Saudi Journal of Nursing and Health Care **ISSN: 2616-7921 (Print)**
Abbreviated key title: Saudi J. Nurs. Health. Care. **ISSN: 2616-6186 (Online)**
A Publication by "Scholars Middle East Publishers", Dubai, United Arab Emirates

Knowledge and Attitude of Nursestowards Occupational Hazards in Tertiary Care Hospital, Lahore

Tahira Ghaffar[1*], Afsar Ali[2], Nosheen Noor Ud Din[2]
[1]Post RN BSN Student, National College of Nursing, Lahore, The University of Lahore, Pakistan
[2]Sr. Nursing Instructor, National College of Nursing Lahore, The University of Lahore, Pakistan

Original Research Article

***Corresponding author**
Tahira Ghaffar

Article History
Received: 12.07.2018
Accepted: 22.07.2018
Published: 30.07.2018

Abstract: 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 Aluko *et al*., 2016. In discharging their duties, nurses encounter a variety of occupational health problems which may be categorized into biological, chemical, mechanical, and psychosocial hazards Manyele, Ngonyani, & Eliakimu, 2008. The main aim of this study is to determine the knowledge and attitude of clinical practicing nurses regarding occupational hazards at the selected hospital. A Descriptive Cross sectional design was used to assess the awareness of nurses regarding the occupational hazards and its management. A quantitative non experimental approach was applied. A sample n=200 registered nurses was drawn from the list of all registered nurses at Mayo Hospital Lahore through convenient sampling. A self-administered questionnaire was adopted from a previous study. The adopted questionnaire meets the basic purpose and objectives of this current study. All the questions were written and formulated simply. The data collection tool consists of closed ended questions with Yes and No for Knowledge and Likert scale of agreements and disagreements for Attitude. After the data categorized and entered in to the computer, it will be analyzed with the help of SPSS software (version 21). Religion and Knowledge of occupational hazards is having significant association (p value= .001). Furthermore Marital status of the participants is significantly associated with the knowledge and attitude towards the occupational hazards among nurses. The chi squire tests are having significant association (p value= .000) less than .05. Moreover Knowledge and attitude of occupational hazards showed a significant relationship with having Pearson chi square values (p values .000). In conclusion, the Knowledge ad attitude of occupational hazards was found to be associated with different factors such as Education, Marital status and religion etc.

Keywords: Workplace hazards, Hazards in healthcare facilities, Healthcare workers.

INTRODUCTION

Nurses are an integral component of the health care delivery system. Health sector is growing attention in all over the world. Many developed and also developing countries gained substantial improvement in health sector. Health status plays a crucial role in determining social and economic development of any country. Better health leads to improved efficiency and productivity of labor, eventually leads to economic growth and human welfare and breakage of poverty cycle. "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity [1].

Some factors disturb health status, which are termed as 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 [2].

Nurses may have potential exposure to infectious diseases, musculoskeletal pain, toxic substances, back injuries, and radiations. They also confront hazards such as stress, shift work, and violence in the workplace. There are numerous occupational factors which put nurses in frontline of hazards, such as Working environment, responsibilities, and duties of nurses. In discharging their duties, nurses encounter a variety of occupational health problems which may be categorized into biological, chemical, mechanical, and psychosocial hazards [3].

Mechanical hazard is the most common hazard faced by nurses and other health care workers which include complain of back pain/injury as a result

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 [4].

It seems that work-related musculoskeletal pain and injuries among nurses are common everywhere in all health care facilities. Studies also revealed that body pain mostly affect nurse's legs, due to long standing during long shift hours. The nurses professionals performing long duties while standing most of the time during care delivery such as (bathing of patients, providing oral hygiene, lifting and shifting the patients, feeding, medication administration, applying and removing bandages, collecting samples specimins of patients who are frequently unconscious, or in coma [5].

According to studies, Health care workers, especially nurses in third world countries are at greater risk of infection from blood and body fluids, where the occurance of Hepatitis b is at the top [6]. Health care workers in particular the nurses are at the risk of hazard of HIV/Aids because they provide care to so many patients with such infections on daily basis. Medication administration is the main responsibility of a nurse and during injectable medicin, there are greater chances of needle pricks which is considered as the most common mechanism of transmission of HIV among Health care workers [6].

To make sure the safety of health care workers all kinds of such hazards need to be identified, get awareness regarding them, proper quantification and controlling measure should be taken [7].

Occupation exposure to another dangerous chemical, the ethylene oxide is a greater source of health damage, because it causes very serious health problems like cutaneous injuries and conjunctiva injury, causing leukemia, lymphoma, may also cause gastric and esophageal cancers, may damage to liver and kidney functions, destroy hemoglobin and causes respiratory diseases and so many other abnormalities to health of the nurses [8].

Nurses are exposed to a variety of psycho-social hazards almost everywhere. Some most common stressors are to deal with deaths and dying, working with emotional needs of patients and their families, managing conflicts with patients, families and coworkers and high work load [9]**.**

Another study conducted in Nigeria on health care workers to assess their knowledge, attitude and practice about occupational hazards. The result findings showed that majority of the participants (89%) had knowledge about the most commonly occurring occupational hazards in the health care setup. 70 % of the were aware of the fact that recapping of the needles after use used needles after use violates the guidelines of standard universal precaution. Majority were aware that hand washing after procedure is highly essential for preventing cross infection. The participants' knowledge about the occupational hazards and safety in work place was assessed. The findings were that (57.6%) of the participants had good knowledge while (42.4%) of the responded was having low knowledge regarding occupational hazards and safety measures at clinical work place. Majority of the study participants had knowledge about the types of occupational hazards and respectively they recognized as under. Physical hazards recognize by (82 %) of the participants, chemical occupational hazards by (81.7 %) of the study participants, biological occupational hazard by (72.4 %) of the respondents, and mechanical occupational hazard recognize by (63.8 %) of the participants. It was also found that, a very high number of respondents (99.7 %) had awareness about the safety precautions avoiding different occupational hazards at clinical work places. Furthermore, a very good number of participants (66.9 %) of the study respondents had knowledge of job related professional aids. Study findings revealed a very high awareness about Hepatitis B immunization 98.3 % and Tetanus immunization 87.2 % among the study participants. It was also revealed that 93.1 % of the respondents knew how to follow the post-exposure prophylaxis process and procedure [2].

In a study, it was found that the doctors (65%) and nurses (60%) were found to have good attitude towards the occupational hazards occurring at the health care organizations especially towards the appropriate waste disposal treatment. In comparison the sanitary workers and paramedics were having negative attitude towards the waste disposal treatment management [10]. Literature also found that during a study a large numbers of participants were not following the universal precaution and were not wearing gloves and aprons etc. It was also found that they were not using sharp containers. It was very common that the staff mostly was breaking needles with hands and syringes were left open most of the times this poor attitude and practice was highly associated with more experience of the working staff (p=0.003) [11].

AIMS OF THE STUDY

The main aim of this study is to determine the knowledge and attitude of clinical practicing nurses regarding occupational hazards at the selected hospital.

SIGNIFICANCE OF THE STUDY

The study is very significant because the nurses are highly exposed to many occupational hazards leading them to, high number of sick leaves, very often permanent disability or may be possibly death because of lack of awareness and lack of practice of occupational safety measures. With the help of this study there might be decrease in occupational injuries and diseases which will improve the quality and reduces the cost of hospital care.

This study might improve knowledge and practice of nurses related to occupational health hazards and safety from these hazards in the Mayo and Ganga Ram Hospitals. With the help of this study there will be health improvement of the nursing nurses as well as their patients. As an end result there will be high quality of nursing care because of nurses' awareness and practicing the safety measures.

METHODS

SETTING

The current study was conducted in two tertiary care hospitals of Lahore. The hospitals include Mayo Hospital. The flow of patients into this hospitals is very high because these hospitals are situated in the heart of Pakistan.

DESIGN

A Descriptive Cross sectional design was used to assess the awareness of nurses regarding the occupational hazards and its management. A quantitative non experimental approach was applied. The awareness level, attitude and perceptions of nurses from the above mentioned hospitals were studied quantitatively. The data was collected simultaneously at one point in time therefore called as descriptive cross-sectional study.

POPULATION

The targeted population of this specific study was nurses working at the clinical side of Mayo Hospital Lahore Pakistan

SAMPLING

A sample 200 registered nurses was drawn from the list of all registered nurses at Mayo Hospital Lahore. A Probability sampling that is simple random sample, which is a random selection of the nurses from the list, was used.

RESEARCH INSTRUMENT

A self-administered questionnaire was adopted from a previous study. The adopted questionnaire meets the basic purpose and objectives of this current study. All the questions were written and formulated simply. The data collection tool consists of closed ended questions with Yes and No for Knowledge and Likert scale of agreements and disagreements for Attitude.

METHODS USED TO ANALYZE DATA

After the data categorized and entered in to the computer, it will be 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 findings were then summarized and reported.

STUDY TIMELINE

The data was collected from February, 2018 to April, 2018.

ETHICAL CONSIDERATION

Permission was taken from the Medical Superintendent of the targeted population hospital. A verbal and written signed permission was 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. Their confidentiality and anonymity was ensured, thus their names and home address was not mentioned on the questionnaire form. Their information were not shared anywhere unnecessarily.

RESULTS

Table-1 Sociodemographic table showed that respondents of age group 18-25 years were 32.4% (n=81), 26-35 years were high i.e 44.4% (n=111), 36-50 years were 20.8% (n=52) and above 50 years were 2.4% (n=6). Based on gender analysis all the respondents 100% (n=250) were females. 56% (n=130) of the participants were unmarried while 44% (n=120) of the study participants were married, shown in the given table. Data based on the participants' qualification showed that no one was from MSN/MPH qualified, 22.4% (n=56) were BSN or Post RN BSN, and remaining 77.6% (n=194) were only diploma in general nursing.

Table-1: Demographic frequency

Variable	n	%
Gender of Respondents		
Females	250	100
Males	00	00
Marital Status		
Single	130	56
Married	120	44
Age:		
18-25 Years	81	32.4
26-35 Years	111	44.4
36-50 years	52	20.8
Above 50 years	6	2.4
Qualification of Respondents		
Diploma Nursing	194	77.6
BSN/Post RN BSN	56	22.4
MSN/MPH	00	00

Table-2: Knowledge Regarding Occupational Hazards

Description of knowledge on occupational hazards	High knowledge level	Low knowledge level
	n (%)	n (%)
Do you know about occupational hazards?	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 %)
Which of the following violates the Standard Precautions?	110 (44 %)	140 (56 %)
Hand washing is good to prevent occupational cross infection after procedures	200 (80 %)	50 (20 %)
Are you aware of safety precautions against occupational hazards?	250 (100 %)	0 (0 %)

Knowledge of the participants is shown in Table-2 regarding occupational hazards and safety. Ninety six percent (n=240) of the study participants had knowledge about the possible hazards at hospitals in clinical settings whereas 4% (n=10) had no knowledge of occupational hazards. While 44 % (n=110) respondents had knowledge that recapping used needles after use negates the recommendation in the standard precaution guidelines but 56% responded incorrectly. 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 (Table-2). 42% (n=105) of the study participants had good knowledge that while needle stick injury the body fluids and blood of infected patients is the major cause of cross infection while 58% (n=145) were unaware of the fact. 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-3: Chi-Square Tests for Marital status and Knowledge

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	14.795[a]	1	.000		
Continuity Correction[b]	13.828	1	.000		
Likelihood Ratio	15.003	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	14.735	1	.000		
N of Valid Cases	250				

Looking at the above tables and Pearson Chi Squires values it is revealed that marital status of the participants is significantly associated with the knowledge and attitude towards the occupational hazards among nurses. The chi squire tests are having significant association (p value= .000) less than .05. The married ones are having better knowledge and more positive attitude towards the occupational hazards, which might me their more experience at the work place.

Table-5: Practice Variable about Hospital Waste Management

Perception on occupational hazards	**S. Agree**	**Agree**	**Un-decided**	**Disagree**	**S. Disagree**
	No. (%)	**No. (%)**	**No. (%)**	**No. (%)**	**No. (%)**
Occupational hazard is an issue that should be taken seriously and given prompt attention in the hospital	120 (48 %)	25 (10 %)	80 (32%)	25 (10%)	0 (0%)
Prevention of occupational hazards is a joint responsibility of the hospital management and the staff	20 (8 %)	130 (52 %)	0 (0%)	100 (40%)	0 (0%)
Training of staff and provision of personal protective equipment is necessary to reduce the risk of exposure to occupational hazard	55 (22 %)	90 (36%)	0 (0%)	5 (2%)	100 (40%)
Aprons and face masks should be worn in procedures where splash/spill of blood is likely	60 (24 %)	85 (34 %)	20 (8%)	85 (34%)	0 (0%)
Gloves should always be worn when administering injections, starting IVs and drawing blood	110 (44 %)	55 (22 %)	0 (0%)	85 (34%)	0 (0%)
Hands should be properly washed after each contact with a patient	90 (36 %)	155 (62 %)	0 (0%)	5 (2%)	0 (0%)
Used needles should NEVER be recapped	65 (26 %)	160 (64 %)	25 (10%)	0 (0%)	0 (0%)
Sharps should be disposed in sharps' boxes	85 (34 %)	80 (32 %)	85 (34%)	0 (0%)	0 (0%)
Disposal boxes should be located within a few feet of where you practice	60 (24%)	85 (34 %)	0 (0%)	105 (42%)	0 (0%)
Prolonged standing should be avoided by all health workers	45 (18 %)	100 (40 %)	0 (0%)	105 (42%)	0 (0%)
Adequate staffing of hospitals is a way of reducing occupational hazards	75 (30 %)	175 (70 %)	2 (1%)	0 (0%)	0 (0%)
Exposure and Control policies should be regularly reviewed by the hospital management	210 (84 %)	20 (8 %)	0 (0%)	20 (8%)	0 (0%)

In this study, 48% (n=120) strongly agreed while 10% (n=25) agreed and 32% (n=80) remained undecided agreed with the statement that occupational hazard is an issue that should be taken seriously and given prompt attention in the hospital. 8% (n=20) strongly agreed and 52% (n=130) agreed, while 40% (n=100) disagreed that prevention of occupational hazards is a mutual responsibility of both the management and the staff. 32% (n=55) strongly agreed, 36% (n=90) agreed while 40% (n=100) disagreed that training of staff about personal protective measure is necessary to reduce the risk of exposure to occupational hazard. When the participants were asked whether aprons and face masks need to be worn in procedures where is possibility of splash/spill of blood, 24% (n=60) strongly agreed, 34% (n= 85) agreed, 34% (n=85) disagreed while 8% (n=20) remained undecided with the statement. 44% (n=110) strongly agreed, 22% (n=55) agreed while 34% (n=85) disagreed for the statement that gloves should always be worn when administering injections. 36% (n=90) strongly agreed, 62% (n=155) agreed that hands should be properly washed after each contact with a patient (Table 4). The result of question that used needles should NEVER be recapped got the results such that 26 % (n=65) strongly agreed, 64 % (n=160) agreed while 10% (n=25) remained undecided that it should not be recapped. 34% (n=85) strongly agreed, 32% (n=80) agreed while 34% (n=85) remained undecided that sharps should be disposed in sharps' boxes properly. 18% (n=45) strongly agreed, 40% (n=100) agreed while 42% (n=105) remained undecided that prolonged standing should be avoided because it has a bad impact on health of the nurses and other health care workers. It was agreed upon by all the participants that adequate staffing of hospitals is a way to reduce the severity of occupational hazards. All 100% of the participants agreed that the exposure and Control policies for the prevention of occupational hazards should be reviewed by the health care facilities.

DISCUSSION

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 [8]. Another research found with the similar findings where 100% of the study participants were aware of the exposure towards the occupational hazards at hospitals [12].

According to another previous study only 33 (42%) nurses assessed were having awareness of their clinical area occupational hazards [13]. In this study, 44 % (n=110) respondents had knowledge that recapping used needles after use negates the recommendation in the standard precaution guidelines but 56% responded incorrectly. By a 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. Similar findings were from another previous research, where all respondents had an awareness post procedural effective hand washing is a great essential tool to avoid cross infections among patients and health care workers [2].

In this study, 48% (n=120) strongly agreed that occupational hazard is an issue that should be taken seriously and given prompt attention in the hospital. 32% (n=55) strongly agreed, 36% (n=90) agreed while 40% (n=100) disagreed that training of staff about personal protective measure is necessary to reduce the risk of exposure to occupational hazard. 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 [14].

When the participants were asked whether aprons and face masks need to be worn in procedures where is possibility of splash/spill of blood, 24% (n=60) strongly agreed, 34% (n= 85) agreed with the statement. 44% (n=110) strongly agreed, 22% (n=55) agreed for the statement that gloves should always be worn when administering injections. 36% (n=90) strongly agreed, 62% (n=155) agreed that hands should be properly washed after each contact with a patient while similar findings were discussed by Aluku et al who found hand washing as the leading factor to prevent cross infection in hospitals [2]. 26 % (n=65) strongly agreed, 64 % (n=160) agreed that needle should not be recapped. Previous researches also support the findings that recapping after use is violation of the universal precautions [14].

It was agreed upon by all the participants that adequate staffing of hospitals is a way to reduce the severity of occupational hazards which is supported by different previous studies. All 100% of the participants agreed that the exposure and Control policies for the prevention of occupational hazards should be reviewed by the health care facilities.

LIMITATIONS

- Less sample size 200 due to which, the findings cannot be generalized.
- Time was too short, to see any prospective events or detailed associations of awareness and practices

CONCLUSION

This aim of this study was to determine the awareness and attitude among the registered nurses and their perceptions about the occupational hazards at tertiary care hospitals of Lahore (Mayo Hospital) Lahore.

To achieve this aim a cross sectional survey was conducted where a quantitative descriptive study design was utilized. An adopted valid questionnaire was used through which data was gathered from the registered nurses of selected hospitals, who were involved in direct nursing care. The questionnaire fulfilled all the study dimensions stated in the aim and objectives of the study. Data was analyzed through SPSS version 21 and then presented in descriptive forms of tables, frequencies and percentages. Keeping in mind, the ethical rights of the participants, a written permission was taken from the participants and their concern departments. Looking at the main dimensions of the study as knowledge and attitude of registered nurses towards the occupational hazards the study findings revealed that a sufficient number of study participants had knowledge of occupational hazards. It is concluded that health care facilities require some additional guidelines and safety measures protocols in the clinical practicing areas.

ACKNOWLEDGEMENT

- I am thankful to my Supervisor Sir Afsar Ali and Co supervisor Ms. Nousheen for their support.
- Thanks to the Principal National College of Nursing, the Management of National hospital and college of Nursing.
- I am thankful to the Management of UOL, LSN for giving me such opportunity. Thanks to All Faculty of National CON.

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