GSJ: Volume 9, Issue 6, June 2021, Online: ISSN 2320-9186
www.globalscientificjournal.com

# ASSESSMENT OF KNOWLEDGE AND PRACTICE ABOUT NEEDLE STICK INJURY AMONG NURSES.

**Thesis submitted by**

**ASIMA BIBI**

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**2018-GCUF-076484**

**for the degree of**



**MASTER**

**IN**

**PUBLIC HEALTH**

**DEPARTMENT OF PUBLIC HEALTH**

**GC UNIVERSITY, FAISALABAD.**

# DECLARATION

The proposed work reported in this synopsis will be carried out by me under the supervision of Dr. WAFA FATIMA institute Afro- Asian institute Lower Mall Lahore **affiliated with GC University, Faisalabad, Pakistan.

I hereby declare that the title of proposed research Assessment of Nurses knowledge and practices about needle stick injury and its contents are the product of my own proposed research and no part will be copy from any published source (except the references, standard mathematical or genetic models /equations /formulas /protocols etc). I further declare that this work has not been submitted for award of any other degree /diploma. The University may take action if the information provided is found inaccurate at any stage.



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# CERTIFICATE BY SUPERVISORY COMMITTEE

We certify that the contents and form of synopsis submitted by Mr./Miss/Mrs. ASIMA BIBI Registration No 2018-GCUF-076484 has been found satisfactory and in accordance with the prescribed format. We recommend it to be processed further.

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# Abstract:

## Background:

NSI is the wound or cut caused by the needles that unintentionally tear/puncture the skin that may results in exposure to contaminated blood and the body fluids. Nursing workers are on high risk of exposure of Blood borne germs i.e HIV, HBV and HCV.

## Objective:

To assess the knowledge and practices of needle stick injury among nurses

## Methodology:

A cross sectional was done on nurses practicing in hospital. Simple random sampling technique was used on 360 nurses practicing at Bahawal Victoria hospital Bahawalpur. A quantitative instrumental questionnaire(Zia, Afzal, Sarwar, Waqas, &Gilani, 2017) was used to collect the data about knowledge and practices of needle stick injury among nurses

## Results:

Results indicates that 76.6% of nurses have good knowledge that needle stick injury is a percutaneous injury while 57.8% have poor knowledge that it is the risk of transmission of blood-borne disease. Half of the nurses population agrees that Needle stick injuries are unavoidable things for nurses. Chi square for nurses knowledge and age group represent strong association with for different questions like Needle sticks injury cause transmission of pathogens P value<0.0001, Improved engineering control devices reduce the risk of needle stick injury P value=0.03.

## Conclusion:

It suggested that 49.1% of nurses have good knowledge while 46.8% of nurses agrees with practice regarding needle stick injury. Age group and stay in organization has association with knowledge and practice of nurses regarding needle stick injuries. 6-10 years of experience showed that highest category for good knowledge and practice so increased stay in organization affected knowledge and practice of nurses.

**Key words:**

Needle stick injury, nurses, knowledge, and practice

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# Chapter # 1

## Introduction:

Needle stick Injury NSI is the wound or cut caused by the needles that unintentionally tear/puncture the skin that may results in exposure to contaminated blood and the body fluids.NSI is a major occupational disease in health care setup globally. (Laishram et al., 2013)

Needle stick injury is the penetrating injury by different type of contaminated needles. (Bidira, Woldie, &Nemera, 2014)Health care workers are most affected by the needle stick injury.(Ebrahimi &Khosravi, 2007) Needle stick injury is the most efficient way to transfer blood borne traces between the health care officers and the patients.(Smith & Leggat, 2005)

General public health is also affected by the needle stick injury; Nursing workers are on high risk of exposure of Blood borne germs i.e HIV, HBV and HCV.(Galougahi, 2010)A survey showed that the nurses have high rates of the needle stick injury. (Nsubuga &Jaakkola, 2005)

The total 526 nurses answered the questionnaire related to their daily bases injury by needle and its risk factors. The 57% of the nurses had at least needle stick injury in an year. Only 18% of the nurses had needle stick injury once in lifetime. (Nsubuga&Jaakkola, 2005)

In United States, 78.3% of the nurses had experienced an NI, 27.5% of the nurses reported with the 1 NI in the last year(J. M. Lee, Botteman, Nicklasson, Cobden, &Pashos, 2005)

The most common and life threatening blood-borne pathogen is Hepatitis B which is most common in the overall globe that increases occupational risks to the health care worker, nurses and general public health.(Okeke, Ladep, Agaba, &Malu, 2008)

Needle stick injury not only cause the physical injuries and the emotional effects but also the economic loss. WHO stated that the annual no of NSI in health care department is four injuries per person in the Asia, Africa and western Mediterranean. (Zhang et al., 2015)

These type of accidents occur mostly in medical internship specifically in the training of taking blood samples for test( CBC,LFTS, RFTS) started in 3$^{rd}$ year of the training. The most appropriate ways for trainees to do their practice without fears is Vaccination.(Deisenhammer, Radon, Nowak, & Reichert, 2006) Practice of the

universal precautions in medical training can prevent needle stick injury rate in hospitals and laboratory.(L. K. Lee & Hassim, 2005).

Reported and non reported needle stick injuries are highly common in medical injuries especially in nurses and in dental students. Awareness about the severity of needle stick injury, blood borne pathogen and infections must be provided to medical students, staff and professionals by organizing workshops and seminar to decrease the risk of NS injuries.(Askarian&Malekmakan, 2006)

# Chapter # 2

## Literature Review:

A study was done by Santos, et al in 2018 to determine the potency of needle sticks with safety devices to alleviate 8uestionnai of job-related mishap. Although search for original articles and organized analysis on the main root of Health area, published from 2000 to 2016 in Portuguese, English and Spanish. Most probably eleven articles were considered which enlightens the fact that passive safety inventions helps to overcome the risk of injuries by needle sticks which conduct huge solvency when merged with grounding of workers.(Santos, Rocha, &Marziale, 2018)

This randomized control trails was done by Bijani M, et al J Natl med associated in 2018. Nurses are the most valnurable group that are faced with occupational injuries caused by exposure to needle stick injuries.ln this study a group of nurses were selected in the experimental and control groups.A continuing education program for experimental group was performed. After having this program, the effectiveness was according to Kirkpatrick's model. Data analysis were conducted by different test. The result from the execution of continuing education program showed that through designing training programs and awareness in nursing personnel we can reduce occupation exposure to needle stick injuries.(Bijani, Rostami, Momennasab, &Yektatalab, 2018)

This study was given by Suliman M et.al in 2018. To avoid risks associated with NSI student nurses must understand various aspects of it. Studie's objective was to measure the awareness of NSI in Jordan. 279 student nurses of one private and four government universities were taken and their sample was distributed throughout Jordan. The study was based on online survey of 22 questions which was subdivided in parts : background, knowledge and prevalence. Response rate was 61 % l. Mostly were females of 21 age and fourth yr. Almost 67.1 % of students didn't inform their clinical instructors. There was clear difference between students of different age. The study shows that student nurses of Jordan had a little knowledge of NSI. Moreover protection must be provided to students in their clinical practice.(Suliman et al., 2018)

This study was done by RitujaV.Sardesai,et al in Jan.2018.The aim of this study was to check the awareness regarding health hazards associated with needle stick injuries (NSIs)and hepatitis B vaccination in house care workers(HCWS).This cross sectional study was conducted among 100 HCWs in tertiary care government hospitals.

Questionnaires was used and answers were conducted.Out of 100 HCWs ,45% had history of NSIs during their career .Only 21% of HCWs knew about diseases transmitted by NSIs. The conclusion of this study is that the 9uestionn regarding health hazards due to NSIs was inadequate.(Sardesai, Gaurkar, Sardesai, Sardesai, & AIDS, 2018)

The study was held in 2017 by Ahmed Saleh, et.al. It is very important that the nurses should have the knowledge how to control infections because they have the closest interaction with the patients. They should have the latest information regarding the infections and their precautions. The program "Training for nursing staff related to blood parasites by needle stick injury" was carried in two military hospitals. 90 staff members participated in this study. 50 nurses from The Military General Hospital and 30 from The Military Fever Hospital. Educational need, knowledge questionnaire form, check list, behaviour and participants evaluation form was the basic criteria. As such no change occurs through the study. Therefore, training related to blood parasites by needle sick injury must be provided more oftenly, so that the nursing staff can improve them according to the study tools.(SALEH, ADAM, IBRAHIM, & MORSY, 2017)

This survey was done by Williams GJ, et al in 2016.Suture needle handling methods vary extensively between units. Securing the needle tip by locking it against the shaft of the needle holder prior to transfer has been suggested to improve safety, although this is not evidence based. The method used in the survey was that the Scrub nurses from different universities selected their preferred method (protected, unprotected or either), and indicated previous NSIs with either technique. Multinomial regression analysis and $\chi$ (2) with Yates correction were used to assess associations. One hundred and seven scrub nurses from 12 specialities were interviewed. There was no significant association between needle-mounting preference and years of scrub experience or speciality. Significant differences between preferences and four of the six hospitals were observed.After all we conclude that protected needle transfer seems safer than the unprotected method.(Williams, Nicolaou, Athanasiou, & Coleman, 2016)

This study was done by Prasuna J, et al in 2015.The present investigation demonstrated a high rate of needle stick injuries among nursing students with increasingly under-detailed cases and subjects didn't know about post presentation measures. Needle stick injury turned into a significant issue and the majority of the

examination centers around Nurses, Doctors and other health care workers and yet nursing students in clinical obligations are at high risk. The present examination is planned to quantify the event of needle stick injury along with post introduction measures and assessment of the information in regards to needle stick injury among nursing student. Students were addressed in regards to their event to Needle Stick Injury all through their clinical preparation and measures taken after the presentation.(Prasuna et al., 2015)

This randomized control was done by Singh B,et al in 2015. The purpose of this study was to evaluate the knowledge and practice approaches among health care workers regarding needle stick injuries.For this purpose a survey was conducted containing 25 questionnaire at tertiary centre of Nepal.A total of 165 experienced health care workers were included in this study. Questionnaire included view of prevalence and knowledge on needle stick injury ,hepatitis B immunization and post exposure prophylaxis for HIV. Out of 1000 health care workers, 703 showed occurrence of needle stick injury. Seventy-nine participants experienced the injury more than one time in their career. The use of needle recapping is still practiced and 80% participants use single-handed techniques. Vaccination against hepatitis B virus was not completed by 31% health workers. And 46% participants showed inadequate knowledge about post exposure prophylaxis for HIV. It was thus concluded that high occurrence of needle stick injury was seen with a high rate of ignorance.(Singh, Paudel, &Kc, 2015)

This study was done by Stimpfel AW et al in 2015 to designate recently licensed nurses shift work mannerism and the link between shift type and timing aspects and nurse injury. 1744 nurses were selected from 34 states. As a result, illustrative practice were evaluated to determine the relationship between shift order and scheduling trait and nurse injury. Majority of nurses working weekly extra time leads to risk of needle sticks and those doing night shift results in strain and sprain deformities. It was concluded that too much shift work results in increased injury risk in newly registered nurses.(Stimpfel, Brewer, &Kovner, 2015)

This study was done by Liping He, et al on October 2014 to January 2015. It objective is providing knowledge of HIV /AIDS (AquiredImmuno Deficiency Syndrome) among nursing personnel for safety. Approximately in 35 new cases of HIV about 1000 serious infections were transmitted to the health care staff in China. HIV

prevalence was increasing among nursing staff due to contaminated needle-stick injury. SO, to asses the effect of integrated interventions among nursing staff knowledge about reducing the risk of occupational acquired HIV infection was provided. 300 questionnaires were collected from nursing staff at hospital in China. After, three months of occupational safety 234 participants of nursing staff were examined. In the past, the risk of occupational acquired HIV were 94 % but from knowledge of occupational safety it was reduced to 24%.(He et al., 2016)

This study was done by Bhargava A, et al. in 2013. The study aims to assess healthcare workers' needle-stick injury knowledge, attitudes and practices.A cross-sectional study was conducted in a 600-bedded hospital throughout six months. The data were collected using an anonymous, self-reporting questionnaire.We find that there is significant difference in the mean knowledge, attitude and practice scores among healthcare workers.We also conclude that healthcare workers, who had better practice scores, had suffered fewer NSIs. Since this study is a cross-sectional, the population's NSI incidence could not be calculated.(Bhargava et al., 2013)

This comparative study was done by MunishAshat et al in 2013 among health care workers (HCWs) in North India. The objective of this study was to investigate the occurrence of needle stick injuries in these HCWs. The study group was taken from two government hospitals which consisted of 107 HCWs. These included doctors, nurses and paramedics, each of which were enquired about their contact with needle stick injuries in the past 6 months. After the enquiry, it was found that almost two-thirds of the HCWs had a recent exposure to needle stick injuries, most of which occurred during emergency care. Almost 48% of HCWs reported following necessary precautions and only 10% of the exposed HCWs underwent HIV testing.(Ashat, Bhatia, Puri, Thakare, &Koushal, 2011)

The 11uestionna controlled trial study (RCT) was done by Kumar A, et al.in 2012,to assess the knowledge and practice gaps about Needle Stick Injuries (NSIs) and their associated factors among Health Care Workers' (HCWs).A cross-sectional study was conducted in two tertiary care teaching hospitals in Karachi, Pakistan.HCWs had misconception about the transmission of malaria and tuberculosis by NSIs. Large numbers of study participants were not wearing personal protective equipment (PPE) ,and do not have sharp containers. Due to lack of knowledge, poor practices were reported in this study. Proper training are required to protect the health Care workers and patients.(Kumar, Khuwaja, &Khuwaja, 2012)

This study was done by IramManzoor et al ,in 2010 on nurses. The point of this was to determine the frequency and factors of needle stick injuries(NSI) in nurses and safety measures taken by nurses after NSI. In order to proceed the study, 77 nurses were asked some questions related to NSI and some safety measures about NSI. Results revealed that many nurses were affected by needle stick injuries and they also do not have adequate knowledge about safety measures against these injuries. These result concluded that needle stick injuries are occupational health hazards so that there should be proper screening of nurses after NSI and nurses should be taught some safety measures against these injuries.(Manzoor et al., 2010)

A randomized control trial was done by Shiva F, et al in 2011,Three hundred fifty five health personnel were enrolled. Of these 49.3% had incurred needle stick injury at least once 36.7% doctors and 54.9% nurses. Correct answer from doctors and nurses were 45.6% vs 59.3% about needle separation and 41.9% vs 81.2% .Doctors 11.1% and Nurses 37.7% believed injections to be better than oral medication while 68.9% of doctors and 46.6% of nurses believed that parents preferred injections to oral medications . Only 26.6% knew about auto disable syringes. Vaccinated against Hepatitis B was present in 92.7%. Doctors 58.7% and 55.3% nurses knew HBV to be the most common needle transmitted infection. Needle stick injuries are common in health personnel which are immunized against Hepatitis B.(Shiva, Sanaei, Shamshiri, &Ghotbi, 2011)

This study was done by Afia Zafar, et al in 2008 to evaluate the knowledge, attitude and practices among health care providers related to needle stick injuries, 80 people including 29 doctors were selected for this study. Among them 45% people had needle stick injury in past and they were mostly doctors. The main reason was stress or careless attitude and about two- third of participants were familiar with prevention protocols. So it was concluded that despite knowing, risks frequency of needle stick injury was higher among doctors. Mandatory reporting, proper follow-up and constant reinforcement are recommended to health care workers to reduce the rate of injury.(Madhavan et al., 2019)

This survey was conducted by S. Sharma(e.t),it was conduct in tertiary care cardiac centre About 20 different dieases can spread due to needle stick injuries i.e HIV , HCV etc. This survey includes doctors and other paramedics. This survey shows that 94.7% of staff i.e age group 20-30 know about the needle stick injuries and 91.4% know about procedure to report this ,but about 50% correctly 12uesti about the related

dieases .So it was concluded that their are some knowledge gaps about needle stick injuries which can be filled by extensive education about needle stick injuries(Arora, Gupta, & Sharma, 2010)

Veronesi L, et al, on the nursing school students to study the prevention and epidemiology of needle stick injuries, did this randomized control trial. A semi structured questionnaire was proposed . Most of students got atleast one injury. This was during drug preparation, disposing of sharp devices, recapping of needles and blood sampling etc. While people with training in advance on careful procedures had less needle stick injuries. 51.8% students declared they have done post exposure prophylaxis. The results of the study show high percentage of injuries in nursing students, so there is a need of carefulness in methods of targeted training.(Veronesi et al., 2018)

The randomized control trial was done by Prabhu A et al, The objective of this study was to access the prevalence of needle stick injury (NSI) , awareness and attitude of dental nurses towards needle safety. Responses were gathered from 102 dental nurses via 13uestionnaire that included demographic data, the prevalence of NSI in the past 6 months ,their causes, responses of nurses, awareness of injection, altogether, 33.3% (n=34 out of 102)responses has sustained at least one NSI in 6 months. The knowledge of nurses, has not sustained NSI was better than nuses who experience NSI in past 6 months. He also founded in another research that 30.39% of the dental nurses dispose needle in a puncture proof sealed box and 2.94% dispose needle using the needle cutter. Overall results were very poor of needle safety among dental nurses. (Prabhu et al., 2014)

Another study was done by Zaid A Memish et al.jepidemoil in 2013 September.

To study different risk factor of needle stick injury among health workers of teritary care hospital (saudi Arabia). Retrospective study involving all needle stick cases the sharp object injury among help worker through using epinet access UK version 1.3 in KSMC in period January 2000- December 2011. Distribution of needle stick and sharp object injuries according to their location of occurrence clarified that patients room was the most common place of occurrence NSSIs 150/477, followed by emergency department 82/477 the intensive care unit 70/477. Prevention should be based on different working line including immunization education of health care worker engineers control measures this represents a major challenge to health care worker.(Memish et al., 2013)

A study was done by Jhon T Martin et al in 2013 Aug. Invertebral disc degeneration is implicated as a cause of lower back pain. To study this needle puncture injuries were created in the caudal invertebral discs of mice to induce disc degeneration. Two needle sizes (29 & 26 gauge)were used to determine injury size dependence. Compressive stiffness (60%), and early damping stiffness (84%) decreased immediately after injury with the large needle (26G). The structural and compositional changes took place over time but these mechanical properties did not change. After 8 weeks disc height decreased (37)%,nucleus pulposes (NP) glycosaminoglycan content decreased (41%),and NP collagen content increased (45%). The small needle size did not initiate degenerative changes in structure and composition. As a result it was found that injection of therapeutics into the NP with a minimal size needle may limit damage due to insertion. This indicates that the mouse caudal disc model can be a powerful tool for investigating disc degeneration and therapy(Martin et al., 2013)

A cross sectional study was done by Aradhanabhargava in the year 2012 to assess the healthcare workers needle stick injury (NSI) knowledge,attitudes and practises.This study was done in 600 bedded hospital throughout 6 months .Participants were healthworkers whose knowledge attitude and practises regarding NSI was assessed. Scores were better for Doctors and nurses, practise scores were better for technical staff. The workers who had good practise score had fewer NSI. This study analysis healthcare workers NSI knowledge, attitude practises and assesses their correlation with NSI incident.(Bhargava et al., 2013)

A study was done by Aeeza Malik et al in year 2012. It was carried out in oral surgery department ( Dr. Ishrat - Ul - Ebad khan Institute of oral health sciences, Karachi). It is the foremost allied health concern. Its a rising bio hazard but its incidence can be reduced if a dental practitioner is well aware of its measures. This study was intended to assess the knowledge, attitude and practices among dental practitioner regarding Needle-stick injuries. Different statistics and tests were applied. All 100 practitioners agreed to participate.prevelance observed was 30%. 74% of participants knew about universal guidelines, 88% about recapping of needles, 53% about less safety measures. Most of the participants knew about injuries but there was lack of practice, thus, the were at high risk of getting needle-injuries. 30% of

respondents experienced this but only 28% were reported.(Malik, Shaukat, & Qureshi, 2012)

Another study was done by M B O'Connor et al.lr J Med Sci.2011 Jun.NCHDs are likely to having are large nmber of blood brone infections Non consultants doctors are having infections became the cause of spread of needle stick infection.A survey was held on 185 NCHDs that were working in clinical sertings and seven teching hospital in ireland .And thananalysed data was obtained by using excel spreadsheet.In the cross sectional self administered the result of reponse rate of 85 4% (158/185) was obtained. It was found that needle stick injuries are found more in surgical NCHDs are compare to medical NCHDs Usage of grove was found worryingly poor.safety measurements needs to be increase and adressed properly to protect themselves from dredful infection like HIV and HI.

A study was done by Chun-lan Shi et al. Zhonghua Lao Dong Wei Sheng Zhi Ye Bing ZaZhi. 2011 Dec.To understand the prevalence of hospital healthcare workers (HCWs) with needle-stick and other sharps injuries retrospective investigation was conducted with questionnaires for needle-stick and other sharps injuries.The number of needle-stick and other sharps injuries for each person was 3.58 and the incidence of needle-stick and other sharps injuries was 78.85 %. Needle-stick and other sharps injuries were mainly caused by ampoules, winged steel needle and disposable syringes.Special measurements should be taken for preventing the needle-stick and other sharps injuries.(Shi, Zhang, & Xie, 2011)

A study was done by Farideh Shiva at el in year 2011 on needle-stick injuries in paediatric health personnel of 5 university hospitals in Tehran.This study consists of variable comparison between doctors and nurses,it was performed on three-hundred fifty-five health personnel out of which 49.3% had incurred needle stick injury at least once, 36.7% doctors and 54.9% nurses .According to doctors and nurses 45.6% vs. 59.3% about needle separation and 41.9% vs. 81.2% about recapping. Doctors 11.1% and Nurses 37.7% believed injections to be better than oral medication for children however, 68.9% of doctors and 46.6% of nurses believed that parents preferred injections to oral medicines for their children.Doctors 58.7% and 55.3% nurses knew HBV to be the most common needle transmitted infection.It was concluded that needle-stick injuries are common among Paediatric health care

personnel and their knowledge about prevention is unsatisfactory.(Shiva, Sanaei, Shamshiri, & Ghotbi, 2011)

A study was done by MunishAshat et al in the year 2011 to find out why needle stick injuries occur among HCWs, the factors, and the conditions under which these are caused. And also to find out the measures to prevent these by improving knowledge, attitude, and practice. This was conducted in tow government hospitals of Chandigarh It comprised 107 HCWs. Ratio, proportion and other basics of data interpretation were the tools used. The exposure to needle prick injuries in last 6 months of patients management was focused, and actions were taken. 68.2% participants were reported to have the prevalence of needle stick injury and exposure to blood. Heavy patient load was 42.5%. 30.1% maximum accidents occured. Cleaning with spirit was 46.3%. 47.7% admitted universal precautions. Only 13.7% persons had HIV testing. There was very less knowledge regarding post-exposure prophylaxis, and two-thirds of the HCWs had needle stick injuries.(Ashat, Bhatia, Puri, Thakare, & Koushal, 2011)

A study was done by J Pak Med Assoc et al in year 2010 to know the Knowledge, attitude and practices of medical students regarding needle stick injuries. This questionnaire based was done in private and govt. Medical university in Karachi. The knowledge, attitude and practice of students were measured. In this SPSS 19 was used to analyze data . There were total 413 student in which 49.9% were from private college and 50.1% were from govt. College. It was noticed that students from private medical college had better knowledge regarding hand hygiene, needlestick injuries and surgical scrubbing as compared to the students from govt. colleges. So, their is need of improvement in practice and knowledge given to Medical students .(Saleem, Khalid, Ishaque, & Zafar, 2010)

A cross sectional study was done by S Sharma et al in 2010 to asses the knowledge and attitude of health workers about NSSIs (needle-stick and sharp injuries) This cross sectional survey conducting in a tertiary care cardiac centre. The participants were health care workers from different areas of hospital . This convey was conducted in institute using a self-administered validated questionnaire. The participants consisted of a total of 190 HCWs . Results showed maximum participants were in age group of 20-years. 94.7% were aware about standard precautions. 91.5% knew about the procedures for reporting of NSSIs. Only 50.2% HCWs gave correct answers

regarding disease transmission through Needle-stick and sharp injury. The prevalence of NSSIs was highest among nurses(38.4%), and needle on disposable syringe(76.9%) was most common source of NSSIs. The survey revealed few gaps like risks associated with needle-stick injuries and use preventive measures . These gaps can be addressed by extensive education. As nurses were the most affected victims for the NSSIs(Arora, Gupta, & Sharma, 2010)

This randomized control trial was done by SumathiMuralidhar et al in the year 2010. The risk of injuries via needle sticks are higher than estimated and thus pose a significantly higher risk. The objective of this search was to find out the rate of occurrence of NSI among health care worker, moreover it was also done to find out in depth about the causes and preventions of needle stick injuries. This search was done by an anonymous questioner in a tertiary hospital of New Delhi, India. A total of 428 HCW's were interviewed to collect sufficient data. The data was based to figure out the predictive causes of NSI. The data yielded that most injuries were caused due to blood withdrawal 55%, second to that is suturing 20.3% and then comes vaccination 11.7%. Moreover, quite a lot of health workers were reusing needles (66.3%) and only some 11.4% used to discard the needles after bending them. This research also showed that 40% HCW's weren't aware of the PEP services, and 75% didn't seek out the service even if they were aware of its presence. Hence mostly NSI prevailed due to lack of attention to their own circumstances and ignorance, and the second reason was the lack of proper education of the services the hospital was providing. Thus better awareness of NSI, their prevention and hospital services would reduce the problem by quite a high percentage.(Muralidhar, Kumar Singh, Jain, Malhotra, & Bala, 2010)

A study was done by W J C Thomas et al in year 2009.To assess the incidence and reporting rates of needle stick injury amongst UK surgeons.Needle stick injuries are wounds caused by needle that accidentally puncture the skin.Needle stick injuries are a hazard for people who worked with the syringes or other needle equipment.We identified all surgeons and registered themselves in a large 687- bed district general hospital serving a population of 550,000 in UK .We designed a 30- second session to check the percentage of people who have the needle stick injuries during doing the work.Out of 98 surgeons in the hospital, 77% respond to the questionnare and 44% anonymously admitted to having needle stick injury. Only 9 % who sustained needle

stick injyury. Twenty three surgeons give the first aid. Seven surgeons ignored it and nine who regarded it as ' user friendly ' . Needle stick injury is still very common during doing the work in hospitals or having the surguries of critical patients and by giving the vaccination to patients(Thomas & Murray, 2009).

Another study was done by HA SALAM et al in year 2009 . It asses the prevalence and attitude towards needle stick injuries by Nigerian gynaecologicalsurgeons.A cross sectional study was conducted at 40 annual general meeting and scientific conference of SOGON held in ibada, southeast from 23rd to 26th of November in 2005.Sixty five (90.3%) respondents had experienced needle stick injuries in workplace. This occur in majority of cases ( 86.2%) during suturing. Only 9.2% of these experiences needle stick injury took the correct or appropriate action. Only 26 ( 37.1%) of 70 respondents indicated the presence of needle stick policy in their centers. Majority are either unaware or don't take appropriate actions after exposure to hardous body fluids from needle stick injuries through first aid step. All health institution should have a working needle policy and workers are continually educated on it(Efetie& Salami, 2009).

A study was done by S T Jayanth. et al. in the year 2009 to reveal the needle stick injuries in a tertiary care hospital. The study was carried out on 296 health care workers which depicted that 28.4% nurses, 9.1% nursing interns, 21.6% cleaning staff, 21.6% doctors, 15.9% medical interns and 8.1% technicians were suffering from NSIs. The study concluded that better education with enhanced prevention and reporting strategies are required for safety of health care workers. The study further concluded that proper disposal of needles to be emphasized to ensure HCWs well-being(Jayanth, Kirupakaran, Brahmadathan, Gnanaraj, & Kang, 2009).

This study was done by Josephine Chow et al. J Ren Care in year 2009 to discuss the major occupational health and safety issue, Needle Stick injury (NSI) faced by healthcare professionals. The administration of erythropoiesis-stimulating agents (ESA) in haemodialysis patients is major cause of injections. Its purpose was to familiarise nursing staff with needle-free administration of an ESA in haemodialysis patients. Epoetin beta comes with a detached needle and was administered to 10 haemodialysis patients. An audit was conductedand a prospective assessment for eight

weeks to assess. There were no reports of NSI in the needle-free group and haemoglobin level was maintained. And the conclusion is , the commercial presentation of epoetin beta with the detached needle presents an opportunity to reduce the potential risk of NSI in haemodialysis units.(Chow, Rayment, Wong, Jefferys, & Suranyi, 2009)

A study was done by Nanako Mizuta et al in the year 2008 to show how incidence of a needle stick injury occurs in a needleless intravenous system.Majority of studies indicates that it occurs when standard precautions are not followed by the health care workers as they pick up the left gloves after use from operating rooms ,causes needle stick injury to the health care workers.Though the needle is designed as a needleless intravenous system but still there is a risk of stick injury.It also happens when a doctor does not follow precautionary measurements and leaves the contaminated needles on the floor instead of discarding it in a proper way.We can reduce the hazard of needle stick injury occurring in a needleless intravenous system by quickly disposing the needle before use, wash needle sticks with water and soap, flush splashes to nose and mouth with water immediately.
(Mizuta & Kurahashi, 2008)



Another study was done by fredrich M nsubuga at el in the year 2005 on needle stick injuries among nurses in sub saharanafrica .HiV /aids and other blood borne infections ,few studies have investigated needle stick injuries in africa . And conducted a cross sectional study of needle stick injuries among nurse . according to their work experience,work load ,risk behavior .Total 526 nurse and midwives involved in the direct day to day management of patient .57 percent of the nurse and midwives had experienced at least one needle stick injury in the last year .18 percent had not experienced any such injury . important risk factors included working for more than 40 h/week (or 1.90,95 Percent Cl 1.20 -3.31. ) and not using gloves when handling needles (OR 1.91 ,95 Percent Cl 1.10 -3.32 ) .The rate of needle stick injury was 4.2 per person year .The strongest predictor for needle stick injury was lack of training and related to long working hours and experience(Nsubuga& Jaakkola, 2005)
.

A study was done by Wittman et al .j ren care in Apr-jun2007.

To determine the factors contributing to needle-stick injury among health car workers of dialysis units. Data were obtained by a set of questions from staff of 4 hemodialysis units between October and December 2011. If any injury was found, vaccination status of staff, and treatment were obtained.

The study population included 38 doctors, 42 nurses, and 14 dialysis technicians. The most common activity leading to NSI was recapping of needles, improper disposal of needles, and setting of drips. NSI is common among hemodialysis staff and is under-reported. Many NSIs can be prevented by following of universal precautions as well as education of staff on safety methods.(Wittmann, Hofmann, & Kralj, 2007)

# Chapter # 3

## Problem statement:

Needle stick injuries are highly prevalent among health care professional but there are very few studies which can explain its prevalence in nurses. Purpose of this study is to find association between nurses' knowledge and practices in occurrence of needle stick injury.

## Objective:

To assess the knowledge and practices of needle stick injury among nurses.

## OPERATIONAL DEFINATIONS



**Needle stick Injury:**

NSI is the wound or cut caused by the needles that unintentionally tear/puncture the skin that may results in exposure to contaminated blood and the body fluids.(Laishram et al., 2013)

## Materials & Methods

**Study Design:**

Design was Cross Sectional.

**Place of Study**

Bahawal Victoria hospital Bahawalpur

**Duration**

In almost six months, after the synopsis approval.

**Study Population**

Nurses practicing in hospital.

**Sample Size**

$$n = \frac{Z^2_{1-\frac{\alpha}{2}} P(1-P)}{d^2}$$ (WHO CALCULATOR)

CI (1-α ) = 95%

P = 46%

d = 10%

n=360

**Sampling Technique**

Simple random sampling technique was used.

**Sample Selection**

- **Inclusion Criteria**

The Nurses were included according to the following criteria:-

- Subjects with age 25-65 years
- Nurses having prior experience in hospital

- **Exclusion Criteria**

- Students and trainees who were not proper nurses yet

**Study Variables**

The T test, and correlation test were used to assess the data. The significance (Probability –p) was selected as 0.05.

**Ethical Consideration**

- The research committee of Afro Asian University approved the synopsis and allowed to work on the project. A summary of the thesis was written on every questionnaire for the information of the patients. Verbal consents were taken before the involvement of every patient and it was making sure that all the information should remain confidential. Rights and dignity of all individuals will be the prior consideration
- Research process will not cause any harmful to the subjects.
- Accurate information to patients will be provided, and written consent will be taken from the subjects.
- Subject's details and data confidentiality will be maintained at every level.

Ethical clearance will be taken from the ethical committee of the university.

**DATA COLLECTION PROCEDURE:**

Participant consent forms will be signed by the subject. A quantitative instrumental questionnaire(Zia, Afzal, Sarwar, Waqas, &Gilani, 2017) will be used to collect the data about knowledge and practices of needle stick injury among nurses.

**Variable:**

Following variables will be compared in data analysis

1. Knowledge and practices
2. Demographic Variables will be compared to estimate the risk group.

# DATA ANAYLYSIS PLAN:

- Data analysis was carried with the help of SPSS software
- Descriptive statistics (e.g. demographics) was explained.
- Chi-square test was used to find association between knowledge and practices in occurrence of needle stick injury among nurses.

# Chapter # 4

## RESULTS

**Table # 1:**

**Frequency of age group for nurses:**

| | | Frequency | Percent |
|---|---|---|---|
| **Valid** | 20-25 Year | 17 | 4.7 |
| | 26-30 Year | 194 | 53.9 |
| | 31-35 Year | 83 | 23.1 |
| | 36-40 Year | 66 | 18.3 |
| | Total | 360 | 100.0 |

**53.9% of population falls under 26-30 Year.**

**Figure # 1:**

**Bar chart for age group of nurses:**

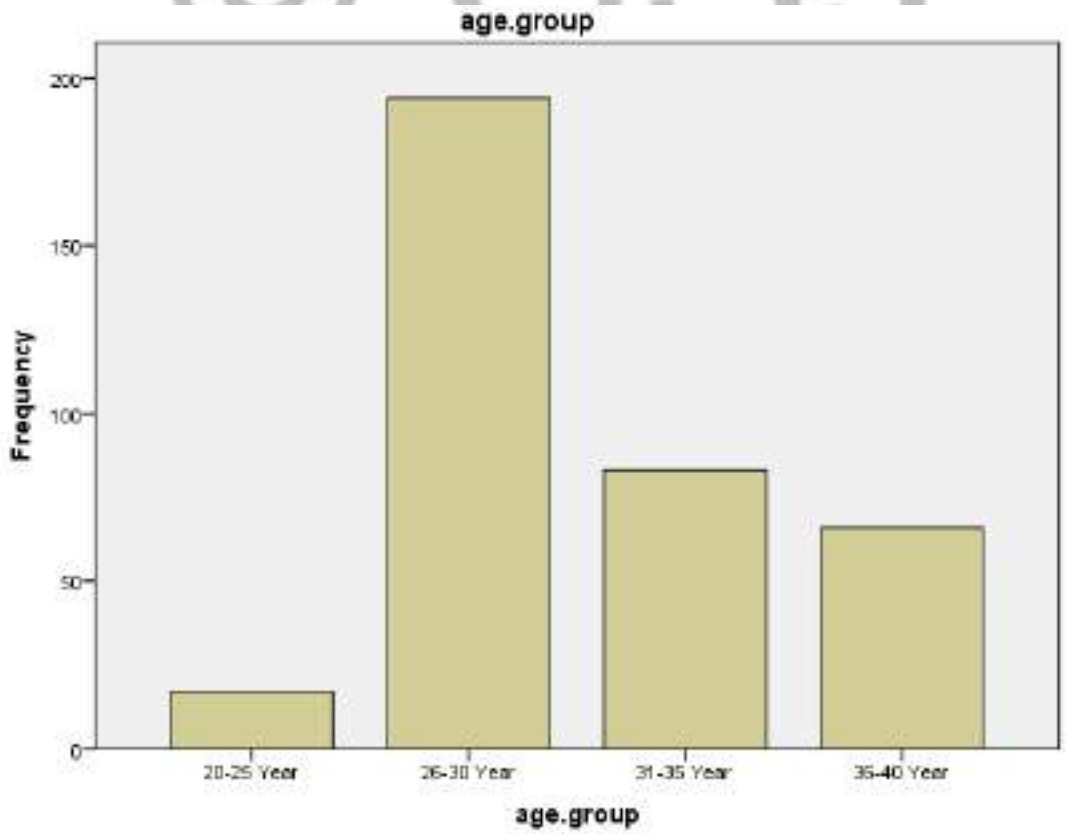


**Table # 2:**

**Frequency of Gender:**

| Gender | | | | | |
|---|---|---|---|---|---|
| | | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
| **Valid** | FEMALE | 360 | 100.0 | 100.0 | 100.0 |

**Only female nurses are included in study.**

**Figure # 2:**

**Frequency of Nurses Stay in organization**

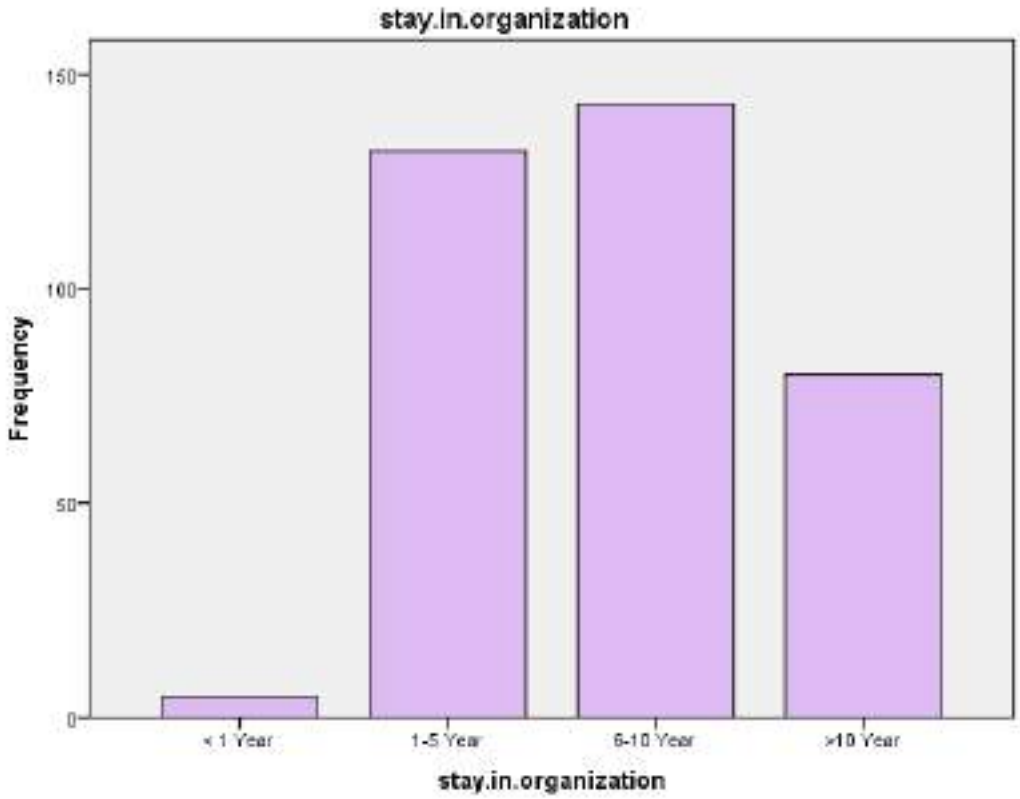


**Table # 3:**

| Stay in organization | Frequency | Percent |
|---|---|---|
| < 1 Year | 5 | 1.4 |
| 1-5 Year | 132 | 36.7 |
| 6-10 Year | 143 | 39.7 |
| >10 Year | 80 | 22.2 |
| Total | 360 | 100.0 |

**22.2% of nurses had experience of more than 10 years.**

**Table # 4:**

**Prevalence of NDI:**

| Knowledge | Variable | Frequency | Percent |
|---|---|---|---|
| Needle stick injury is a percutaneous wound? | Good Knowledge | 276 | 76.7 |
| | Poor Knowledge | 77 | 21.4 |
| | No Knowledge | 7 | 1.9 |
| Needle stick injury is the risk of transmission of blood-borne disease | Good Knowledge | 133 | 36.9 |
| | Poor Knowledge | 208 | 57.8 |
| | No Knowledge | 18 | 5.0 |
| Recapping needle prevents risk of needle stick injuries | Good Knowledge | 214 | 59.4 |
| | Poor Knowledge | 115 | 31.9 |
| | No Knowledge | 31 | 8.6 |
| Needle sticks injury cause transmission of pathogens. | Good Knowledge | 170 | 47.2 |
| | Poor Knowledge | 173 | 48.1 |
| | No Knowledge | 17 | 4.7 |
| It is necessary to report after the needlw stick injury | Good Knowledge | 209 | 58.1 |
| | Poor Knowledge | 136 | 37.8 |
| | No Knowledge | 15 | 4.2 |
| Bleeding should be encouraged at the site of injury. | Good Knowledge | 221 | 61.4 |
| | Poor Knowledge | 107 | 29.7 |
| | No Knowledge | 31 | 8.6 |
| Pep should be initiated within 1 hour of exposure of needle stick | Good Knowledge | 184 | 51.1 |
| | Poor Knowledge | 156 | 43.3 |

| | | | |
|---|---|---|---|
| injury | No Knowledge | 20 | 5.6 |
| Affected area should be washed with soap and water | Good Knowledge | 199 | 55.3 |
| | Poor Knowledge | 122 | 33.9 |
| | No Knowledge | 39 | 10.8 |
| Does the person exposed to needle stick injury need tetanus vaccination? | Good Knowledge | 202 | 56.1 |
| | Poor Knowledge | 126 | 35.0 |
| | No Knowledge | 32 | 8.9 |
| Needle should be recapped by using one hand to bold the cap and other to hold the needle. | Good Knowledge | 160 | 44.4 |
| | Poor Knowledge | 146 | 40.6 |
| | No Knowledge | 54 | 15.0 |
| Is there is the risk of HIV transmission during needle stick injury? | Good Knowledge | 172 | 47.8 |
| | Poor Knowledge | 130 | 36.1 |
| | No Knowledge | 58 | 16.1 |
| Is there is availability of HCV vaccine after needle stick injury? | Good Knowledge | 160 | 44.4 |
| | Poor Knowledge | 150 | 41.7 |
| | No Knowledge | 50 | 13.9 |



It suggested that 49.1% of nurses have good regarding needle stick injury.

**Table # 5:**

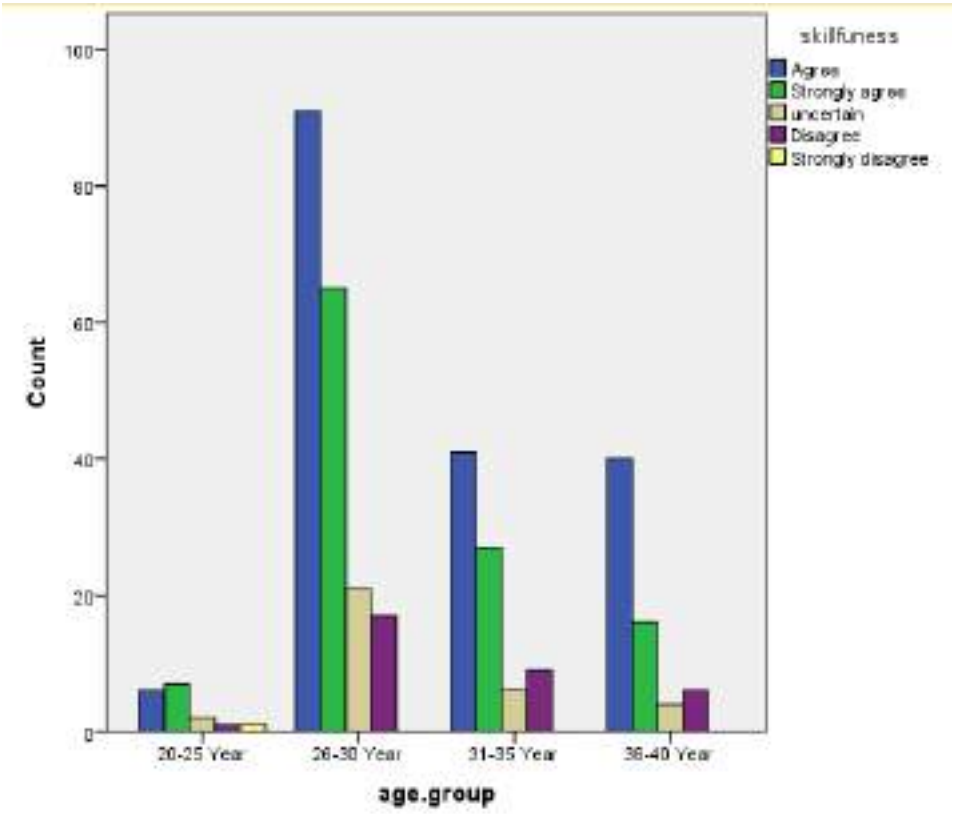
| **Nurse.chance** | | | |
|---|---|---|---|
| **Knowledge** | **Variable** | **Frequency** | **Percent** |
| Every nurse has chance to get needle stick injury | Agree | 291 | 80.8 |
| | Strongly agree | 42 | 11.7 |
| | uncertain | 13 | 3.6 |
| | Disagree | 14 | 3.9 |
| | Total | 360 | 100.0 |
| Needle stick injuries are unavoidable things for nurses | Agree | 188 | 52.2 |
| | Strongly agree | 63 | 17.5 |
| | uncertain | 30 | 8.3 |
| | Disagree | 65 | 18.1 |
| | Strongly disagree | 13 | 3.6 |

| | | | |
|---|---|---|---|
| Increase workload can lead to needle stick injury | Agree | 89 | 24.7 |
| | Strongly agree | 89 | 24.7 |
| | uncertain | 45 | 12.5 |
| | Disagree | 120 | 33.3 |
| | Strongly disagree | 16 | 4.4 |
| If nurses get infected with HIV infection, they should resign from their profession | Agree | 181 | 50.3 |
| | Strongly agree | 42 | 11.7 |
| | uncertain | 31 | 8.6 |
| | Disagree | 104 | 28.9 |
| | Strongly disagree | 2 | .6 |
| The standard precautions to handle the sharp objects must always follow as improper handling can lead to get infection | Agree | 189 | 52.5 |
| | Strongly agree | 63 | 17.5 |
| | uncertain | 30 | 8.3 |
| | Disagree | 65 | 18.1 |
| | Strongly disagree | 13 | 3.6 |
| The infection transmitted from needle stick injuries are life threatening | Agree | 89 | 24.7 |
| | Strongly agree | 89 | 24.7 |
| | uncertain | 46 | 12.8 |
| | Disagree | 120 | 33.3 |
| | Strongly disagree | 16 | 4.4 |
| Although there is a risk of infection, confident and skillfulness can prevent injury | Agree | 178 | 49.4 |
| | Strongly agree | 115 | 31.9 |
| | uncertain | 33 | 9.2 |
| | Disagree | 33 | 9.2 |
| | Strongly disagree | 1 | .3 |
| We haven't learned about standard precaution for needle stick injury | Agree | 197 | 54.7 |
| | Strongly agree | 96 | 26.7 |
| | uncertain | 35 | 9.7 |
| | Disagree | 32 | 8.9 |
| Unavailability of protective equipment can predispose a person to get needle stick injuries. | Agree | 213 | 59.2 |
| | Strongly agree | 94 | 26.1 |
| | uncertain | 22 | 6.1 |

| | | | |
|---|---|---|---|
| | Disagree | 30 | 8.3 |
| | Strongly disagree | 1 | .3 |
| Handle needle without wearing glove is better than wearing glove. | Agree | 136 | 37.8 |
| | Strongly agree | 88 | 24.4 |
| | uncertain | 47 | 13.1 |
| | Disagree | 86 | 23.9 |
| | Strongly disagree | 3 | .8 |
| Reporting after needle stick injury is not much useful. | Agree | 190 | 52.8 |
| | Strongly agree | 95 | 26.4 |
| | uncertain | 27 | 7.5 |
| | Disagree | 39 | 10.8 |
| | Strongly disagree | 9 | 2.5 |
| Every health care worker should be immunized with hepatitis B vaccine | Agree | 125 | 34.7 |
| | Strongly agree | 87 | 24.2 |
| | uncertain | 30 | 8.3 |
| | Disagree | 93 | 25.8 |
| | Strongly disagree | 25 | 6.9 |
| Health education for universal precaution on NSIs to the students and health care workers can reduce the prevalence of needle stick injuries among them | Agree | 105 | 29.2 |
| | Strongly agree | 105 | 29.2 |
| | uncertain | 22 | 6.1 |
| | Disagree | 47 | 13.1 |
| | Strongly disagree | 81 | 22.5 |

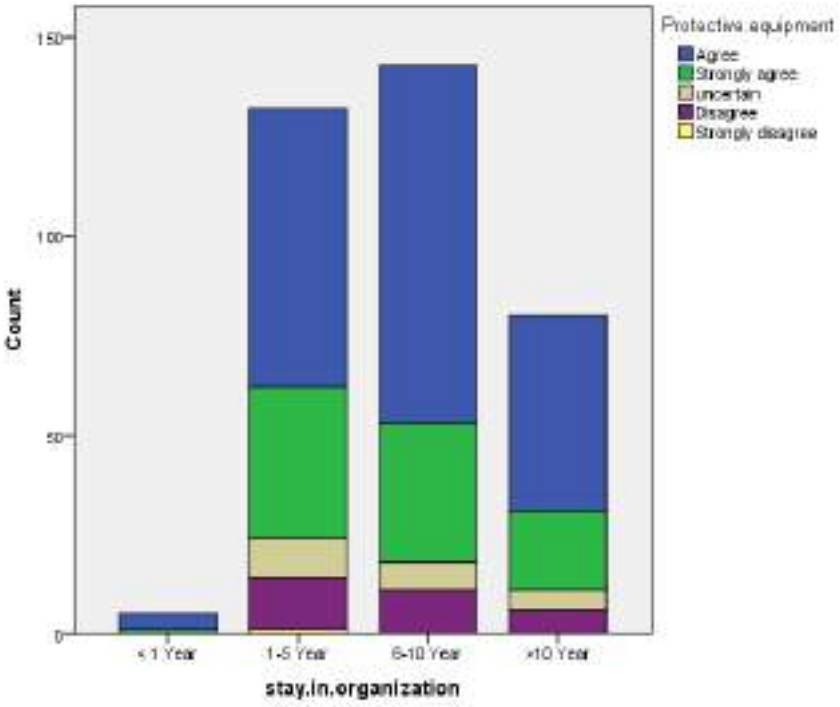
It suggested that 46.8% of nurses agrees with practice regarding needle stick injury.

**Figure # 3:**



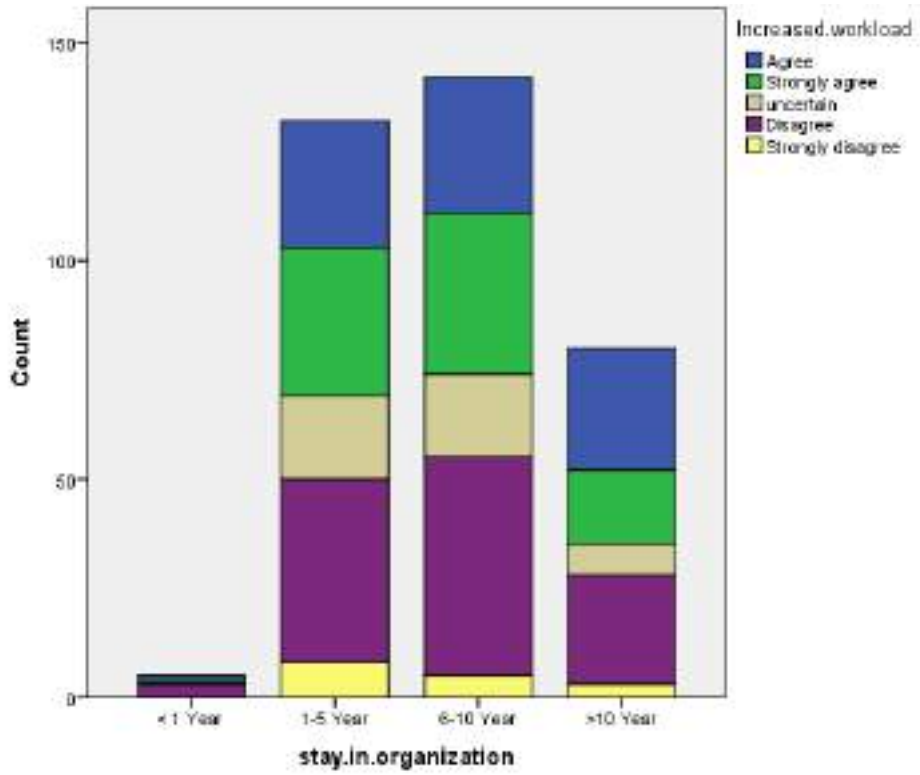

20-25 years of age group had least number of people who disagree for skillfulness.

**Figure # 4:**




Protective equipment shows highest number of people who "agree" for stay in organization around 6-10 years.

**Figure # 5:**




Increased workload contributes to "disagree" the most under 6-10 years of stay in organization.



**Table # 6:**

| Age Group | Knowledge | P.Value |
|---|---|---|
| | Needle stick injury is a percutaneous wound? | 0.681 |
| | Needle stick injury is the risk of transmission of blood-borne disease | 0.02 |
| | Recapping needle prevents risk of needle stick injuries | 0.307 |
| | Needle sticks injury cause transmission of pathogens. | .000 |
| | It is necessary to report after the needle stick injury | 0.138 |
| | Bleeding should be encouraged at the site of injury. | 0.053 |
| | Pep should be initiated within 1 hour of exposure of needle stick injury | 0.072 |
| | Affected area should be washed with soap and water | 0.106 |
| | Does the person exposed to needle stick injury need tetanus vaccination? | 0.276 |

| | | |
|---|---|---|
| | Needle should be recapped by using one hand to bold the cap and other to hold the needle. | 0.247 |
| | Is there is the risk of HIV transmission during needle stick injury? | 0.028 |
| | Is there is availability of HCV vaccine after needle stick injury? | 0.201 |
| | Improved engineering control devices reduce the risk of needle stick injury. | 0.031 |

**Table # 7:**

| **Stay in Organization** | **Knowledge** | **P.Value** |
|---|---|---|
| | Needle stick injury is a percutaneous wound? | 0.681 |
| | Needle stick injury is the risk of transmission of blood-borne disease | 0.02 |
| | Recapping needle prevents risk of needle stick injuries | 0.307 |
| | Needle sticks injury cause transmission of pathogens. | .000 |
| | It is necessary to report after the needle stick injury | 0.138 |
| | Bleeding should be encouraged at the site of injury. | 0.053 |
| | Pep should be initiated within 1 hour of exposure of needle stick injury | 0.072 |
| | Affected area should be washed with soap and water | 0.106 |
| | Does the person exposed to needle stick injury need tetanus vaccination? | 0.276 |
| | Needle should be recapped by using one hand to bold the cap and other to hold the needle. | 0.247 |
| | Is there is the risk of HIV transmission during needle stick injury? | 0.028 |
| | Is there is availability of HCV vaccine after needle stick injury? | 0.201 |

| | | |
|---|---|---|
| | Improved engineering control devices reduce the risk of needle stick injury. | 0.031 |

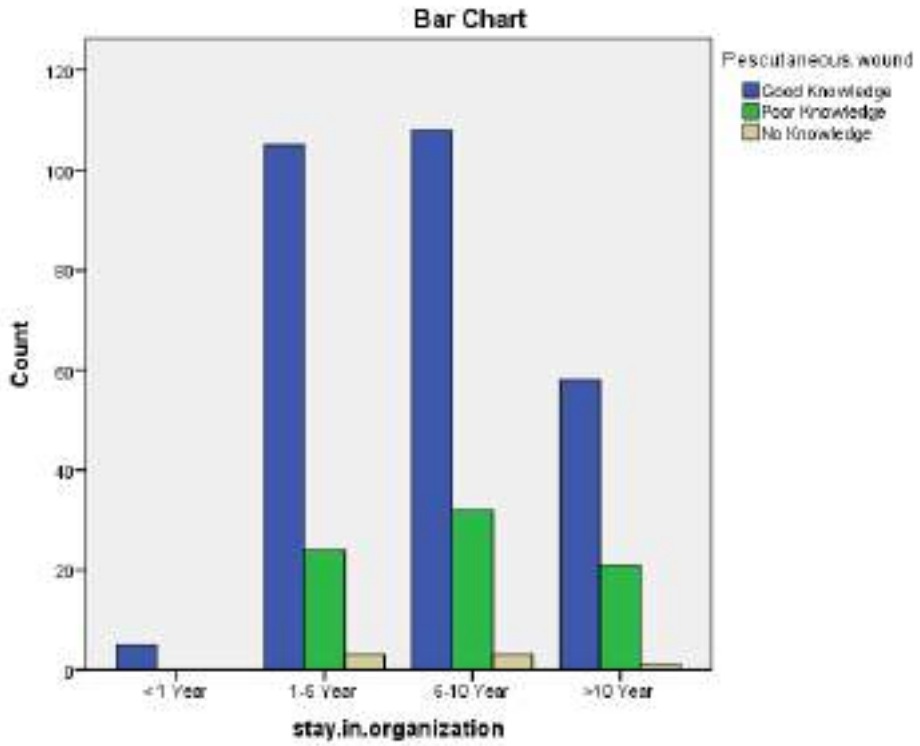
**Table # 8:**

| **Age Group** | **Practice** | **P.Value** |
|---|---|---|
| | Every nurse has chance to get needle stick injury | 0.697 |
| | Needle stick injuries are unavoidable things for nurses | 0.008 |
| | Increase workload can lead to needle stick injury | 0.004 |
| | If nurses get infected with HIV infection, they should resign from their profession | 0.079 |
| | The standard precautions to handle the sharp objects must always follow as improper handling can lead to get infection | 0.009 |
| | The infection transmitted from needle stick injuries are life threatening | 0.003 |
| | Although there is a risk of infection, confident and skillfulness can prevent injury | 0.008 |
| | We haven't learned about standard precaution for needle stick injury | 0.127 |
| | Unavailability of protective equipment can predispose a person to get needle stick injuries. | 0.347 |
| | Handle needle without wearing glove is better than wearing glove. | 0.139 |
| | Reporting after needle stick injury is not much useful. | 0.052 |
| | Every health care worker should be immunized with hepatitis B vaccine | 0.295 |
| | Health education for universal precaution on NSIs to the students and health care workers can reduce the prevalence of needle stick injuries among them | 0.032 |

**Table # 9:**

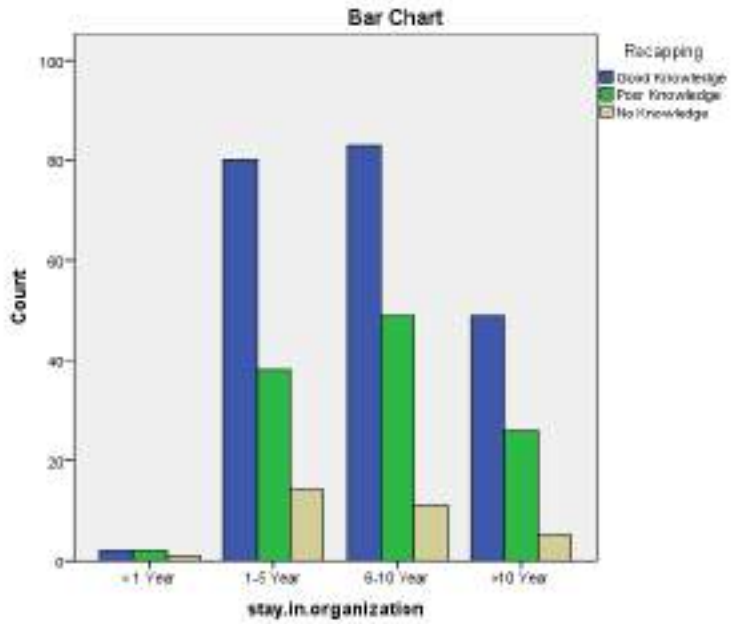
| **Stay in Organization** | **Practice** | **P.Value** |
|---|---|---|
| | Every nurse has chance to get needle stick injury | 0.697 |
| | Needle stick injuries are unavoidable things for nurses | 0.008 |
| | Increase workload can lead to needle stick injury | 0.004 |
| | If nurses get infected with HIV infection, they should resign from their profession | 0.079 |
| | The standard precautions to handle the sharp objects must always follow as improper handling can lead to get infection | 0.009 |
| | The infection transmitted from needle stick injuries are life threatening | 0.003 |
| | Although there is a risk of infection, confident and skillfulness can prevent injury | 0.008 |
| | We haven't learned about standard precaution for needle stick injury | 0.127 |
| | Unavailability of protective equipment can predispose a person to get needle stick injuries. | 0.347 |
| | Handle needle without wearing glove is better than wearing glove. | 0.139 |
| | Reporting after needle stick injury is not much useful. | 0.052 |
| | Every health care worker should be immunized with hepatitis B vaccine | 0.295 |
| | Health education for universal precaution on NSIs to the students and health care workers can reduce the prevalence of needle stick injuries among them | 0.032 |

**Figure # 6:**



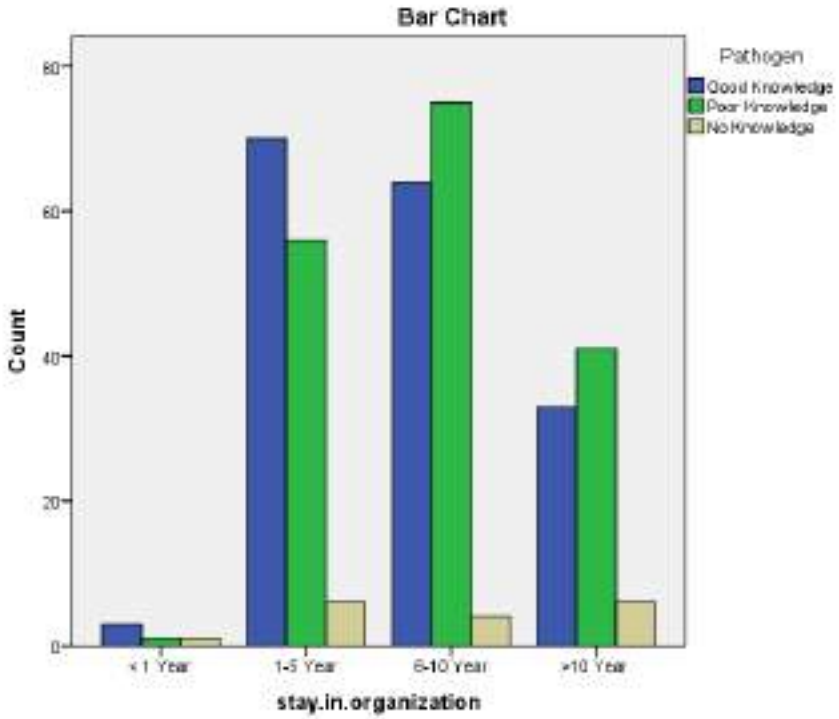

For percutaneous wound, maximum number of nurses contributes to "good knowledge" under 6-10 years of stay in organization.

**Figure # 7:**



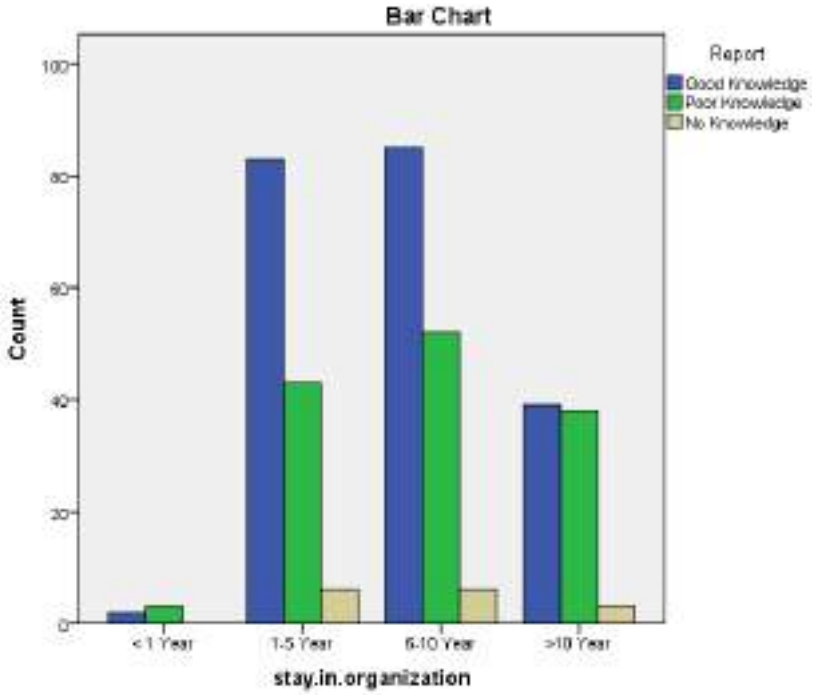

For Recapping , maximum number of nurses contributes to "good knowledge" under 6-10 years of stay in organization.

**Figure # 8:**



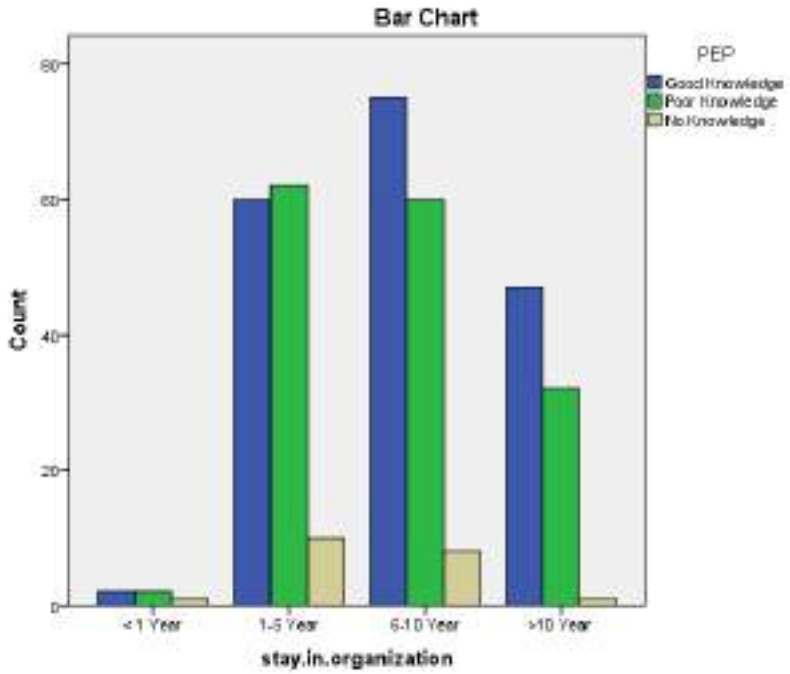

For pathogen , maximum number of nurses contributes to "poor knowledge" under 6-10 years of stay in organization

**Figure # 9:**




For report, maximum number of nurses contributes to "good knowledge" under 6-10 years of stay in organization.

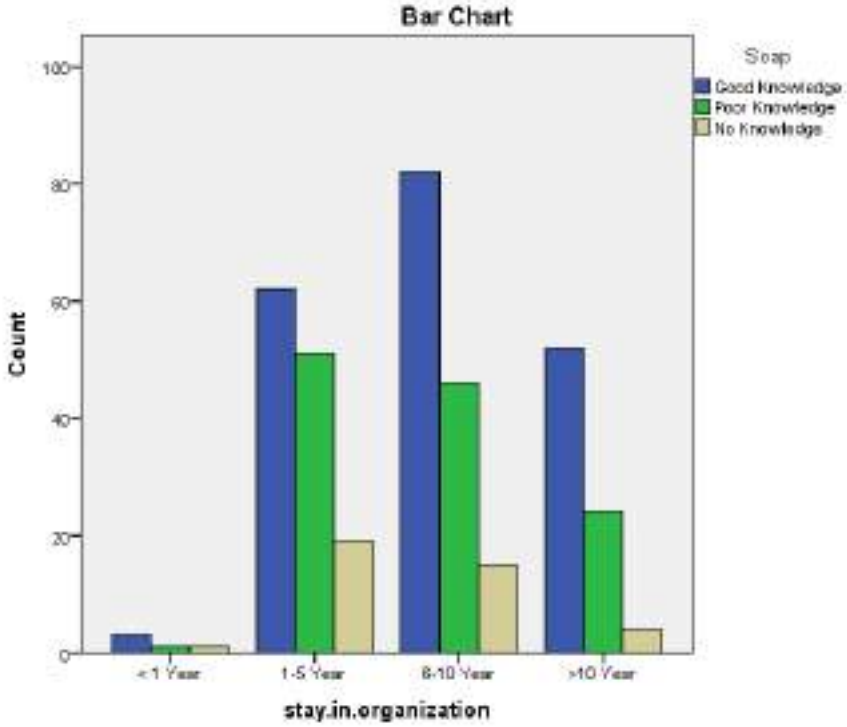
**Figure # 10:**




For PEP , maximum number of nurses contributes to "good knowledge" under 6-10 years of stay in organization.

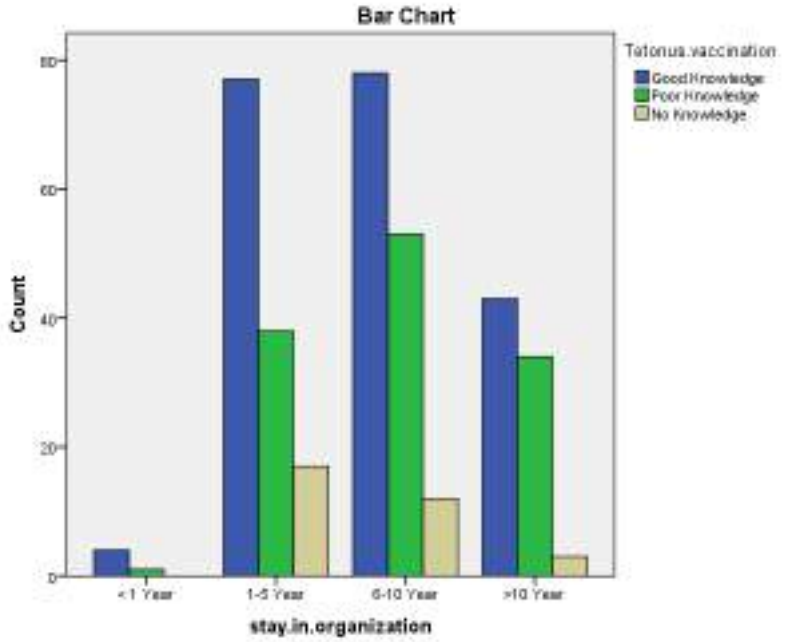


**Figure # 11:**



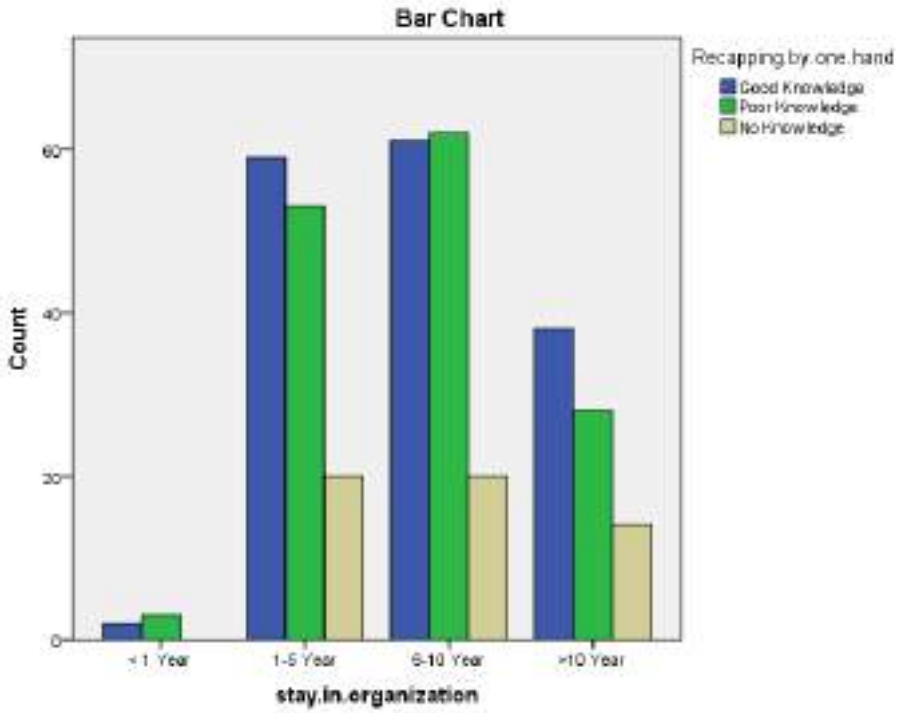

For SOAP , maximum number of nurses contributes to "good knowledge" under 6-10 years of stay in organization.

**Figure # 12:**



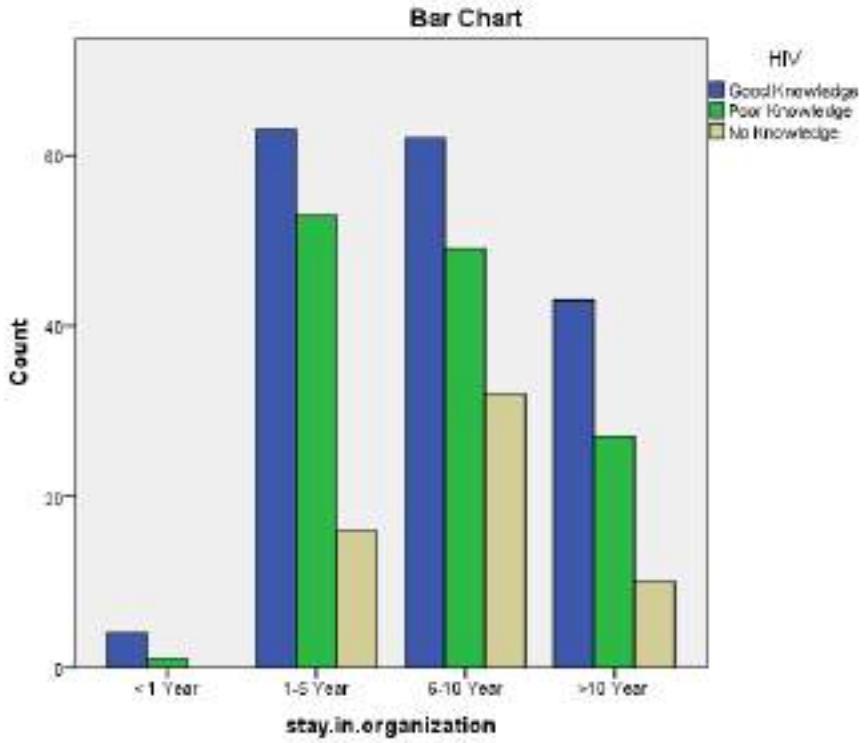

For Tetanus vaccination , maximum number of nurses contributes to "good knowledge" under 6-10 years of stay in organization.

**Figure # 13:**




For Recapping by one hand, maximum number of nurses contributes to "poor knowledge" under 6-10 years of stay in organization.

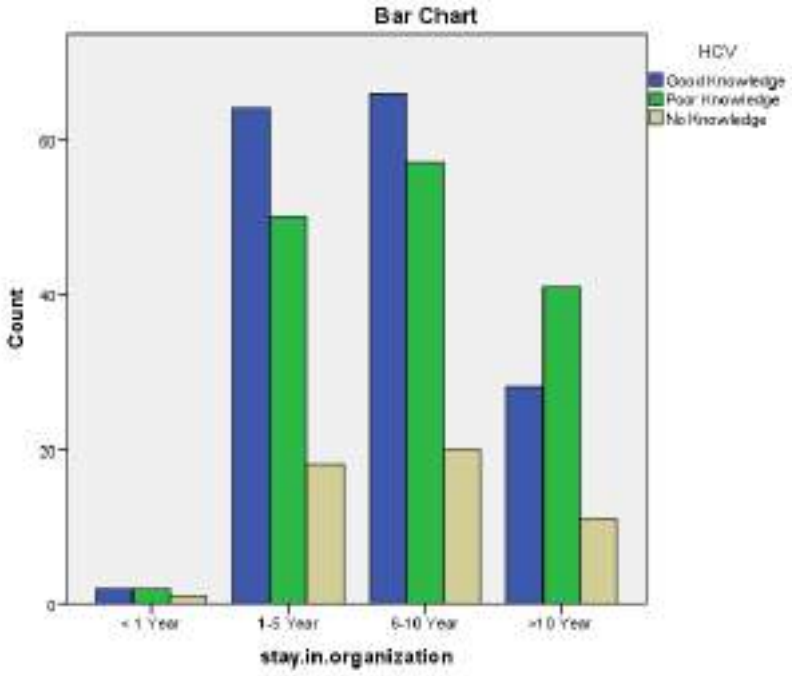
**Figure # 14:**




For HIV, maximum number of nurses contributes to "good knowledge" under 1-5 years of stay in organization.

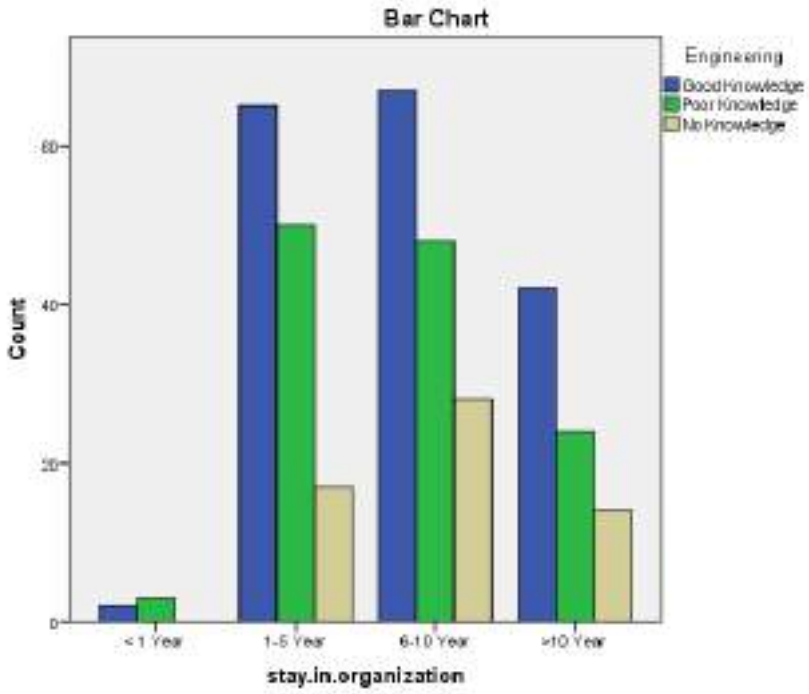


**Figure # 15:**




For HCV , maximum number of nurses contributes to "good knowledge" under 6-10 years of stay in organization.

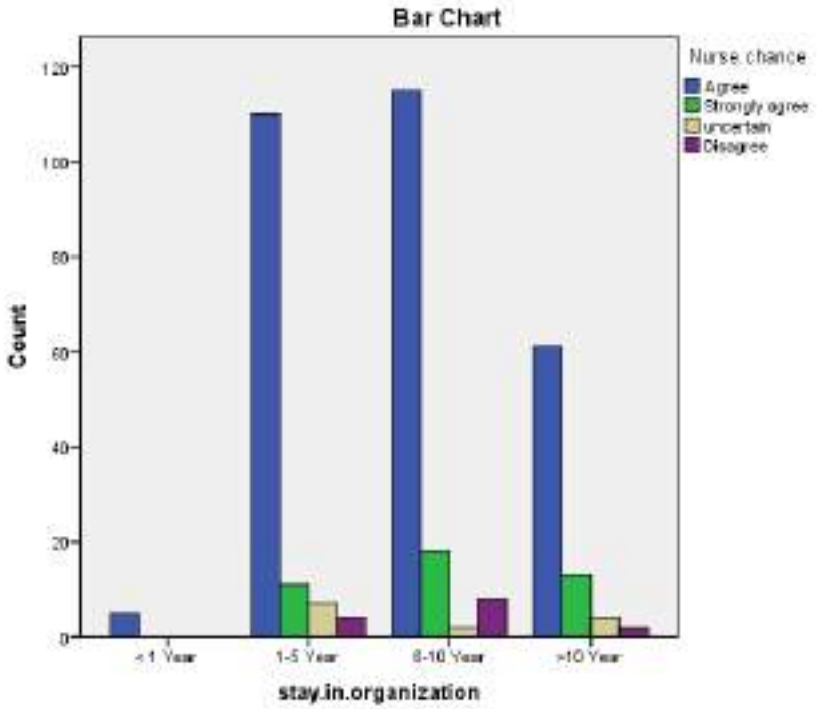
**Figure # 16:**




For engineering , maximum number of nurses contributes to "good knowledge" under 6-10 years of stay in organization.

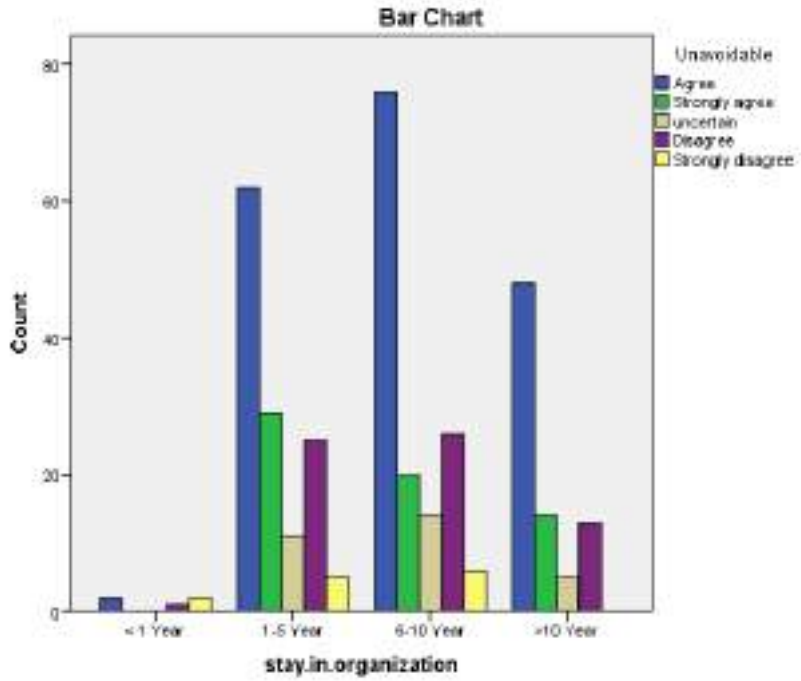


**Figure # 17:**




For nurse chance, maximum number of nurses contributes to "agree" under 6-10 years of stay in organization.

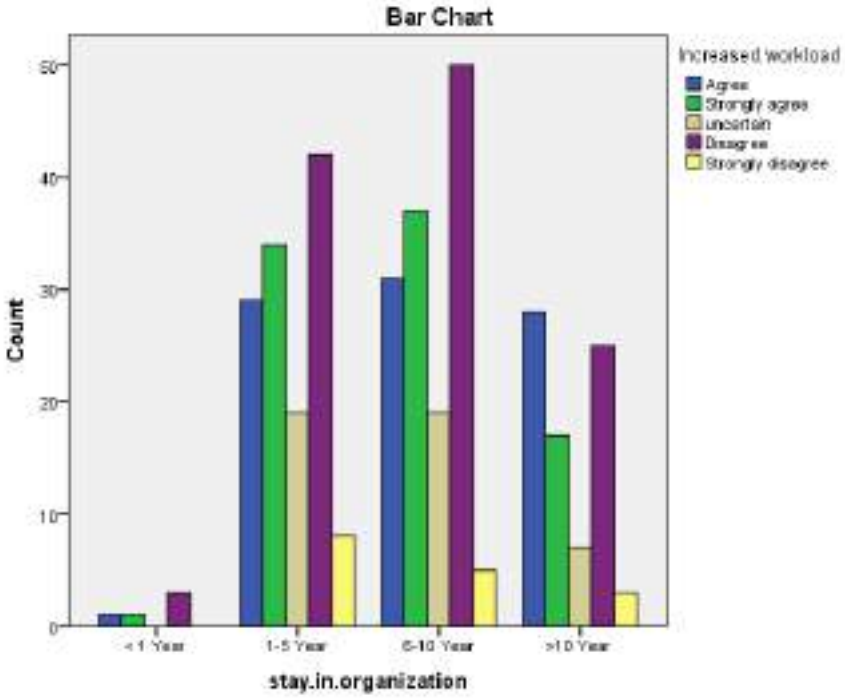
**Figure # 18:**




For unavoidable, maximum number of nurses contributes to "agree" under 6-10 years of stay in organization.

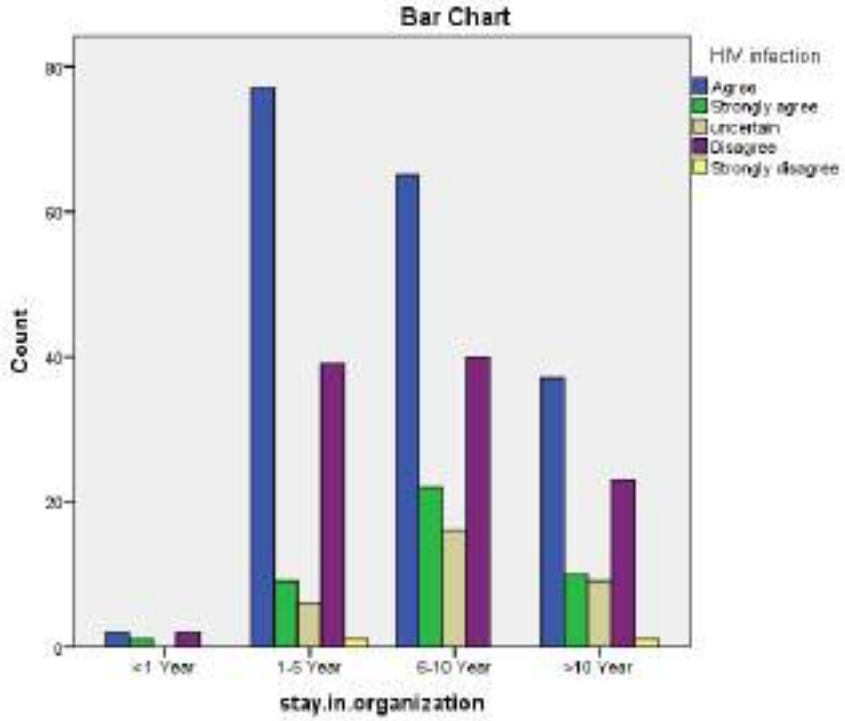


**Figure # 19:**




For Increased workload, maximum number of nurses contributes to "strongly agree" under 6-10 years of stay in organization.

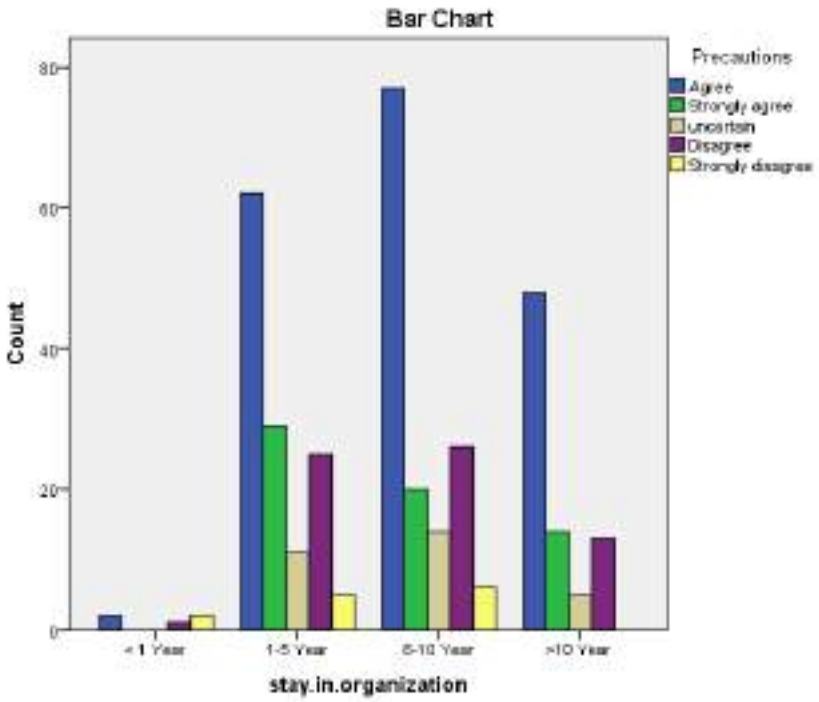
**Figure # 20:**




For HIV infection, maximum number of nurses contributes to "agree" under 1-5 years of stay in organization.

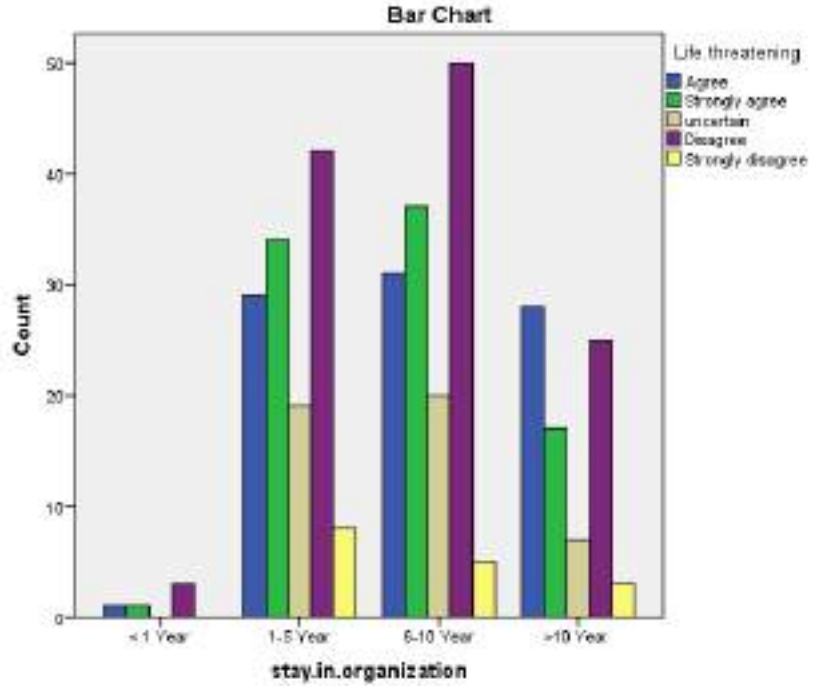


**Figure # 21:**



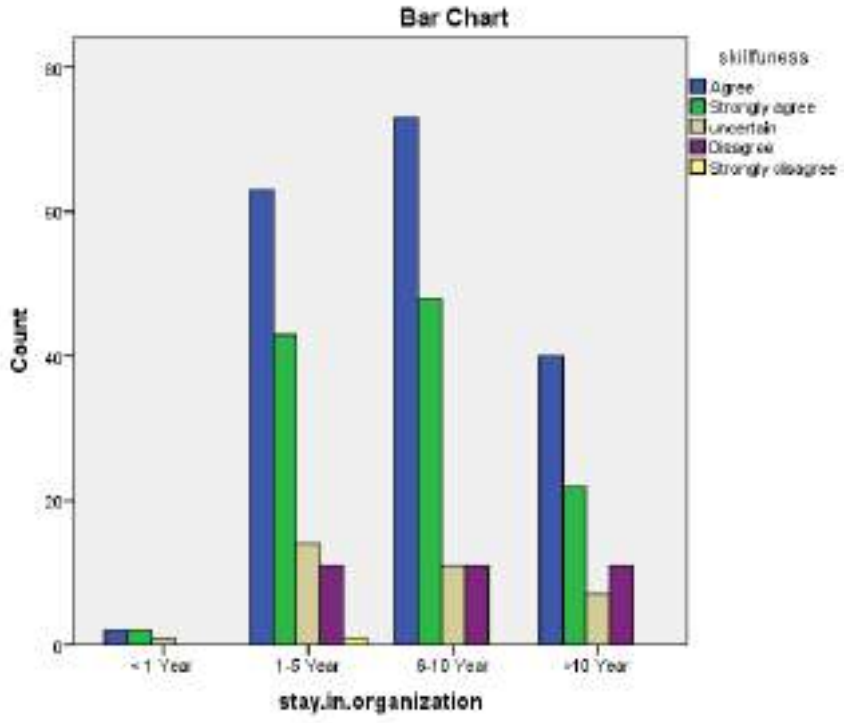

For precautions , maximum number of nurses contributes to "agree" under 6-10 years of stay in organization.

**Figure # 22:**



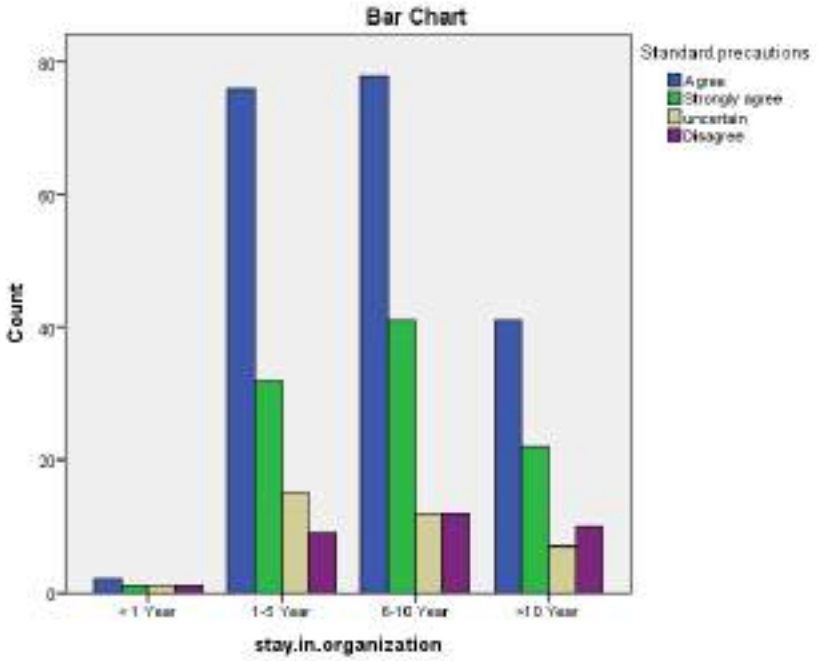

For life threatening , maximum number of nurses contributes to "disagree" under 6-10 years of stay in organization.

**Figure # 23:**




For skillfulness, maximum number of nurses contributes to "agree" under 6-10 years of stay in organization.

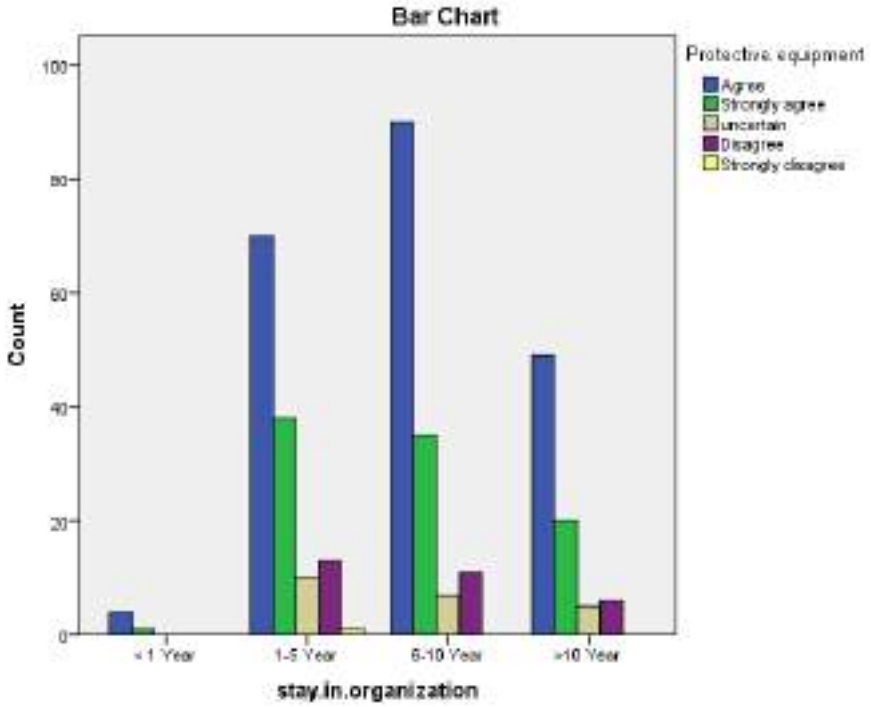
**Figure # 24:**




For precautions , maximum number of nurses contributes to "agree" under 6-10 years of stay in organization.

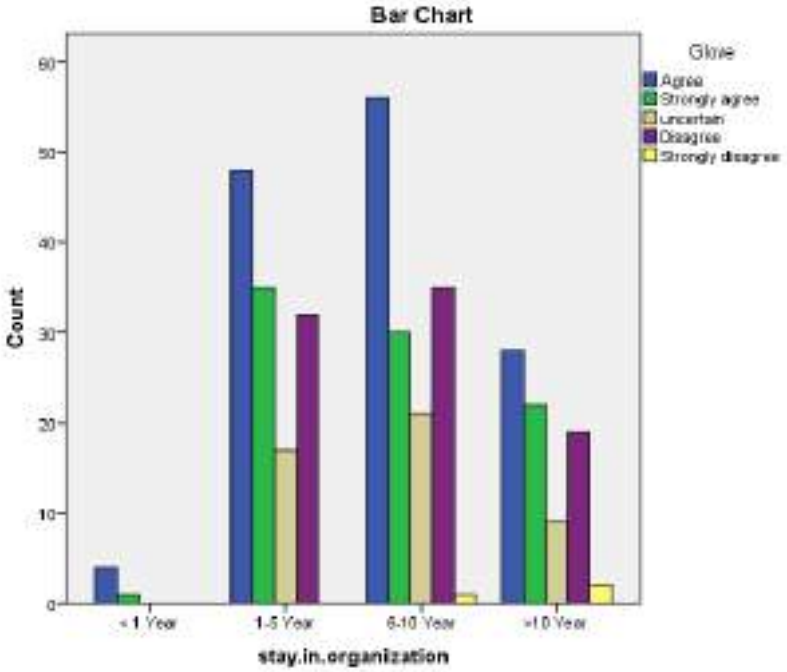


**Figure # 25:**



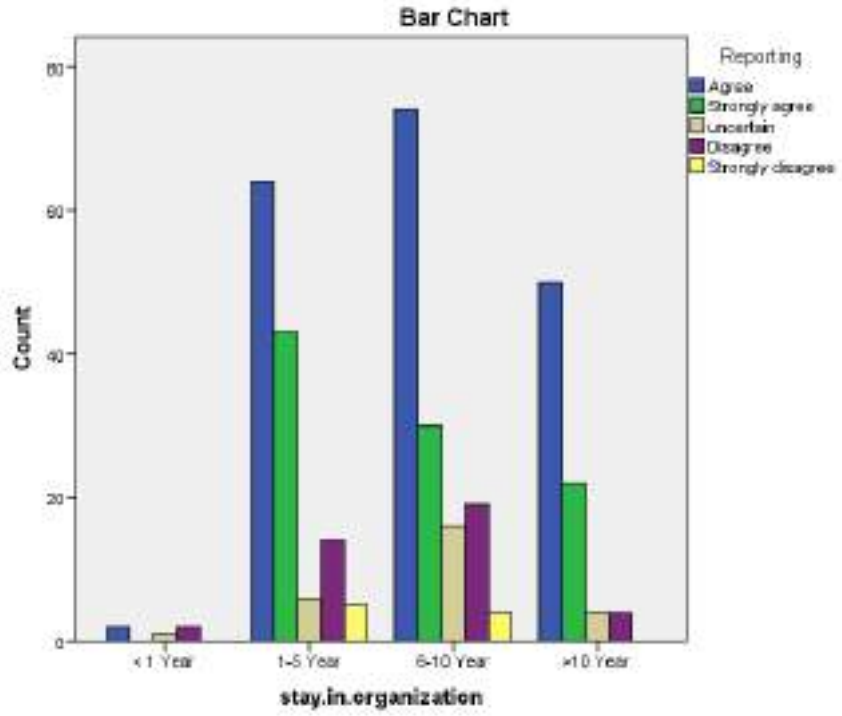

For protective equipment, maximum number of nurses contributes to "agree" under 6-10 years of stay in organization.

**Figure # 26:**



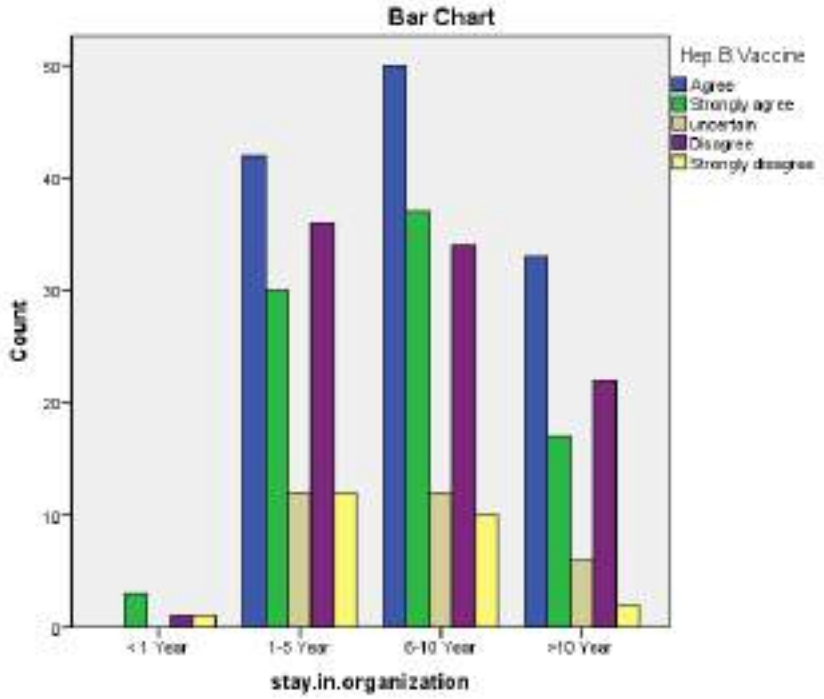

For gloves, maximum number of nurses contributes to "agree" under 6-10 years of stay in organization.

**Figure # 27:**




For reporting, maximum number of nurses contributes to "agree" under 6-10 years of stay in organization.

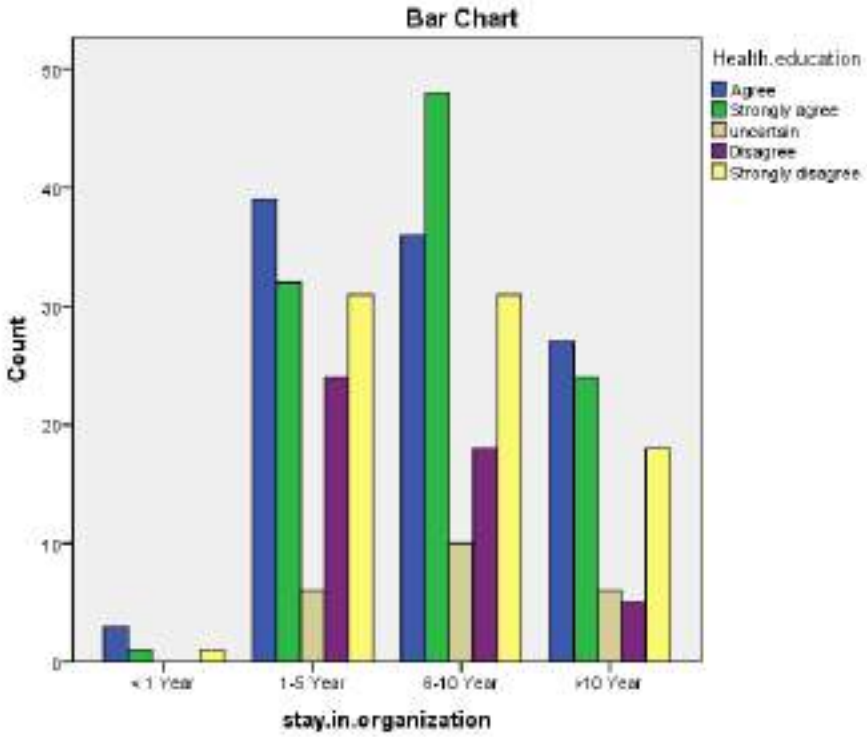
**Figure # 28:**




For Hep B vaccine, minimum number of nurses contributes to "uncertain" under 1 year of stay in organization.



**Figure # 29:**




For health education, maximum number of nurses contributes to "strongly agree" under 6-10 years of stay in organization.

# Chapter # 5

## Discussion

The current research was conducted to assess the knowledge of needle stick injuries and management practices after the needle stick injury among nurses of Queen Victoria hospital Bahawalpur.

The detected mean values of age of females who participated in the study showed that minimum age for patients is 20 years and maximum age was 40 according to inclusion/ exclusion criteria. Age is an independent variable and mean age or maximum and minimum age for subjects can vary depending upon participants. Total data was divided into four age groups, each of which was 5 years' duration. Maximum number of participants belonged to the age group of 26-30 years of age which was 53.9%. Participants in age group of 20-25 were 4.7%, in age group of 31-35 there were 23.1% participants while in 36-40 there were 18.3% participants. All the participants in this study were females.

In the present study duration of stay of the participants in current organization was determined. As duration of stay can change subjects' perception of knowledge and experience and it can influence the knowledge and management practice after the needle stick injury. It can also effect the duration of exposure. In this study we formed four classes of stay in the organization i-e less than 1 Year, 1-5 Year, 6-10 Year and greater than 10 years. Results of this study indicates that most of the subjects belong to 6-10 years' class 39.7%, participants with 1 to 5 years of stay were second most i-e 36.7%, participants with less than a year of stay were least in number 1.4% and those who were in organization for more than 10 years were 22.2%. Qualification of nurses was assessed in the study. Results showed that nurses with qualification 1 were the most i-e 56.4% while nurses with qualification of 2 & 3 were 27.2 & 16.4 respectively.

This research focused primarily on two aspects which are the knowledge of needle stick injuries and the practice of management after the needle stick injuries. Than the knowledge and practice of the needle stick injury was compared with age group and experience of nurses. A qualitative questionnaire was used as a tool and results are given in table no. 1 & 2 for the questions regarding knowledge of the injuries and practices for the injuries.

In the 13 questions asked about the knowledge of needle stick injuries those who had good knowledge about, NSI is a percutaneous wound were 76.7%, it has potential of transmission were 36.9%, recapping the needle can prevent the injury were 59.4%, it can spread pathogens were 47.2%, it must be reported were 58.1%, bleeding should be encouraged were 61.4%, PEP should be used were 51.1%, washing with soap were 55.3%, recapping method were 56.1%, it can spread HIV were 44.4%, it can spread HCV were 47.8% and advanced engineering can reduce NSI were 44.4%. These are the percentages of participants who had very good knowledge about the factors mentioned above.

Our study suggests that personal safety measures were poorly adhered to when handling patients generally, with over half of the respondents having had needle prick injuries in the past. In Nigeria poor adherence to safety practices and considerably little experience among medical personnel contribute to the risk of NPIs (Aisien & Shobowale, 2005; Okafor, Onwusulu, Okafor, Ihekwoaba, & Chineke, 2009). Also noted in our study was the higher proportion of NPIs among doctors compared to other HCWs, a finding similar to the observation made by Sadoh et al (Sadoh, Fawole, Sadoh, Oladimeji, & Sotiloye, 2006). Doctors, who by virtue of their long and higher level of educational training are supposed to know and practice better, tend to exhibit less caution in potentially dangerous situations.

All these results were cross compared with the stay in the organization which means for the time period they are working in the current organization and the age group of the participants. Knowledge about needle stick injuries was dependent on the stay in the organization and age of the participants.

Maximum nurses who were working in for the period of more than 1 year in current organization had good knowledge about the wounds while those who were part of the organization for less than 1 year have very few knowledge. It was clear from the results that as the duration of stay in the organization increases the number of participants who had good knowledge about needle stick injuries increases. Age groups of the participants were also compared with the knowledge of the participants, and it was evaluated that more the age of the participant is more is the knowledge about needle stick injuries. P values for all the question about knowledge with age and stay are given in the Table, which are all less than 1.00. These results are comparable with the previous studies.

In the questionnaire practices about needle stick injury were investigated by 13 questions, these questions are Likert scale questionnaire and the results showed a positive association between the knowledge of the participants about needle stick injury and practice of needle stick injuries. The practice of needle stick injury was compared with stay of the participant in the organization and different age groups of the participants in the study. It was evident that practices about needle stick injuries increased with the increased stay of the participant in the organization. P values for the practice versus stay in the organization are given in the Table and they are all less than 1.00. Similarly, P values for the practices and age groups are also given in Table which are all less than 1.00.

There was significant relation between participants' knowledge and Practice. The study explore that the knowledge and practice are greatly influenced by each other. The chi square value of knowledge with practice is p value = .000. The result showing that the relationship between knowledge and practice is positive and relationship is significant. So the knowledge is a very important that affects the practice of performance significantly. The study shows that nurses have poor knowledge and practices regarding needle stick injury. Needle stick injury is an important cardinal indication of poor injection safety practices by health Workers.

# Chapter # 6

## Conclusion

It suggested that 49.1% of nurses have good knowledge while 46.8% of nurses agrees with practice regarding needle stick injury. Age group and stay in organization has association with knowledge and practice of nurses regarding needle stick injuries. 6-10 years of experience showed that highest category for good knowledge and practice so increased stay in organization affected knowledge and practice of nurses.

## Recommendation

After the completion of this research study it is highly recommended that for performing further research studies in this topic the number of participant or subjects should be increased and the subjects must be divided into further more specific groups. Classification should base on their occupation, age of subjects, gender of participant and other variables. Moreover, initial severity of symptoms must also be noted regarding anxiety and depression. One of the major limitations of this study were it totally depended on participants' response and their point of view, through self-constructed questioner which can be further updated and improved.

# LIMITATIONS OF THE STUDY

Although the current study succeeded in many aspects to achieve its maximum goals and a specific and targeted number of patients that is 360, with a good follow-up rates was productively accomplished on time. However, the current study has many limitations which are following:

- The time for the study was too short.
- The number of participants who participated in the study (sample number) is too low to generalize the outcomes for whole population.
- Self-report measurements were used in the questionnaire which are largely dependent on participant's response.

# Chapter # 7

## RFERENCES

## CONSENT FORM (ENGLISH):

**Description of the Research and Your Participation**

You are invited to participate in a research study. The purpose of this research is to assess the nurses knowledge and practice about needle stick injury.

**Risks and Discomforts**

There are no known risks associated with this study.

**Potential Benefits**

This research may help us to understand how the nurses knowledge and practices about needle stick injury help out in occurrence and prevention of these types of injuries among nurses .

.

**Protection of Confidentiality**

We will do everything we can to protect your privacy. Your identity will not be revealed in any publication resulting from this study.

**Voluntary Participation**

Your participation in this research study is voluntary. You may choose not to participate and you may withdraw your consent to participate any time. You will not be penalized in any way should you decide not you participate or to withdraw from this study.

Contact Information: If you have any questions or concerns about the study or if any problem arise, please contact AsimaBibi. Mobile No. 0304 7606833

**CONSENT**

I have read this consent form and have been given the opportunity to ask questions. I give my consent to participate in this study.

Participant's Signature: _____ Date: _____

A copy of this consent form should be given to the participant

# CONSENT FORM (URDU):

## ریسرچ سٹڈی میں شرکت کا دعوت نامہ

شمولیت کی دعوت دیتا/دیتی ہوں

نقصانات اور تکلیف: اس تحقیق سے کسی قسم کے نقصان یا تکلیف کا اندیشہ نہیں ہے۔

رازداری کا تحفظ: ہم آپ کی معلومات کے تحفظ کے لیے وہ سب کچھ کریں گے جو ہم کر سکتے ہیں۔ تحقیق کے متعلق اکٹھی کی گئی تمام معلومات کو انتہائی خفیہ رکھا جائے گا۔ ڈیٹا انٹری اور تجزیے کے دوران آپ کے متعلق وہ تمام معلومات جن سے آپ کی شناخت ہو سکتی ہو کو ختم کر دیا جائے گا۔ اس تحقیق کے نتیجے میں شائع ہونے والی کسی بھی اشاعت میں آپ کی شناخت کو ظاہر نہیں کیا جائے گا۔

رضاکارانہ شمولیت: اس تحقیقی مطالعہ میں آپ کی شرکت رضاکارانہ ہے۔ آپ کو شرکت نہ کرنے اور کسی بھی وقت بغیر وجہ بتانے اس تحقیق میں شمولیت کو چھوڑنے کا اختیار ہے۔ شرکت نہ کرنے یا اس میں شمولیت کو چھوڑنے کی صورت میں آپ کے خلاف کوئی کاروائی نہیں کی جائے گی

رابطے کیمعلومات :اگر آپکواسمطالعےمیں کوئیسوالاتیاخدشاتہیں یا اگر کوئیمسئلہپیدا ہو تو عاصمہبیسے رابطہکریں۔موبائل03047606833

ریسرچکاعنوان :انجکشنچھڑیکیچوٹکے بارےمیں مرسوں کے علاور طریقوں کا اندازہ

میں نے معلوماتی شیٹ جو کہ تحقیق کی وضاحت کر رہی ہے کو سمجھ لیا ہے اور مجھے تحقیق کے سوالات کرنے کا موقع دیا گیا تھا۔

- ☐ میں سمجھ گیا/گی ہوں کہ میری شرکت رضاکارانہ ہے اور یہ کہ میں کسی بھی وقت اپنا ارادہ بدل سکتا/سکتی ہوں اور تحقیق سے دستبردار ہو سکتا/سکتی
- ☐ میں سمجھ گیا/گی ہوں کہ میرے جوابات خفیہ رکھے جاءیں کے۔ میں محققیین کو اس بات کی اجازت دیتا/دیتی ہوں کے وہ جوابات کو جانچ سکیں۔
- ☐ میں سمجھ گیا/گی ہوں کے معلومات میرے نام کے بجاے نمبر کی صورت میں محفوظ کی جائیں گی۔ تاکہ میں نتائج کی اشاعت کے دوران کسی بھی طرح سے شناخت نہ کیا جاسکوں۔ میں اس بات سے رضامند ہوں کے جو معلومات مجھ سے لی جائیں گی وہ تحقیق میں استعمال ہوں گی۔
- ☐ میں اوپر بتائی گی تحقیق میں شامل ہونے کے لیے رضامند ہوں اور محققین کو اپنا پتہ تبدیل ہونے کی صورت میں مطلع کروں گا/گی۔

رضامندی: میں نے یہ اجازت نامہ پڑھا ہے اور مجھے سوال پوچھنے کا موقع دیا گیا ہے۔ میں اس سٹڈی میں شرکت کے راضی ہوں۔

شرکت کنندہ کا نام_____ دستخط_____ تاریخ_____

اجازت لینے والے کا نام_____ دستخط_____ تاریخ_____

اس اجازت نامہ کی ایک نقل آپکو دی جانی چاہے۔

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# Outcome measure tool:

Name:_____ Age: _____

Gender:_____Occupation:_____

Phone#_____Address:_____

| | | | |
|---|---|---|---|
| **Organization** | | **Designation:** | |
| **Gender** | 1 Male ☐ 2 Female ☐ | **Marital Status** | 1.Married ☐<br>2.unmarried ☐ |
| **Age Group** | 1 = 20- 25yrs ☐ 2=26-30yrs ☐<br>3 = 31-35 yrs ☐ 4 =36_40yrs ☐ | **Qualification** | 1.Nursing Diploma ☐<br>2.Specialization ☐<br>3. Post RN ☐ |
| **Stay in Organization** | 1 = < 1Year ☐ 2= 1-5Years ☐<br>3= 6-10Years ☐ 4=Above 10Years ☐ | | |

| Sr# | Nurses knowledge regarding needle stick injury | Good knowledge | Poor knowledge | No knowledge |
|---|---|---|---|---|
| 1 | Needle stick injury is a percutaneous wound? | ① | ② | ③ |
| 2 | Needle stick injury is the risk of transmission of blood-borne disease. | ① | ② | ③ |
| 3 | Recapping needle prevents risk of needle stick injuries. | ① | ② | ③ |
| 4 | Needle sticks injury cause transmission of pathogens. | ① | ② | ③ |

| Sr. # | Nursing knowledge regarding needle stick injury | Good knowledge | Poor knowledge | No knowledge |
|---|---|---|---|---|
| 5 | It is necessary to report after the needle stick injury. | ① | ② | ③ |
| 6 | Bleeding should be encouraged at the site of injury. | ① | ② | ③ |
| 7 | PEP should be initiated within 1 hour of exposure of Needle stick injury. | ① | ② | ③ |
| 8 | Affected area should be washed with soap and water. | ① | ② | ③ |
| 9 | Does the person exposed to needle stick injury need tetanus vaccination? | ① | ② | ③ |
| 10 | Needle should be recapped by using one hand to hold the cap and other to hold the needle. | ① | ② | ③ |
| 11 | Is there is the risk of HIV transmission during needle stick injury? | ① | ② | ③ |
| 12 | Is there is availability of HCV vaccine after needle stick injury? | ① | ② | ③ |
| 13 | Improved engineering control devices reduce the risk of needle stick injury. | ① | ② | ③ |

**Pakistan Oral & Dental Journal Vol 35, No. 4 (December 2015)**

| Sr # | Nursing Practices regarding needle stick injury | Agree | Strongly Agree | Uncertain | Disagree | Strongly Disagree |
|---|---|---|---|---|---|---|
| 1 | Every nurse has chance to get needle stick injury. | 1 | | 3 | 4 | 5 |
| 2 | Needle stick injuries are unavoidable things for nurses. | 1 | 2 | 3 | 4 | 5 |
| 3 | Increase workload can lead to needle stick injury. | 1 | 2 | 3 | 4 | 5 |
| 4 | If nurses get infected with HIV infection, they should resign from their profession. | 1 | 2 | 3 | 4 | 5 |
| 5 | The standard precautions to handle the sharp objects must always follow as improper handling can lead to get the infection. | 1 | 2 | 3 | 4 | 5 |
| 6 | The infection transmitted from needle stick injuries are life threatening. | 1 | 2 | 3 | 4 | 5 |
| 7 | Although there is a risk of infection, confident and skillfulness can prevent injury. | 1 | 2 | 3 | 4 | 5 |
| 8 | We haven't learned about standard precaution for needle stick injury. | 1 | 2 | 3 | 4 | 5 |
| 9 | Unavailability of protective equipment can predispose a person to get needle stick injuries. | 1 | 2 | 3 | 4 | 5 |
| 10 | Handle needle without wearing glove is better than wearing glove. | 1 | 2 | 3 | 4 | 5 |
| 11 | Reporting after needle stick injury is not much useful. | 1 | 2 | 3 | 4 | 5 |
| 12 | Every health care worker should be immunized with Hepatitis B vaccine. | 1 | 2 | 3 | 4 | 5 |
| 13 | Health education for universal precaution on NSIs to the students and health care workers can reduce the prevalence of needle stick injuries among them. | 1 | 2 | 3 | 4 | 5 |