

Table 3: Shows awareness of students regarding needle stick and sharp injuries (NSSIs):

| <i>Items</i> | <i>Options</i> | <i>N</i> | <i>Percentage</i> |
|---|----------------|----------|-------------------|
| Most NSSIs have been neglected and not reported. | Agree | 57 | 62 |
| | Disagree | 8 | 8.7 |
| | Don't know | 27 | 29.3 |
| Post NSSIs the recommendation is to milk out more blood from injured site? | Agree | 37 | 40.2 |
| | Disagree | 29 | 31.5 |
| | Don't know | 26 | 28.3 |
| Post NSSIs the affected area should be immediately washed thoroughly with soap and water? | Agree | 65 | 70.7 |
| | Disagree | 5 | 5.4 |
| | Don't know | 22 | 23.9 |
| Post- exposure prophylaxis (PEP) should be initiated within one hour of the injury ; | Agree | 67 | 72.8 |
| | Disagree | 7 | 7.6 |
| | Don't know | 18 | 19.6 |
| Most injuries occur during recapping of used needles | Agree | 69 | 75 |
| | Disagree | 16 | 17.4 |
| | Don't know | 7 | 7.6 |
| Post injury the exposed person should be monitor for at least 6 months after exposure | Agree | 74 | 80.5 |
| | Disagree | 6 | 6.5 |
| | Don't know | 12 | 13 |

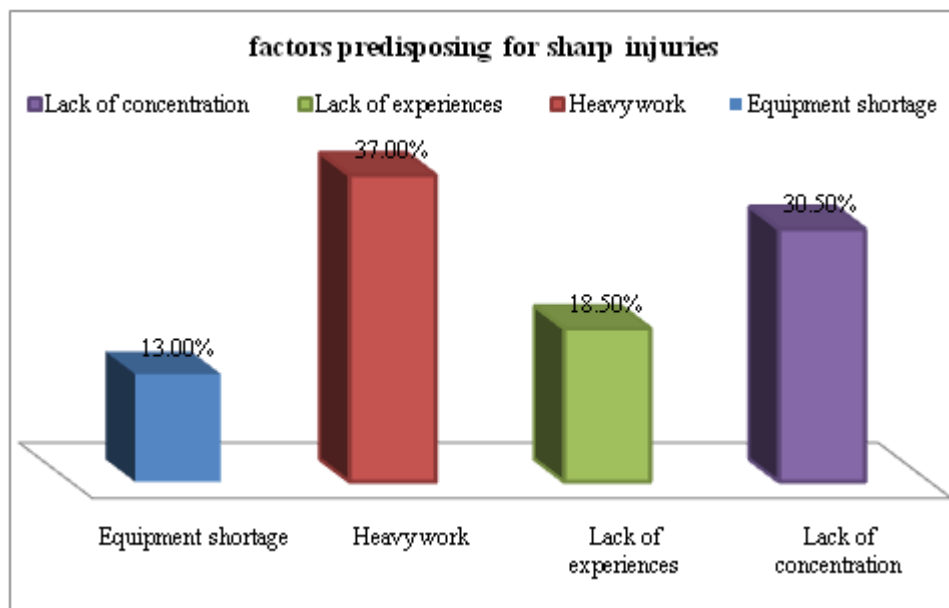


Figure 1: illustrate students` view regarding factors predisposing for needlesticks and sharp injuries

Table 4 presents the comparison of students' exposure to Needlestick and sharp injuries, according to their academic year, departments, using of gloves for venopuncture and Hepatitis B vaccination. It was found that there was a significant relation between departments ($p=0.014$) in regard to status of Hepatitis B vaccine, which mean 95.3% of laboratory students was vaccinated against hepatitis B virus Whereas only 77.6% of nursing students were vaccinated against it.

Table 4: Compare the exposure of students to Needlestick and sharp injuries, according to their academic year, departments, using of gloves for venopuncture and Hepatitis B vaccination

| Characteristic | Did you ever have needle stick or sharp | | | | X ² | P-value | Are using of glove for venopuncture? | | | | X ² | P-value |
|-------------------|---|----------|----------|----------|----------------|-------------|--------------------------------------|----------|----------------|----------|----------------|-------------|
| | Yes | | No | | | | Yes | | No | | | |
| | n | % | n | % | | | n | % | n | % | | |
| Academic | n | % | n | % | 1.33 | 0.51 | n | % | n | % | 1.35 | 0.50 |
| Third year | 7 | 17% | 5 | 10% | | | 9 | 11.4 | 3 | 23% | | |
| Fourth year | 15 | 36% | 1 | 32% | | | 2 | 34.2 | 4 | 31% | | |
| Bridging | 20 | 40.9 | 2 | 59.1 | | | 4 | 87.7 | 6 | 12.3% | | |
| Department | Did you ever have needle stick or sharp | | | | X ² | P-value | Hepatitis B vaccine status | | | | X ² | P-value |
| | Yes | | No | | | | Vaccin | | Not vaccinated | | | |
| | n | % | N | % | | | n | % | n | % | | |
| Nursing | 22 | 52.8 | 2 | 54% | .0 | .887 | 3 | 77.6 | 1 | 22.4% | 5. | 0.01 |
| Laboratory | 20 | 40.9 | 2 | 59.1 | 24 | | 4 | 95.3 | 2 | 4.7% | 97 | 4 |

Table 5 shows the comparison of students' characteristics with reporting of needlestick injuries to clinical instructors and the technique used to recap used needles in case they have to recap them. It was found that there was a significant relation between departments (p=0.014) in regard to status of Hepatitis B vaccine, which mean 95.3%

of laboratory students was vaccinated against hepatitis B virus Whereas only 77.6% of nursing students were vaccinated against it. In this table there was no significant relation between academic year and departments (p>0.05) in regard to reporting of Needlestick injuries to clinical instructors.

Table 5: Compares the student's characteristics with reporting of needlestick injuries to clinical instructors and the technique used to recap used needles in case they have to recap them

| Characteristic | in case you have to recap the needle are you using one hand technique or two hand | | | | X ² | P-value | Reporting of needlestick injuries to clinical instructors | | | | X ² | P-value |
|-------------------|---|----------|---------------------|----------|----------------|-------------|---|----------|--------------|----------|----------------|-------------|
| | One hand technique | | Two hands technique | | | | Reported | | Not reported | | | |
| | n | % | n | % | | | n | % | n | % | | |
| Academic | n | % | n | % | 2.76 | 0.25 | n | % | n | % | 81 | 0.24 |
| Third year | 8 | 66.7 | 4 | 33.3% | | | 3 | 37.5 | 5 | 62.5% | | |
| Fourth year | 13 | 41.9 | 18 | 58.1% | | | 1 | 73.3 | 4 | 26.7% | | |
| Bridging | 28 | 57.1 | 21 | 42.9% | | | 1 | 57.9 | 8 | 42.1% | | |
| Department | in case you have to recap the needle are you using one hand technique or two hand | | | | X ² | P-value | Reporting of needlestick injuries to clinical instructors | | | | X ² | P-value |
| | One hand technique | | Two hands technique | | | | Reported | | Not reported | | | |
| | n | % | N | % | | | n | % | n | % | | |
| Nursing | 28 | 57.1 | 21 | 42.9% | .6 | 0.27 | 1 | 56.5 | 1 | 43.5% | 0. | 0.45 |
| Laboratory | 21 | 48.8 | 22 | 51.2% | 35 | | 1 | 63.2 | 7 | 36.8% | 19 | 3 |

4. Discussion

92 male students were participated in this study, from two departments; 49(53.3%) were nursing students, 43(47.7%) were laboratory students. Hepatitis B vaccination is curtail for students in medical and health sciences, and CDC¹⁷ recommended vaccination against HBV for medical and nursing students, laboratory technicians, pharmacists, hospital volunteers, and administrative staff. In various studies performed among the students from different fields of health in world and Turkey, the rates of hepatitis B vaccination were changed between 50% with 99.3%¹⁸. In this study (79) 89.1% of students were fully vaccinated against hepatitis B virus, which indicated that most of students were oriented about the important of this vaccine. In regard to significant of Hepatitis B vaccination, this study showed, there was a significant relation between departments (p<0.05). "The major blood-borne pathogens of concern associated with needlestick injury are hepatitis B virus (HBV), hepatitis C virus (HCV) and HIV. Among these viruses HBV take highest chance (30%) to be transmitted by NSSIs."¹⁹ This study revealed that students think that HBV was take

27.2% and HIV 48.9%. Respectively, so the students need to know that HBV take highest chance to be transmitted by NSSIs than HIV. In study performed among the students from the departments of medicine, dentistry, nursing and midwifery, the frequency rate of NSSIs was determined to be 71.1%²⁰. However, in various studies performed among health school students (nursing, midwifery, health officials) in Turkey, the rates of injuries were determined between 35.5% with 74.1%¹⁸. In this study, among (92) students from both department the rate of inquiries was 45.7% (42). Compared to these studies, this rate was considered high because near to half of students were expose to needle stick injuries.

In regard to reporting of exposure to clinical instructor, this study found there no statistical significant (p>0.05) between departments and academic year.

In regard to the student should have to recap the used needle, this study found that near to half of (47.3% students using two hands to recapped the used needle, this methods increase the risk to expose to needle injury, so the students need more clinical to practice to not recapping needles and in case of they have to that, they must have to use one hand technique (scoop

method) recapped the used needle. About factor predispose for exposure to NSSIs, "one study performed among nursing students in Brazil, the factors affecting the rate of exposure to NSSIs were found as lack of attention (22.2%), lack of experience (13.9%), inadequate hand skills (9.7%) and hurrying (6.9 %)." ¹⁸. In this study the factor affecting expose to injuries was heavy work (37%), lack of concentration (30.5%), lack of experiences (18.5%) and lack of equipments to dispose sharps (13%). This study revealed that heavy work was dominant factor predisposed to needle stick injuries.

5. Conclusion

The rate of expose to inquiries among students was 45.7%, majority of them were vaccinated against (HBV) and there was a significant relation between departments ($p < 0.05$) in regard to HBV

6. Recommendations

The orientation for the students about the infection control recommendations and guidelines is mandatory and students are advised to avoid recapping of used needle, however in case of exposure to NSSIs, the students should have report this incidence to their clinical instructors immediately.

References

- [1] Needlestick injury from Wikipedia available @ http://en.wikipedia.org/wiki/Needlestick_injury access on 18.10.2014.
- [2] Centers for Disease Control and Prevention. The STOP STICKS campaign: Sharps injuries. <http://www.cdc.gov/niosh/stopsticks/sharpsinjuries.html> (Accessed March 25, 2014).
- [3] International Healthcare Worker Safety Center, University of Virginia. (2011) EPINet Report: Needlestick and sharp-object injuries. <http://www.healthsystem.virginia.edu/pub/epinet/epinetdataareports.html> (Accessed March 25, 2014).
- [4] Collins CH, Kennedy DA. Microbiological hazards of occupational needlestick and other sharps' injuries. *J Appl Bacteriol* 1987; 62:385-402.
- [5] Wagner D, de With K, Huzly D, Hufert F, Weidmann M, Breisinger S, Eppinger S, Kern WV, Bauer TM. Nosocomial transmission of dengue. *Emerg Infect Dis* (2004); 10(10):1872-3.
- [6] Henderson DK. Management of needlestick injuries: a house officer who has a needlestick. *JAMA*. (2012) (1):75-84. PubMed
- [7] Mülder K. "Nadelstichverletzungen: Der bagatellisierte "Massenunfall"". *Dtsch Arztebl (in German)* 102 (9): 558–61. Retrieved (2009).
- [8] Prüss-Ustün A, Rapiti E, Hutin Y. "Estimation of the global burden of disease attributable to contaminated sharps injuries among health-care workers". *American Journal of Industrial Medicine* 48 (6): (2005). PMID 16299710.
- [9] Henderson DK. Management of needlestick injuries: a house officer who has a needlestick. *JAMA* 2012; 307:75.
- [10] International Healthcare Worker Safety Center, University of Virginia. EPINet Report: Needlestick and sharp-object injuries. (2011) <http://www.healthsystem.virginia.edu/pub/epinet/epinetdataareports>.
- [11] Schillie S, Murphy TV, Sawyer M, et al. CDC guidance for evaluating health-care personnel for hepatitis B virus protection and for administering post exposure management. (2013), *MMWR*.
- [12] Fisman DN, Harris AD, Rubin M, et al. Fatigue increases the risk of injury from sharp devices in medical trainees: results from a case-crossover study. *Infect Control Hosp Epidemiol* (2007); 28:10.
- [13] Ayas NT, Barger LK, Cade BE, et al. Extended work duration and the risk of self-reported percutaneous injuries in interns. *JAMA* (2006); 296:1055.
- [14] Askarian M, Yadollahi M, Kuochak F, et al. Precautions for health care workers to avoid hepatitis B and C virus infection. *Int J Occup Environ Med* 2011; 2:191.
- [15] Centers for Disease Control and Prevention. Workbook for designing, implementing and evaluating a sharps injury prevention. <http://www.cdc.gov/sharpsafety/resources.html> (Accessed March 25, 2014).
- [16] Occupational exposure to bloodborne pathogens--OSHA. Final rule. *Fed Regist* (1991); 56:64004.
- [17] CDC .Recommended Vaccines for Healthcare Workers. Available @ <http://www.cdc.gov/vaccines/adults/recvac/hcw.html> access on 29/11/2014.
- [18] Kurşun Ş. & Arslan S. Needlestick and Sharp Injuries among Nursing and Midwifery Students. *IJCS* 2014 May-August Vol 7 Issue 2. available @ <http://www.internationaljournalofcaringsciences.org/docs/33.%20Kursun-1.pdf>
- [19] Hanafi. M.I , Mohamed, A.M, Kassem M.S. Needlestick injuries among health care workers of University of Alexandria hospitals. *EMHJ* Vol. 17 No. 1 2011
- [20] Askarian M. & Malekmakan L. The prevalence of needlestick injuries in medical, dental, nursing and midwifery students at the university teaching hospitals of Shiraz, Iran. *Indian Journal of Medical Sciences* (2006). 60: 227-232.