ASSESSMENT OF NEEDLESTICK AND SHARP INJURIES AMONG THE HOSPITAL STAFF

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ABSTRACT:
Needle stick and Sharp injuries are a piercing body trauma caused by a sharp medical equipment that was used to screen, diagnose, treat or follow a patient’s disease conditions. Needlestick injuries are a hazard for people who work with hypodermic syringes and other needle equipment. This cross-sectional study was conducted in different hospitals of Punjab. Two hundred and thirty health staff workers including house officers, postgraduate residents, medical officers, nurses, technicians, and janitorial staff was included in this
study. All these persons were given a predefined proforma and responses were collected. One hundred and eighty persons returned the proforma. The mean age of the respondents was 28.45±3.45 years, the mean age of males was 30.34±2.47 and the mean age of females was 27.98±1.20 years. Ninety-five (52.77%) respondents were injured during their duties and 85 (47.23%) were not injured.

**Keywords: Needlestick Injuries, Health staff, Sharp Injuries**

**INTRODUCTION:**
Sharps include needles, as well as items such as scalpels, lancets, razor blade, scissors, metal wire, retractors, clamps, pins, staples, cutters, and glass items. Essentially, any object that is able to cut the skin can be considered as sharp. Needle stick and Sharp injuries are a piercing body trauma caused by a sharp medical equipment that was used to screen, diagnose, treat or follow a patient’s disease conditions. Needlestick injuries are a hazard for people who work with hypodermic syringes and other needle equipment. These injuries can occur at any time when people use, disassemble, or dispose of needles. When not disposed of properly, needles can hide in linen or garbage and
injure other workers who encounter them unexpectedly (1-3).

Accidental occupational injuries to health care workers continue to have a significant problem in the healthcare system owing to the associated risks. Globally, more than 35 million healthcare workers suffer from occupational needle stick and sharp injury every year. Most (86%) occupationally related infections are due to needle stick injury. An estimated 500,000; 100,000 and 600,000–800,000 needle sticks and other percutaneous injuries were reported annually in Germany, UK, and USA HCWs, respectively. The risk of pathogen transmission from an injury with a sharp object has been estimated to be 6–30% for Hepatitis B virus, in non-immune individuals, 5–10% for Hepatitis C virus, and 0.3% for human immunodeficiency virus (4-6).

The rate of injury is different according to the type and conditions of work, specialty, and type of ward. The operating rooms, intensive care units, and emergency department, due to the special and critical conditions of patients, different stressors, and teamwork of activities that may increase the risk of injuries, they are more likely to be injured by sharp objects. For example, the surgical team is at high risk of needle stick injury due to frequent contact with the secretions and blood of patients and sharp objects. The results of the studies indicate that the highest prevalence of NSI is related to
the operating room, and its staff has the most contact with sharp objects such as needles, suture needles, and surgical blades. A study in China suggests that emergency staff and ICU staff are more likely to needle stick injury. Moreover, in another study conducted in Iran, the emergency department is described as the most dangerous ward (7-9).

MATERIAL AND METHODS:
This cross-sectional study was conducted in different hospitals of Punjab. Two hundred and thirty health staff workers including house officers, postgraduate residents, medical officers, nurses, technicians, and janitorial staff was included in this study. All these persons were given a predefined proforma and responses were collected. One hundred and eighty persons returned the proforma. All the data was entered in SPSS Ver. 25.0. The qualitative variables were presented as frequency and percentages. The quantitative variables were presented as mean and standard deviation.

RESULTS:
The mean age of the respondents was 28.45±3.45 years, the mean age of males was 30.34±2.47 and the mean age of females was 27.98±1.20 years. Out of 180 respondents, 90 (50%) were males and 90 (50%) were
females. The distribution of the respondents given in Table-I.
Ninety-five (52.77%) respondents were injured during their duties and 85 (47.23%) were not injured.
Fifty-four (60%) females and forty-nine (54.44%) males had suffered from needlestick and sharp injury during their duties. The distribution of respondents with reference to the injuries is tabulated in table-II.

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>House Officers</td>
<td>18</td>
<td>13</td>
<td>31</td>
</tr>
<tr>
<td>Janitorial Staff</td>
<td>5</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Medical Officers</td>
<td>21</td>
<td>16</td>
<td>37</td>
</tr>
<tr>
<td>Nurses</td>
<td>5</td>
<td>28</td>
<td>33</td>
</tr>
<tr>
<td>Postgraduate Residents</td>
<td>34</td>
<td>25</td>
<td>59</td>
</tr>
<tr>
<td>Technicians</td>
<td>7</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>90</td>
<td>90</td>
<td>180</td>
</tr>
</tbody>
</table>

Table-I: Distribution of respondents

Status of Injury

- Injured: 95
- Not Injured: 85
**DISCUSSION:**

Among healthcare workers, nurses and physicians appear especially at risk; those who work in an operating room environment are at the highest risk. An investigation among surgeons indicates that almost every surgeon experienced at least one such injury during their training. More than half of needlestick injuries that occur during surgery happen while surgeons are sewing the muscle or fascia. Within the medical field, specialties differ regarding the risk of needlestick injury: surgery, anesthesia, otorhinolaryngology (ENT), internal medicine, and dermatology have high risk, whereas radiology and pediatrics have relatively low rates of injury (10-12).

In the United States, approximately half of all needlestick injuries affecting health care workers are not reported, citing the long reporting process and its interference with work as their reason for not reporting

<table>
<thead>
<tr>
<th>Category</th>
<th>Injured</th>
<th>Not Injured</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>House Officers</td>
<td>19</td>
<td>12</td>
<td>31</td>
</tr>
<tr>
<td>Janitorial Staff</td>
<td>5</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Medical Officers</td>
<td>21</td>
<td>16</td>
<td>37</td>
</tr>
<tr>
<td>Nurses</td>
<td>18</td>
<td>15</td>
<td>33</td>
</tr>
<tr>
<td>Postgraduate Residents</td>
<td>28</td>
<td>31</td>
<td>59</td>
</tr>
<tr>
<td>Technicians</td>
<td>4</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>95</strong></td>
<td><strong>85</strong></td>
<td><strong>180</strong></td>
</tr>
</tbody>
</table>
an incident. Physicians are particularly likely to leave a needlestick unreported, citing worries about loss of respect or a low risk perception. Low risk perception can be caused by poor knowledge about risk, or an incorrect estimate of a patient’s risk. The high prevalence of needlestick emphasizes the importance of promoting awareness, training, and education for healthcare workers as a part of preventive strategies. To reduce the incidence of these injuries, managers of health centers should consider preventive approaches such as maintaining safety measures in work environment, providing complete vaccination coverage, and a reliable reporting system to confront with this problem. In addition, in the operating room, the surgical team can reduce the occurrence of injuries using the hands-free technique and disposing of sharp objects (13-15).

REFERENCES: