has been decided to examine the support of training, which can be helpful to progress the knowledge, skill, and behavioral pattern of employee in the organization. It is essential for any healthcare centre to ensure training effectiveness by introducing two key activities, i. Its best practices training development, design and delivery methodology and ii. Strengthen the manpower abilities by encouraging and facilitating management. With the help of this study we could appraise the knowledge, attitude and practice towards needle stick injuries of healthcare workers such as nurses and paramedical staff. This will affirm concerning the weightage of their awareness or knowledge and the amount of precautions they take to reduce the risk of injury are their actions. We can also come to know how training will help to improve knowledge, attitude and practice of nurses and paramedical staff. Some health care providers have knowledge about how to react, what precautions we must take, what are the risk factors but their attitude towards work was not that much productive which leads to incorrect force of practices. Many confounding factors affect the attitude and practices which leads to higher risk of exposures. Training can be one intervention by which managers can reduce the ratio of these factors and change the behavior of health providers.

In this study, it is planned to make out training effectiveness of healthcare workers (nurses and other staff) knowledge, attitude and practice towards needle stick injuries. It is also needed to

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understand about the precautions they must take while on process. At the outset, it is necessary to comprehend about their perceptions on needle stick injuries. After examining rank score of nurses and healthcare staffs' knowledge, attitude and practice, it is also required to mediate their exposure with structural training program in which the researcher will train them about the needle handling process and the necessary precautions they require to follow, if they injure through needle. After the training program researcher will check their knowledge and attitude through proper evaluation process.

OBJECTIVES OF THE STUDY:

- To assess the 'Knowledge' regarding needle stick injuries among nurses before and after training intervention.
- To assess the 'Attitude' regarding needle stick injuries among nurses before and after training intervention.
- To assess the 'Practice' regarding needle stick injuries among nurses before and after training intervention.
- To determine 'effectiveness' of training for improve knowledge, attitude & practice about needle stick injury.

REVIEW OF RELATED LITERATURE:

Life prevalence is more than trainer who received training after comparing between receiver and non-receiver (Mexico City of Garcia H, Radon K, 2017)[5]. After studying comparison of awareness about precautions for needle stick injuries of health care workers at a tertiary care center in Pakistan, concluded that they must be made compulsory for all health care workers to be present in appropriate foundation classes, which are organized by the infection control department at the time of employment. (Rafay A, Siddiqui F et al (2016)[6]. Gogoi J, Ahmed J, et al(2016)studied with an objective was to determine prevalence of needle stick injuries among health care workers in a tertiary care hospital of Assam and to assess the knowledge, attitude and practices on needle stick injuries among them, in which they concluded that they need to provide pre-employment training for reducing injuries[7]. Xiao Yao W, Lun Wu Y, et al (2013) conducted a survey on occupational safety training and education for needle stick injuries among nursing students in China: Intervention study with an intention to authenticate the outcome of occupational safety training and education programs on needle stick injuries among nursing students and recommended that the OSTEP can reduce NSIs and change practical behavior markedly among nursing students[8]. A study conducted by Markovic- Denic et al (29 June- 2 July 2011) on the effect of training program to reduce needle stick injuries on pre and post intervention in a cardio surgical university hospital and concluded that education lowered pre and post intervention in a cardio surgical university hospital. study on Knowledge and beliefs

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among health care workers regarding hepatitis B infection and needle stick injuries at a tertiary care hospital, Karachi with the aim to identify knowledge and beliefs regarding HBV & NSIs among HCWs in civil hospital where overall knowledge were inadequate and behaviour and attitude towards clinical practices were found compromised[9]. Saleem, T., Khalid, U., et al (2010) conducted a study Knowledge, attitudes and practices of medical students regarding needle stick injuries, concluded that overall knowledge of medical student is good but their attitude and practice needs to improve[10]. Manzoor T, Daud S, et al(2010) did a study on needle stick injuries in nurses at a tertiary health care facility This cross-sectional descriptive study was conducted in Ghurki Trust Teaching Hospital, Lahore, concluded that Needle stick injury is the most important occupational health hazard in nurses with alarmingly high rates[11]. Hue Yang Y, Hosing Lieu S, et al(2007) did a study on the effectiveness of a training program on reducing needle stick injuries/sharp object injuries among soon graduate vocational nursing school students…. concluded that intervention significantly reduced the incidence of NSIs and increase the report rate of such events[12]. Yang Y H, Yuh Yang C et al (2004) did a study on Needle stick/sharps injuries among vocational school nursing students in southern Taiwan, found that frequency of NSIs for vocational school is above average whether the young age of these NSs put them at greater risk for NSIs[13]. Wang H, Fennie K, et al (2003), did a study on A training programmed for prevention of occupational exposure to blood borne pathogens: impact on knowledge, behavior and incidence of needle stick injuries among student nurses in Changsha, concluded that Structured training in prevention of occupational exposure to BBP improved knowledge and behavior and reduced the number of needle stick/sharp injuries.

HYPOTHESES OF THE STUDY:

H01: There is no significant difference in Knowledge, before and after training intervention.
H02: There is no significant difference in Attitude, before and after training intervention.
H03: There is no significant difference in Practice, before and after training intervention.

RESEARCH METHODOLOGY

Research design: In the present study, Structured Teaching Program was administered after pre test of the experimental group and then the same group was assessed through the post-test again. Knowledge, attitude and practice of nurses working at selected Hospitals regarding needle stick injury are dependent variables and 'Structured Teaching Program' is the independent variables. Source of data is Primary i.e. data collected structured questionnaire before and after training intervention.

Sample Description: Total sample of will be framed by using following formula:

$$n = \frac{N}{1 + N(e)^2}$$

Where,

Population Size = N (350) | sample size = n as per calculation =187

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In a study total population is 350 employees where confidence interval is 95% and 5% is the error of margin, by using the formula sample size is187 estimated.

Time Scale: 3 months

Selection Criteria: 1. Inclusion Criteria: The participants (nurses), who have signed the informed consent and, are willing to participate. 2. Exclusion Criteria: The study excludes unwilling participants and all doctors and paramedical staff.

Methodology: A cross-sectional descriptive study was conducted to assess nurses' knowledge, attitude and practice pertaining to needle stick injury.

After KAP analysis training programs was conducted for improving the knowledge, for developing positive attitude & finally persuade practices for finding the effectiveness of training.

After training program again KAP analysis will being conducted for nurses and paramedical staff.

Questionnaire was reviewed through pilot study in which it is found that 'Knowledge based question score is 0.87', 'Attitude based question score is 0.76' and 'Practice based question score is 0.68', which proved that questionnaire is valid.

RESULTS AND DISCUSSION

Table 1: Descriptive statistics of Age, and length of service of Nursing Staff

	N	Mean	Std. Deviation
Age	187	28.139	6.2812
Length of service	187	3.561	1.9730

187 nurses were participated. Their age mean is 28.139 and their length of services or clinical experience is on an average 3.5 year.

Table2: Gender distribution in total participants

		Frequency	Percent	Valid Percent
VALID	FEMALE	139	74.3	74.3
	MALE	48	25.7	25.7
	Total	187	100.0	100.0

Out of 187 Nurses 139 were female and 48 were male that states that 74.3% participants were females and 25.7% were male.

Frequency Distribution of respondents

TEST		Frequency Distribution of respondents			
		Rarely	Sometimes	Always	Total (100)
Frequency distribution of reporting incident of needle stick injury to the HCWs	PRE	09(4.8)	115(61.5)	63(33.7)	187
	POST	29(15.5)	124(66.5)	34(18.2)	187

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before/after training intervention.					
Frequency distribution of following universal precaution guidelines before/after training intervention.	PRE	42(22.5)	27(14.4)	118(63.1)	187
	POST	27(14.4)	44(23.5)	116(62.0)	187
Frequency distribution of using gloves while treating the patients.	PRE	06(3.2)	30(16.0)	151(80.7)	187
	POST	01(0.5)	31(16.6)	155(82.9)	187
Frequency distribution of habit of recapping the needle after injection before training intervention.	PRE	13(7.0)	58(31.0)	116(62.0)	187
	POST	17(9.1)	36(19.3)	134(71.7	187
Frequency distribution of attending infection control program before training intervention.	PRE	78(41.7	69(36.9)	40(21.9)	187
	POST	04 (2.1)	00	183(97.9)	187
Frequency distribution of Hepatitis B vaccination doses before training intervention.	PRE	09(4.8)	48(25.7)	130(69.5)	187
	POST	10(5.3)	37(19.8)	148(74.9)	187
Frequency distribution of bend used needle before disposal before training intervention	PRE	26(13.9)	102(54.5)	59(31.6)	187
	POST	00	51(27.3)	136(72.7)	187
Frequency distribution of following proper sharps disposal methods after training intervention.	PRE	37(19.8)	94(50.3)	56(29.9)	187
	POST	00	52(27.8)	135(72.2)	187

1. In this aspect, 63 nurses were always reporting for injury before training but, it has reduced to 34 after training.
2. Most significant in this category is that 42 nurses were 'rarely reporting' before training but it has reduced to 27 after training. It reflects that after training they are more prone to follow universal guidelines after training as compared to before training.
3. In this aspect, little improvement was observed in all categories after training. It means that they are more prone to use gloves as compared to before training.
4. In this type of practice, 134 nurses 'always' started recapping the needle after injection after training, whereas it was 116 nurses under the always category before training that indicates the affect of training.
5. In the category, significant changes have been observed after training, 40 nurses always, 69 nurses sometimes and 78 nurses rarely attended infection control program before training. But 183 nurses always and 4 nurses rarely attend infection control program after training.
6. Here, little improvement was observed after training, 140 nurses started taking 'Hepatitis B' always after training instead of 130 before training.

7. In this pattern of practice, a good rise have been observed after training … 59 nurses were under 'always' category before training but it has increased to 136 after training.

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8. It has also been observed that after training following proper sharps disposal methods has increased to 135 in 'always' category before training, whereas it was only 54 numbers before training. That means after training they are more prone to following proper sharps disposal methods as compared to before training.

Frequency Distribution of respondents

Questions		Frequency Distribution of respondents					
		Strongly Disagreed	Disagree	Uncertain	Agree	Strongly Agree	Total (100)
Every nurse has a chance to get needle stick injury.	PRE	00	03(1.6)	77(41.2)	61(32.6)	46(24.6)	187
	POST	00	00	1(0.5)	54(28.9)	131(70.6)	187
Increase workload can lead to needle stick injury.	PRE	00	45(24.1)	19(10.2)	69(36.9)	54(28.9)	187
	POST	00	00	00	66(35.3)	121(64.7)	187
They have to resign from their job if they get infected HIV due to needle stick injury	PRE	00	00	00	52(27.8)	135(72.2)	187
	POST	126(67.4)	60(32.1)	00	00	01(0.5)	187
Improper handling may lead to infection	PRE	00	00	54(26.7)	94(50.3)	43(23.0)	187
	POST	00	00	01(0.5)	46(24.6)	140(74.9)	187
Only confidence and skills cannot prevent the infection.	PRE	00	15(0.8)	53(28.3)	89(47.6)	30(16.)	187
	POST	00	00	00	106(56.7)	81(43.3)	187
Learning as a precaution for preventing needle stick injury.	PRE	100(53.5)	12(6.4)	13(7.0	50(26.7)	12(6.7)	187
	POST	01(0.5)	00	02(1.1)	106(66.7)	78(41.7)	187
Unavailability of protective equipment can predispose a person to get NSI.	PRE	19(10.2)	51(27.3)	15(8.0)	67(35.8)	35(18.7)	187
	POST	00	14(7.5)	19(10.2)	31(16.6)	123(65.8)	187
Handle needle without glove is risky.	PRE	119(63.6)	20(10.7)	00	31(16.6)	17(9.1)	187
	POST	00	00	00	135(72.2)	52(27.8)	187
Reporting after needle stick injury is useful.	PRE	15(8.0)	14(7.5)	34(18.2)	33(17.6)	91(48.7)	187
	POST	00	00	00	71(38.0)	116(62.0)	187
Every health worker should be immunized with hepatitis B vaccine.	PRE	8(4.3)	51(27.3)	67(35.8)	50(26.7)	11(5.9)	187
	POST	00	00	12(6.4)	59(31.6)	116(62.0)	187

1. Many nurses have agreed after training there is a possibility of needle stick injury otherwise maximum nurses was uncertain about the possibilities of needle stick injury. It is found from the tabulation that 132 were strongly agreed against 46 numbers before training.
2. After the training it is found that 121 nurses are strongly agreed 66 nurses were agreed about the statement to increase workload lead to increase needle stick injury after training but before training, the numbers of agreement was less.
3. In this category, before training 135 nurses were strongly agreed, 52 nurses were pertaining to their perception that they have to resign if they get infected HIV. After the training 60 nurses disagreed and 126 nurses were strongly disagreed.

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4. Here, before training 43 nurses were strongly agreed,94 nurses agreed, 50 nurses uncertain about the statement improper handling can lead to get infection but it after training ,surprisingly,140 nurses were strongly agreed 46 nurses agreed and only 1 nurse was uncertain in that regards.
5. 30 nurses were strongly agreed before training,89 nurses agreed, 53 nurses uncertain and 15 nurses were disagreed pertaining to the statement that 'confidence and skills cannot prevent risk of infection' but after training it was found that all 187 nurses (81/strongly agreed and 106/agreed) were agreed.
6. So far as statement 'Learning as a precaution for preventing needle stick injury' concerned, 100 nurses were disagreed before training but after training it is found that 78 nurses are strongly agreed 106 nurses agreed. It means, after training they have understood that there is need of learning as a precaution for preventing needle stick injury.
7. Reference to the statement 'unavailability of protective equipment can predispose a person to get needle stick injury' it is found that 154 nurses were agreed after training and surprisingly only 14 nurses were disagreed after training against 70 before training.
8. Pertaining to the statement 'risk associated with handling of needle without wearing gloves' it is found that all 187 nurses were agreed after training against 48 numbers before training.
9. With reference to the statement 'reporting after needle stick injury is useful' it is found that all187 nurses were agreed against 124 before training.
10. In response to the perception of nurses about 'every health worker should be immunized with hepatitis B vaccine', it is established that 175 nurses were agreed after training against 61 nurses before training.

1. Difference in Knowledge, before and after training intervention.

T-TEST

(i) Paired sample T-test of Pre and Post Knowledge Score regarding Needle stick injury.

		Mean	N	Std. Deviation
Pair 1	PRE KNOWLEDGE SCORE	3.47	187	1.496
	POST KNOWLEDGE SCORE	7.35	187	1.275

Before training intervention nurses MEAN knowledge score were 3.47 which rose after intervention and reached 7.35 MEAN score that means training intervention was completely used for enhancing knowledge among nursing staff regarding needle stick injury.

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(ii) Paired samples correlations between pre and post knowledge score of nurses

		N	Correlation	Sig.
Pair 1	PRE KNOWLEDGE SCORE & POST KNOWLEDGE SCORE	187	.030	.680

Paired sample correlation score is 0.030 of before training intervention and after training intervention knowledge score, which is less than 0.05 thus null hypotheses Ho1 is rejected, which states that there is a significant relation of nurse's knowledge before and after training.

(iii)Paired sample test of pre & post knowledge score

	Paired Difference					T	Df	Sig. (2tailed)
	Mean	Std. Deviation	Std. Deviation Error	95% Confidence Interval of the Difference				
				Lower	Upper			
PRE KNOWLEDGE SCORE & POST KNOWLEDGE SCORE	-3.882	1.936	0.142	-4.162	-3.603	-27.417	186	0.000

Paired sample test score is 0.000, which is significant before training intervention and after training intervention knowledge score, which is less than 0.05 thus null hypotheses Ho1 is rejected, which states that there is a significant relation of nurse's knowledge before and after training. The mean value is also -3.882, which also shows there is a difference between pre knowledge and post knowledge score.

2. Attitude statement Wilcox on rank score before & after training intervention

Wilcoxon Signed Ranks Test

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Ranks				
		N	Mean Rank	P value
POST Have you reported the incident of needle stick injury to the health care dept? - PRE Have you reported the incident of needle stick injury to the health care dept?	Negative Ranks	68[a]	50.85	0.001
	Positive Ranks	29[b]	44.67	
POST Do you follow universal precaution guidelines? - PRE Do you follow universal precaution guidelines?	Negative Ranks	44[d]	40.36	0.259
	Positive Ranks	46[e]	50.41	
POST Do you use gloves while treating the patients? - PRE Do you use gloves while treating the patients?	Negative Ranks	27[g]	26.63	0.240
	Positive Ranks	22[h]	23.00	
POST Do you have habit of recapping the needle after injection? - PRE Do you have habit of recapping the needle after injection?	Negative Ranks	50[j]	39.48	0.259
	Positive Ranks	33[k]	45.82	
POST Have you attended any infection control program? - PRE Have you attended any infection control program?	Negative Ranks	1[m]	107.50	0.001
	Positive Ranks	144[n]	72.76	
POST Do you follow universal precaution guidelines? - PRE Do you had Hepatitis B vaccination doses?	Negative Ranks	61[p]	51.30	0.016
	Positive Ranks	38[q]	47.92	

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POST Do you use gloves while treating the patients? - PRE Do you bend used needle before disposal?	Negative Ranks	17[s]	54.15	0.001
	Positive Ranks	107[t]	63.83	
POST Do you follow proper sharps disposal methods? - PRE Do you follow proper sharps disposal methods?	Negative Ranks	18[v]	53.50	0.001
	Positive Ranks	111[w]	66.86	

Table: 43 shows Wilcox on signed rank test about comparison of attitude among nurses before the training intervention and after the training intervention.

P value of attitude statement, 5/8 statement's value islessthan0.05 thus the null hypothesis is rejected which means training pay impact on nurse attitude depends on some of the situational statement. 3/8 attitude statements having a P value more than 0.05 thus they support the Ho2null hypothesis that training does not have impact on their attitude which also shows more negative ranks on that statement also.

(ii) Practice statement Wilcoxon rank score before & after training intervention

Wilcoxon Signed Ranks Test

Ranks				
		N	Mean Rank	P value
POST Every nurse has chance to get needle stick injury - PRE Every nurse has chance to get needle stick injury	Negative Ranks	10[a]	37.50	0.001
	Positive Ranks	120[b]	67.83	
POST Increase workload can lead to needle stick injury - PRE Increase workload can lead to needle stick injury	Negative Ranks	18[d]	34.50	0.001
	Positive Ranks	107[e]	67.79	

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POST If nurses get infected with HIV infection they need not to resign from their profession. - PRE If nurses get infected with HIV infection they need not to resign from their profession.	Negative Ranks	186[g]	93.50	0.001
	Positive Ranks	0[h]	.00	
POST Improper handling can lead to get the infection - PRE Improper handling can lead to get the infection	Negative Ranks	14[j]	49.50	0.001
	Positive Ranks	122[k]	70.68	
POST Confidence and skills can't prevent risk of infection - PRE Confidence and skills can't prevent risk of infection	Negative Ranks	19[m]	52.50	0.001
	Positive Ranks	115[n]	69.98	
POST You have learned standard precaution for prevent needle stick injury - PRE You have learned standard precaution for prevent needle stick injury	Negative Ranks	5[p]	27.90	0.001
	Positive Ranks	153[q]	81.19	
POST Unavailability of protective equipment can predispose a person to get needle stick injury. - PRE You have learned standard precaution for prevent needle stick injury	Negative Ranks	12[s]	38.50	0.001
	Positive Ranks	152[t]	85.97	
POST Handle needle without wearing glove is Ricky - PRE Handle needle without wearing glove is Ricky	Negative Ranks	60[v]	59.30	0.001
	Positive Ranks	32[w]	22.50	
POST Reporting after needle stick injury is useful - PRE Reporting after needle stick injury is useful	Negative Ranks	36[y]	35.00	0.001
	Positive Ranks	84[z]	71.43	

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POST Every healthcare worker should be immunized with Hepatitis B vaccine. - PRE Every healthcare worker should be immunized with Hepatitis B vaccine	Negative Ranks	9[ab]	41.61	0.001
	Positive Ranks	157[ac]	85.90	

Table: 44 shows Wilcox on signed rank test about comparison of practice among nurses before the training intervention and after the training intervention.

P value of all the statement is less than 0.05 thus the null hypothesis Ho3 is rejected. That means the third null hypothesis is rejected which state that there is significant in before after training intervention among nurses. As per aforesaid table Wilcoxon on score rank have positive rank in all statements which state that approximates 90% nurses got affected and perform well after training. So training is effectively working for their practices.

CONCLUSIONS AND RECOMMENDATIONS

Paired sample correlation score is 0.030 of before training intervention and after training intervention knowledge score, which is less than 0.05 thus the null hypotheses Ho1 is rejected, consequently it infers that there is significant differences of nurse's knowledge before and after training.

P value of attitude statement--- 5/8 statement's value is less than 0.05 thus the null hypothesis is rejected which means training pay impact on nurse attitude depends on some of the situational statement. 3/8 attitude statements having a P value more than 0.05 thus they support the Ho2null hypothesis that training does not have impact on their attitude which also shows more negative ranks on that statement also.

P value of all the statement is less than 0.05 thus the null hypothesis Ho3 is rejected. That means the third null hypothesis is rejected which state that there is a significant change after training intervention among nurses. As per aforesaid Wilcoxon table, score of all statements have positive rank, which state that approximates 90% nurses is performing well after training. So, training intervention has effectively changed their practices.

In most of the statements of knowledge and practice there is significant difference in knowledge after training as compare to before training. Training intervention is used for betterment of nurse's knowledge and practices. But, on the contrary it is also found from the statements 2 that quite a few number of the nurses' attitudes didn't change even after the training and accordingly the null hypothesis of statement 2 is rejected. In Wilcoxon test most of the nurses have positive rank so we can justify that training is an effective tool.

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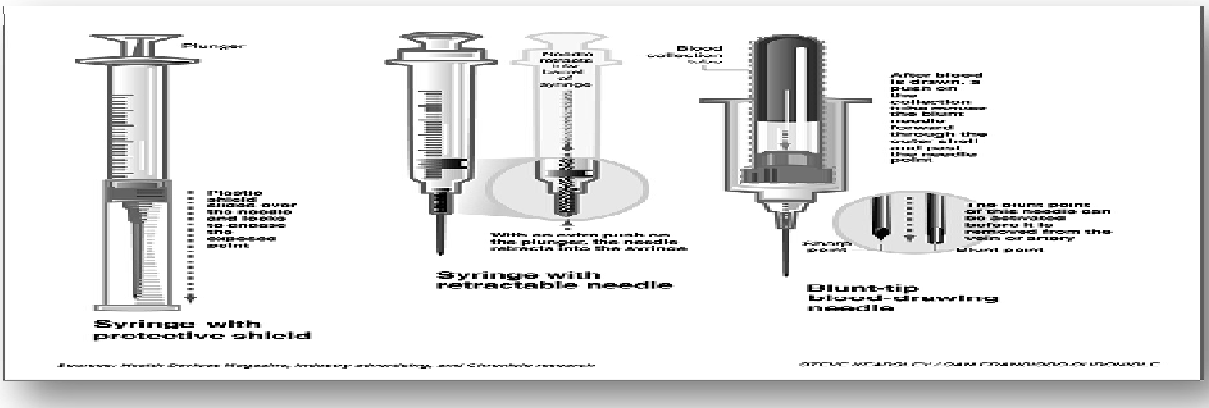
Recommendations

In the cross sectional descriptive study it has been proved that training is useful for enhancement of knowledge and practices during work, but in some situation attitude did not affect. So, regular training and regular practices with new technologies could be the appropriate intervention, which will reduce the ratio of needle stick injury and will invariably be amended the behavior of the healthcare providers. In addition to that it is better to suggest the top managements to chose and examine the appliances with necessary safety feature, because many injuries happen due to type of devices nurses are using, the injury risk and device type chart is given below as an example, illustration of few safe devices is also depicted below:



To avoid recapping the needles is also an important safety measures to be practiced. Moreover, it is highly needed to make a regular habit to report promptly if nurse get injured and also ensure to take necessary precaution as fast as possible.

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But, participating informal training in a regular is the best process for reducing the risk of needle stick injury.

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