

## KNOWLEDGE, ATTITUDES AND PERCEPTIONS OF NURSES REGARDING OCCUPATIONAL HEALTH HAZARDS IN TERTIARY CARE HOSPITALS OF PAKISTAN

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### **ABSTRACT**

#### **OBJECTIVE**

To assess the knowledge attitude and perception of Nurses about Occupational hazards.

#### **METHODOLOGY**

A descriptive cross-sectional study design using a sample of 250 registered nurses was selected at Jinnah and Mayo Hospital Lahore. A Non-Probability convenient sampling was used. Data was analyzed with the help of SPSS software (version 21). The data was presented in a form of descriptive statistics (Frequencies and percentages), tables and graphs were used. The association of Demographic factors with the Knowledge, attitude, and perceptions of nurses regarding occupational hazards was tested through Chi square.

#### **RESULTS**

Majority of the respondents were having good knowledge about occupational hazards (60.8%), while 39.2% had poor knowledge about occupational hazards. The positive attitude towards the occupational hazards and safety measure was among 58%, whereas 32% were found to have negative attitude. The awareness and attitude of nurses regarding occupational hazards was significantly associated with their working experience, education level and marital status ( $P$ . Value<0.05).

#### **CONCLUSION**

The level of knowledge, attitude and perception towards occupational hazards was varying with education and experience. There is need to introduce some educational sessions for the nurses about the safety measures and management against occupational hazards.

**KEYWORDS:** Nurses Knowledge, Attitude, Perceptions, Occupational Hazards, Health care facility.

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### **INTRODUCTION**

Nurses are very important and integral component of the health care delivery system. It is believed that worldwide, the health care services are grabbing the attention of stakeholders. During the

last decades, the developed as well as developing countries in the world has achieved many milestones of improvement.<sup>1</sup> The health status is affected badly by many factors where one main factor is Occupational Hazards. Hazards are such substances or agents which have some potentials or properties that can cause undesirable consequences to health of individuals or groups of people. Thus occupational hazards are termed as workplace undesirable activities that can cause an injury or ill health among the health care workers at their work place.<sup>2</sup> Health professional's health can be affected by their working environment. If the environment is healthy, free of hazards, they will be healthier. If the working environment is not supportive, it can

have bad consequences for the health care workers.<sup>3</sup> Thus, occupational hazards here refer to all kinds of risks, the employees face or are exposed to at their workplace while they are performing their duties. According to research study, Mechanical hazard is the most common hazard faced by nurses and other health care workers which include complain of back pain/injury because of manual heavy lifting of patients. This is a leading hazard for the nurses because their routine daily activities include lifting of patients, turning them, moving and adjusting beds manually.<sup>4,5</sup> It is shown that high workload with inappropriate body mechanics at ICU among nurses leads to a high rate of spinal injuries among nurses which make the uncomfortable and in pain. At these critical care units the nurses bend over more frequently during provision of care, which lead them to serious issues of back ache problems.<sup>6</sup> Communicable diseases and contagious conditions through exposure to body fluids and blood borne diseases like HIV, HCV, HBV is very high due to sharp injuries which threaten and compromise the health of nurses. Study showed a very alarming high prevalence of needle stick injuries worldwide. Among the sharp injuries the top rating injuries are, Injections (21%), suturing (17%), while blood drawing is (16%).<sup>7,8</sup> Moreover, nurses working at hospitals have a greater risk of exposure towards different other occupational risk agents/factors, such as inhaled medicines and many chemicals coming in direct contact and damage them. There are conditions which make the scenario worst such as inappropriate use of latex gloves, mishandling of different chemical solutions, unsafe preparation and administration of antineoplastic drugs, prolong unsafe exposure to anesthetic dangerous gases.<sup>9</sup> Another research finding show that emotional exhaustion among nurses and changes in their personality scores are higher, which decrease the sense of personal accomplishments and achievements. They lead to Burnout, due to unnecessary emotional exhaustion and they become dissatisfied with their duties, jobs and lives.<sup>10,11</sup>

While reviewing Pakistani literature regarding the occupational hazards among the nurses it was found that depression among nurses was at a very high level.<sup>12</sup>

Statistically it is shown that 32.1% of Needle stick injuries happen during recapping, while 24.5% of NSI occur during opening syringe cap.<sup>13</sup> Hepatitis b and C are the most devastating diseases which rises because of needle stick injuries among nurses. The prevalence of needle stick injuries is at a

highest level in Pakistan as compare to other part of the world, because of lack of awareness and application of universal precaution for self and patient's safety.<sup>14</sup> With the help of this study after finding the Knowledge, attitude and perceptions of Nurses were found which might help to decrease occupational injuries and diseases which will improve the quality and reduces the cost of hospital care. Therefore, To assess the knowledge attitude and perception of Nurses about Occupational hazards.

## METHODOLOGY

This study was specifically conducted at 2 tertiary care public hospitals at Lahore. The hospitals include Jinnah hospital and Mayo Hospital. A quantitative nonexperimental approach in the form of cross-sectional descriptive method was applied. A sample of (250) nurses was recruited in the study by taking 95% confidence interval and 5% Margin of error.

A round up. A Non-Probability sampling that is convenient sample used; A structured questionnaire was adopted to collect data. Permission to conduct this research work was requested and granted from Medical Superintendent and Nursing Superintendent of both targeted population hospitals. A verbal and written signed permission were taken from each individual participant of the study to collect data from them. Participants were freely allowed to participate without any force or coercion. They were allowed to withdraw at any time if they want to discontinue the study. Data was analyzed with the help of SPSS software (version 21). The data was presented in a form of descriptive statistics (Frequencies and percentages), tables and graphs were used. The association of Demographic factors with the Knowledge, attitude, and perceptions of nurses regarding occupational hazards was tested through Chi square, which is described in the result section.

## RESULTS

Table-I presents the nurses knowledge regarding occupational hazards and safety. 96% (n=240) of the study participants had knowledge about the possible hazards at hospitals in clinical settings. Based on question on Hands Hygiene, 80% (n=200) of the study participants knew that hand washing is the basic and necessary factor in the prevention of cross infections after the procedure performed by the health care workers. Among the study participants 60% (n=150) were able to

respond correctly that the most needle stick injuries occur while recapping the used needles on the other hand 40% (n=100) participants did not know.

**Table 1: Nurses Knowledge of Occupational Hazards at Hospitals**

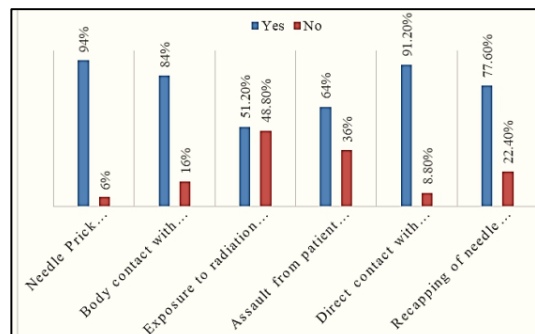
Participants knowledge of occupational hazards	Good Knowledge n (%)	Poor knowledge n (%)
Do you know about hazards at workplace?	240 (96 %)	10 (4%)
Which one of the following is NOT an occupational hazard in this hospital ?	145 (58 %)	105 (42 %)
The MOST likely source of occupational infections is one of the following:	105 (42%)	145 (58 %)
During which of the following activities is a needle stick injury MOST likely to occur?	150 (60 %)	100 (40 %)
Factor that violates universal precaution:	110 (44 %)	140 (56 %)
Hand washing best tool for preventing cross infection	200 (80 %)	50 (20 %)
Awareness of safety practices to avoid occupational hazards:	250 (100 %)	0 (0 %)

The table 1 revealed about some universal precaution guidelines against occupational hazards in terms of awareness as well as practice. The findings showed that awareness about Hand washing with bacterial method is 48.8% (n=122), while practice is among by 50.8% (n=127), while only 30.8% (n=77) are aware and practicing the barrier method and remaining 69.2% (n=173) were aware but not practicing the barrier methods. The awareness as well as practice for Gloves, Gown and Caps among the participants was found as 53.6% (n=134), 8.8% (n=22), and 8.8% (n=22) respectively. The awareness and practice of mask (goggle) was also low that is only 28% (n=70), while the awareness and practice of safe sharp disposal was found relatively high i.e., 71.2% (178). Very few were practicing proper body posturing during clinical procedure which was only 11.2% (n=28) as shown in Table 2.

**Table 2: Awareness and Practice of nurses on Occupational hazards**

Universal Precautions Awareness/Practice	No Awareness No. (%)	Awareness No. (%)
Hand washing with bactericidal agent	01 (0.4%)	122 (48.8 %)
Barrier methods:	0 (0 %)	173 (69.2%)
Gloves	0 (0 %)	116 (46.4 %)
Gowns (apron)	0 (0 %)	228 (91.2%)
Caps	0 (0 %)	228 (91.2%)
Masks (goggles)	0 (0 %)	180 (72%)
Environmental control e.g., effective waste handling	0 (0 %)	121 (48.4 %)
Safe disposal of sharps	0 (0 %)	72 (28.8 %)
Correct body posture during procedures	0 (0 %)	222 (88.8%)

The table 2 revealed the perceptions of study participants about different occupational hazards. Needle pricks were perceived by the highest number of participants 94% (n=235), followed by direct contact with patient's body fluids 91.2% (n=228). Exposure to radiation was perceived as occupational hazards by lowest participants i.e., 51.2% (n=128). Recapping of needles after use and assault from the patients was perceived as occupational hazard by 77.6% (n=194) and 64% (n=160) respectively as shown in table 3.



**Figure 1: Perceptions of Occupational Hazards**

Association of Knowledge and attitude of participants towards occupational hazards with their sociodemographic characters was checked. The following Tables showed the association of different demographic factors with their knowledge and attitude of occupational Hazards. Chi Squares test values it is revealed that Religion and Knowledge of occupational hazards is having significant association (p value= .001). while the Religion and attitude towards are not significantly associated because the P value is greater than .05. The marital status of the participants is significantly associated with the knowledge and

attitude towards the occupational hazards among nurses. The chi square tests are having significant association (p value= .000). The association of the participant's experience with their knowledge and attitude towards occupational hazards revealed a significant association with p value .003 and .000. The association of the participant's qualification with their knowledge and attitude of occupational hazards showed a significant relationship with P value (p values .000).

## DISCUSSION

Health care professionals are always at the risk occupational hazards due to continuous contact with different patients having different infectious and communicable diseases. If there is no skills of protection and lack of knowledge how to deal with such hazards, then the nurses and other health care professionals can pay some serious consequences in terms of damaged health. The risk of exposure to all kinds of occupational hazards is high especially in developing countries like Pakistan. In this current study Ninety six percent (n=240) of the study participants had knowledge about the possible hazards at hospitals in clinical settings. The awareness was very high as compare to another study where less than 50% of the study participants were having knowledge of the occupational hazards.<sup>9</sup> Another research found with the similar findings where 100% of the study participants were aware of the exposure towards the occupational hazards at hospitals.<sup>15</sup> In this study, 44 % (n=110) of the nurses knew that recapping of used needles violate standard precautions. The results are in contrast with another previous study where majority of the study participants had awareness that if used needles are recapped that violate the universal precaution guidelines.<sup>16</sup> The level of awareness and practice for Gloves, Gown and Caps among the participants was found as 53.6% (n=134), 8.8% (n=22), and 8.8% (n=22) respectively whereas the findings were high in previous studies such as glove use awareness was among the 1005 of the previous study participants, and Gown use by 65% which is also high. Moreover, it was stated that gloves use was very high as compare to a low use of wearing gowns.<sup>17</sup> In a previous study majority of the study participants reported high awareness regarding use of gloves 95.4% and gown 84.5% as protective measurement during performing different nursing tasks. Looking at the findings, 48% (n=120) strongly agreed that occupational hazard is a serious issue at hospitals which need solution.

Large number of nurses 32% (n=55) strongly agreed, 36% (n=90) agreed that occupational exposure risk can be reduced through proper training and awareness. Similar findings were found by a previous study where (99 %) of the study participants stressed that capacity building against occupational hazard and safety measures are required extensively.<sup>18</sup> Study findings revealed that Needle pricks were perceived as the highest occupational exposure by 94% (n=235), followed by direct contact with patient's body fluids 91.2% (n=228) and assault from patients 64% (n=160). The Previous literature also presented similar findings where (94.5 %) perceived needle prick, 92.4% perceived direct contact, and 77.2% perceived assault as occupational hazards.<sup>2</sup> Exposure to radiation was perceived as occupational hazards by lowest participants i.e., 51.2% (n=128). Recapping of needles after use and assault from the patients was perceived as occupational hazard by 77.6% (n=194).<sup>19</sup> It is recommended for all the health care facilities that there should be improvement in the working environment to make it safer and more productive. It is believed that the results findings of this study will help to improve the knowledge and practices of nurses in terms of occupational hazards exposure and handling. It is further believed that findings of such studies will have a strong influence on nurse's approach towards occupational hazards which can lead to the development of guidelines and strategies for effective management and prevention of occurrence of occupational hazards incidences.

## LIMITATIONS

A cross sectional design was used therefore could not develop causation among the different study variables. There are also some chances of respondent bias because in the questionnaire they present whatever their views are. As we know that tertiary care hospitals are the models for best care in any country or city where this study was conducted therefore it is not possible to generalize this study on overall health care facilities in the countries which missing some advanced treatments and equipment.

## CONCLUSION

The level of knowledge, attitude and perception towards occupational hazards was varying with education and experience. There is need to introduce some educational sessions for the nurses

about the safety measures and management against occupational hazards.

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2. **Noor Ul Haq** – Data Analysis/Interpretation; Drafting Manuscript; Critical Revision; Final Approval
3. **Muhammad Zakaria Zakar** - Supervision; Final Approval



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