

Original Article

Assessing the nurse's knowledge regarding occupational hazards, its pre-disposing and preventive factors.

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Abstract

Background: Nurses are an essential part of the healthcare team and require sound knowledge, safety, and protection from occupational health hazards they encounter at work. Therefore, this study aimed to assess the nurse's knowledge regarding occupational hazards, their pre-disposing, and preventive factors.

Methodology: A descriptive cross-sectional study was conducted among nurses working in surgical, general, ENT, ICU, and gyne ward of the Ziauddin and Civil hospital located in Karachi, Pakistan. A total of 157 registered nurses with a minimum of 6 months of work experience with a valid PNC license were included in the study. Systematic random sampling was used to select participants for the research. The knowledge regarding occupational hazards, pre-disposing factors, and preventive measures were recorded using a structured questionnaire.

Results: Among 157 participants, the highest occurring occupational hazard was neck and back pain, 52.9%. The assessment of pre-disposing factors to occupational hazards revealed that 70.1% of nurses distinguished lack of adequate protective aids and equipment as one of the most common reasons for the occupational hazards. However, it is revealed by 77.7% of participants that proper training and retraining on safety measures, provision of protective aids and equipment could be possible ways of preventing occupational hazards.

Conclusion: It is concluded that occupational health hazards are prevalent among nursing professionals, which can be reduced through owing responsibility, gaining appropriate knowledge and skills, warrant precautionary actions for avoidance to ensure their own and others' health and well-being.

Keywords

Occupational Health Hazards, Nurses, Knowledge, Prevention of Hazards, Pre-disposing Factors of Hazards.



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Introduction

Occupational health is the enhancement of workers' physical, mental, and social well-being that provides support to maintain the work capacity. As defined by the world health organization, occupational health is a combination of multidisciplinary activity, which includes the protection and promotion of workers' health by preventing and controlling diseases and accidents through eliminating occupational hazards¹. Some occupational hazards include biological hazards, physical hazards, toxic chemicals, needle stick injuries². The national institute for occupational safety and health estimated that each year about 100,000 people die due to occupational hazards³.

Nurses are an essential part of the health care team; hence they need safety and protection at work. While performing their duties, nurses encounter a variety of occupational health problems⁴. When work is associated with health hazards, it can lead to many occupational diseases or exaggerate the employees' existing ill health, which may influence not only the individual but also the profession where the employee belongs⁵. Moreover, the working environment and the duration of duty hours put them in the frontline of numerous occupational hazards⁶.

There is limited literature available assessing the knowledge of nurses regarding occupational health hazards in the nursing profession. Occupational health injuries and hazards are well documented in western and developed countries compared to developing and underdeveloped countries⁷. Nurses are usually at the forefront of patient care; therefore, they need adequate knowledge and a positive attitude towards healthcare problems⁸. On the contrary to their roles, studies from different countries have reported a poor knowledge among the nurses regarding HIV/AIDS⁹.

Fewer studies have been done in Pakistan to identify the prevalence of occupational hazards. However, there has been no attempt to conduct a study regarding nurses' knowledge about

occupational hazards in Karachi. Therefore, this study aimed to assess the nurse's knowledge regarding occupational hazards, their pre-disposing, and preventive factors.

Methodology

This descriptive cross-sectional design was commenced at Ziauddin and Civil Hospital located in Karachi, Pakistan. A total of 157 registered nurses with minimum 6 months of work experience in different wards and with valid PNC licenses were included. Systematic random sampling was used to select participants for the research. The study protocol was ethically approved by the Clinical Research Committee (CRC), Ethical Review Committee (ERC), Nursing Board of Studies (NBOS), and Academic Council of Ziauddin University.

The data was collected from May to July 2017 through a self-administered questionnaire based on "Occupational Hazards in Nursing." It was developed by Amosu (2011) and used in the current study with some modifications⁴. Experts in health sciences assessed the content validity of the questionnaire. The reliability of the practice score was assessed by using the Content validity index (CVI). The value for practice was 0.79. An informed consent form was taken from each participant before data collection through a questionnaire. The data collector checked the questionnaire for completeness and appropriateness.

Data were analyzed using SPSS version 21.0; the categorical data were presented as percentages and frequency while continuous data were presented using mean \pm SD.

Results

A total of 157 registered nurses as participants were included in the study. It was found that 114(72.6%) participants were female whereas, 43(27.4%) were males (Table 1). Furthermore, 15(9.6%) nurses had served for over two decades as registered nurses, while 19.8% of nurses served for 11-20 years. Almost 82.2% of nurses had education till matric (secondary school).

Only four nurses completed graduation, and just three nurses had a bachelor's degree, with one having a bachelor in science (B.Sc.) degree and two nurses having bachelor in nursing (BScN) degrees.

Table 1: Demographic characteristics of study subjects.

Variables	n(%)	
Gender	Male	43(27.4)
	Female	114(72.6)
Age Group	< 20 years	06(3.8)
	20-30 years	92(58.6)
	31-41 years	46(29.3)
	42-52 years	13(8.3)
Marital Status	Single	65(41.4)
	Married	92(58.6)
Working Experience	< 5 years	52(33.1)
	5-10 years	59(37.5)
	11-15 years	18(11.5)
	16-20 years	13(8.3)
	> 20 years	15(9.6)
Academic Qualification	Matric	130(82.8)
	Intermediate	21(13.4)
	BA	01(0.6)
	BSc.	01(0.6)
	BScN	02(1.3)
	Not mentioned	02(1.3)

The mean score of nurse's knowledge regarding occupational health hazards was extracted from three sections, i.e., the knowledge of occupational hazards, factors pre-disposing to occupation hazards, and possible ways of preventing occupational hazards. It was found to be 10.01 ± 4.925 ; around 51% scored well, and 49% had poor scores.

The most frequently reported occupational hazard as per the perception of enrolled nurses was neck and back pain (52.9%), followed by the needle stick injury (49%) and muscular disorders (46.9%).

Table 2: Responses on the exposure of occupational hazards as a nurse.

Occupational Hazards	Yes	No
	n(%)	
Back injuries	63(40.1)	94(59.9)
Latex allergy	57(36.3)	100(63.7)
Needlestick injury	77(49)	80(51)
Workplace violence	68(43.3)	89(56.7)
Toxic chemicals	48(30.6)	109(69.4)
Muscular disorder	73(46.5)	84(53.5)
Neck and back pain	83(52.9)	74(47.1)
Exposure to radiation	69(43.8)	88(56.2)

The pre-disposing factors to occupational hazards as per the nurse's knowledge are given in table 3. It is important to mention that according to 70.1% nurses, lack of adequate protective aids and equipment is the primary cause of occupational hazards among healthcare professionals. The second most common hazard was negligence and carelessness on the part of the nurses (66.9%).

Table 3: Knowledge of nurses on the pre-disposing factors to occupational hazards.

Factors	Yes	No
	n(%)	
Negligence and carelessness on the part of the nurses	105(66.9)	52(33.1)
Lack of adequate protective aids and equipment	110(70.1)	47(29.9)
Shortage of staff	96(61.1)	61(38.9)
Excessive workload	99(63.1)	58(36.9)
Prolonged standing	96(61.1)	61(38.9)
Lifting of heavy objects and equipment	93(59.2)	64(40.8)
Failure to observe simple safety and hygiene rules	96(61.1)	61(38.9)
Lack of knowledge of usage of modern facilities	70(44.6)	87(55.4)

The responses of nurses over the ways of preventing occupational hazards are presented in table 4. Proper training and retraining on safety measures, provision of protective aids and equipment, and employment of more nurses and aids could be possible ways of preventing occupational hazards, according to 77.7% of the nurses.

Table 4: Knowledge of nurses regarding ways of prevention of occupational hazards.

Ways of preventing occupational hazards	Yes	No
	n(%)	
Proper training and retraining on safety measures	122(77.7)	35(22.3)
Provision of protective aids and equipment	122(77.7)	35(22.3)
Employment of more nurses and aids	122(77.7)	35(22.3)
Avoidance of prolonged standing	107(68.2)	50(31.8)
Strict adherence to simple safety rules	112(71.3)	45(28.7)
Avoiding lifting of heavy equipment	103(65.6)	54(34.4)
Observance of simple hygiene rules	114(72.6)	43(27.4)
Use of protective gadgets	104(66.2)	53(33.8)
Proper training and retraining on safety measures	122(77.7)	35(22.3)

Discussion

The present study highlighted different aspects of nurses' knowledge regarding occupational health hazards in public and private tertiary care hospitals. To the best of our knowledge, this is the first-ever study of a kind carried out in Karachi, Pakistan, on the knowledge of occupational hazards, their association with pre-disposing factors, and preventive measures. The study depicted that 51% of the participants had good knowledge; however,

the rest had inadequate knowledge regarding occupational health hazards. It was also identified that the mean level of knowledge was not satisfactory among the participating nurses, and these findings are in line with the previously reported study¹⁰.

The present study results showed that the participants were aware and responded towards the positive association between occupational hazards and the nursing profession. Around 82%

of the participants confirmed that professionals in nursing have a high risk of exposure to occupational hazards, and similar findings are reported by the earlier research, highlighting the fact that nurses and other health personnel are irrefutably at risk of occupational exposure health hazards^{4, 11-13}.

The participants of the study, when asked for the exposure of different occupational hazards, reported that neck and back pain was one of the commonest hazards faced by them, whereas; after it was needle stick injury. The additional frequent hazards identified by nurses were toxic chemical exposures, back injury, latex allergies, workplace violence, muscular disorders, and radiation exposure. There is a need for a larger-scale study, including other provinces of Pakistan, to corroborate the findings,. Any additional factual disclosure of extra hazards may be beneficial towards the alleviation of the occupational hazards faced by the nursing personals. A few smaller studies that have addressed and reported some of the aspects highlighted in the present study are found to be in lieu of the current findings^{10, 12}.

This study, therefore, revealed that nurses are aware of different kinds of health hazards in the nursing profession and properly focus on them to improve their work and living conditions. It is observed in the current study that the respondents were able to suggest ways for prevention or minimization of their exposure to the occupational hazards. some of which included availability and proper utility of protective aids, strict adherence to simple safety rules and guidelines, avoidance of lifting heavy equipment, and circumventing prolonged standing. However, findings from other studies revealed that adequate provision of appropriate safety kits implementing robust policies, routine training, and precautionary safety exercises should be institutionalized for the betterment of health care workers towards evasion of occupational hazards and safety practices¹³⁻¹⁵.

In the current study, participants also highlighted risks and perils happening at their own hands due to negligence and non-prudent behaviors of the

nurses, prolonged standing during duty hours, failure to follow safety rules, lifting of the patients and other heavy equipment, excessive workload, and lack of protective devices. These inferences were in line with the results of previous studies, which reported these hazards as a common occurrence in the nursing profession^{4, 13, 15}.

The strengths of the current study included the acquisition of knowledge by registered nurses regarding occupational health hazards, which has not been studied previously in any public or private hospitals in Karachi, Pakistan. The participants included in the study were selected from both the public and private hospitals in Karachi, Pakistan, who provided the baseline data for future studies. One of the study's major limitations included the time constraints for the Master's thesis that resulted in the quantitative approach towards the study. However, there is a dire and urgent need to work on this issue in detail. Although the participants' responses in the study were elicited via a self-reported structured questionnaire, the chances of the response bias could not be completely eliminated, as there is a possibility that participants may have answered the questions deemed appropriate to please the data collector. The present study was not comprehensive as only two hospitals in Karachi were included for the recruitment of registered nurses as participants of the study. The future implications proposed are that all nurses must be trained to prevent occupational health hazards and follow defined guidelines.

Moreover, they must report any occupational injury and take treatment accordingly. Training sessions be conducted for the nurses to improve awareness regarding occupational health hazards and their preventive measures. Management should make pertinent policies to prevent occupational health hazards among nurses at all levels. The nursing curriculum must be included as a skill pack to prevent hazards and enhance good clinical practices.

Conclusion

It is concluded that nursing professionals face a significant number of occupational health hazards, and it is found in the present study that a nurse's knowledge regarding preventive measures is significantly associated with occupational hazards. The management and nurses themselves are responsible for ensuring precautionary actions to avoid occupational health hazards and ensure their health and well-being. These vulnerabilities can be reduced through making appropriate and applicable policies and complying with them strictly. This will ultimately enhance the quality of care of the patient and improve the hospital's reputation in terms of quality and good clinical practices.

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Conflicts of Interest

The authors have declared that no competing interests exist.

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