The Incidence and Circumstances of Needle Sticks Injury (NSI) among Arab Nurses Students: Comparative Study

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Introduction

• Needle stick injury (NSIs) is a major cause of blood borne infections transmitted among health care personnel. Needle stick injury means the pretrial introduction into the body of a health care worker, during the performance of his or her duties, of blood or other potentially infectious material.
Introduction

• There are more than 20 types of blood borne pathogens and mainly of hepatitis B, C and human Immune Deficiency Disease can be transmitted through needle stick injuries.
Introduction

• The student nurses are sensitized to these risks from the outset of their training. However, they might have the knowledge on how to prevent accidental injuries, but their level of skills development, lack of training and awareness of importance, specifically the first and second year nursing students, might not yet be optimal.
• This places a definite responsibility on the nurse educators and mentors in the clinical setting. Nurse educators are in part responsible for the actions of the students, and are subjected to liability for negligent acts such as inadequate supervision of students in the clinical setting.
Theoretical Framework: Neuman Systems Model

Secondary Prevention
Peer and instructor evaluations of performance, “check-offs” of various nursing skills, and continuing assessment of incidence of needle sticks.

Primary Preventions
Engineered safety devices, no recapping of needles, and educational programming.

Nursing Students and Needle Stick Injury

Decrease risk of getting needle stick injuries and associated blood borne infections

Tertiary Prevention
Post-exposure prophylaxis following a needle stick injury.
Aim of Study

• To found out the incidence of needle sticks injury (NSI) among Arab nurse students
• To evaluate the circumstances around this situation.
**Design**

This multi-centre study was carried out as a cross-sectional survey based on a self-administered questionnaire. It was conducted among the undergraduate nursing students (from 2nd year to the final year). A descriptive comparative design was used to explore the incidence of needle sticks injury (NSI) among nurses students and evaluate the circumstances around this situation.
**Setting**

- The study was conducted at faculties of nursing among four Universities at AL-Hussein Bentahal at Jordan, Assiut at Egypt, Babylon at Iraq and El-Marefa at Saudi Arabia.

**Sample**

- The study sample included all undergraduate faculty of nursing students (1320) who agreed to participated in this study.
Demographic Characteristics of Study Sample (All Universities No. 1320)

Total by Gender

- Male: 81%
- Female: 19%

Gender by Universities

- Jordan: 16% Male, 11% Female
- Egypt: 73% Female
- Iraq: 30% Male, 12% Female
- Saudi Arabia: 54% Male, 4% Female

Results
Demographic Characteristics of Study Sample (All Universities No.1320)

Total by Study level:
- 22%
- 34%
- 44%

Study level by Universities:
- Jordan
- Egypt
- Iraq

- Second
- Third
- Fourth
Experience of NSI

Total Number of Experience of NSI

- Yes: 60%
- No: 40%

Mean score of Experience of NSI By University

- Jordan
- Egypt
- Iraq
- Saudi Arabia
Reporting NSI by total students

45% Yes
55% No

Reporting NSI by total students by universities

Jordan
Egypt
Iraq
Saudi Arabia

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Recapping the needle

35% Yes
65% No

Recapping the needle by universities

- Jordan
- Assiut
- Iraq
- Saudi Arabia
Correlation the study level did the NSI occurred by University

<table>
<thead>
<tr>
<th>Items</th>
<th>Jordan</th>
<th>Egypt</th>
<th>Iraq</th>
<th>Saudi Arabia</th>
<th>Total</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second</td>
<td>66(18)</td>
<td>259(69)</td>
<td>20(5)</td>
<td>32(8)</td>
<td>377(72)</td>
<td>0.000</td>
</tr>
<tr>
<td>Third</td>
<td>0(0)</td>
<td>23(22)</td>
<td>76(72)</td>
<td>6(6)</td>
<td>105(20)</td>
<td>0.000</td>
</tr>
<tr>
<td>Fourth</td>
<td>8(44)</td>
<td>7(39)</td>
<td>0(0)</td>
<td>3(17)</td>
<td>18(3)</td>
<td>0.000</td>
</tr>
<tr>
<td>Every year</td>
<td>1(4)</td>
<td>22(85)</td>
<td>0(0)</td>
<td>3(11)</td>
<td>26(5)</td>
<td>0.000</td>
</tr>
</tbody>
</table>
## Correlation the Location of Needle Sticks Injury (NSI) by University

<table>
<thead>
<tr>
<th>Items</th>
<th>Jordan</th>
<th>Egypt</th>
<th>Iraq</th>
<th>Saudi Arabia</th>
<th>Total No &amp; %</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical surgical</td>
<td>15(9)</td>
<td>123(74)</td>
<td>17(10)</td>
<td>11(7)</td>
<td>166(32)</td>
<td>0.000</td>
</tr>
<tr>
<td>ICU</td>
<td>10(20)</td>
<td>8(16)</td>
<td>26(51)</td>
<td>7(14)</td>
<td>51(10)</td>
<td>0.000</td>
</tr>
<tr>
<td>Laboratory</td>
<td>5(24)</td>
<td>7(33)</td>
<td>0(0)</td>
<td>9(43)</td>
<td>21(4)</td>
<td>0.000</td>
</tr>
<tr>
<td>Pediatric</td>
<td>0(0)</td>
<td>7(88)</td>
<td>0(0)</td>
<td>1(12)</td>
<td>8(1)</td>
<td>0.000</td>
</tr>
<tr>
<td>Emergency</td>
<td>34(31)</td>
<td>15(14)</td>
<td>50(45)</td>
<td>11(10)</td>
<td>110(21)</td>
<td>0.000</td>
</tr>
<tr>
<td>Other</td>
<td>11(7)</td>
<td>153(91)</td>
<td>0(0)</td>
<td>4(2)</td>
<td>168(32)</td>
<td>0.000</td>
</tr>
</tbody>
</table>
Reasons for didn't report

- Did not know how to report: 34%
- Too embarrassed: 31%
- Too busy: 8%
- Worried about grades: 6%
- Lack of appreciation: 4%
- Others: 17%
## Risk and Safety concerning NSIs Incidence and circumstances

<table>
<thead>
<tr>
<th>Variables</th>
<th>Jordan</th>
<th>Egypt</th>
<th>Iraq</th>
<th>Saudi Arabia</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience of NSI</td>
<td>0.46</td>
<td>0.39</td>
<td>0.49</td>
<td>0.27</td>
<td>0.4</td>
</tr>
<tr>
<td>Did you tell someone</td>
<td>0.57</td>
<td>0.57</td>
<td>0.55</td>
<td>0.43</td>
<td>0.55</td>
</tr>
<tr>
<td>Did you recap the needle</td>
<td>0.09</td>
<td>0.43</td>
<td>0.25</td>
<td>0.45</td>
<td>0.35</td>
</tr>
<tr>
<td>Have you done any blood test after injury</td>
<td>0.17</td>
<td>0.15</td>
<td>0.43</td>
<td>0.43</td>
<td>0.15</td>
</tr>
</tbody>
</table>
CONCLUSIONS

• The results of this study point to the fact that there were high percentage of students exposed to needle stick and this is a serious indicator. As well as the consequences this confirms the lack of knowledge and experience among students toward recapping the needle, reporting and doing a blood test after the injury.
Also not all students had awareness about the global preventive measures, acupuncture safety device or how to deal with the contaminated needle.
• There is a risk of acquiring blood-borne infections through NSI, as the students admitted to not following all the standard precautionary measures, indicating a lack of adequate knowledge among these students about the consequences of needle stick injuries.
• Therefore, proper steps are needed to promote the awareness of and educate students about the dangers and prevention of injuries.
Thank You