

Occupational Health Hazard among Health Care Workers in a Tertiary Care Hospital, Lahore

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Abstract

Background: Occupational health is a neglected public health issue among healthcare workers in developing countries and they may expose them to various forms of hazards.

Objectives: The study aims at exploring the forms of occupational health hazards among nurses in a tertiary care hospital, Lahore

Methods: Total 151 staff nurses were enrolled for cross-sectional descriptive study to explore the occupational health hazard. This study was conducted at Lahore General Hospital, Lahore for the duration of **02, 2021, to January 01, 2022**. Only charge nurses working in medical and surgical units on permanent basis having experience more than six months were included.

Results: The findings of this study showed that the mean age of the nurse was 25.87 ± 3.138 years (age range 21-32 year), the female nurse was 127(84.1%) while 24(15.9%) were male nurse. The participants faced occupational health hazards 51.8%, biological hazards 73.5%, and physical hazards 59.2% and mechanical and psychology Hazards among Nurse 48.8% and 52.0% respectively.

Conclusion: Occupational risks (biological hazards) are very common among the nurses in Lahore General Hospital, Lahore. To protect patients and medical staff, hospitals should implement preventative, infection control, and patient safety initiatives.

Keywords: Occupational hazards; Health workers; Lahore General Hospital

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Introduction

According to the World Health Organization (WHO),⁽¹⁾ an estimated 59 million people work in healthcare facilities globally, accounting for roughly 12% of the working population. The WHO⁽²⁾ also reports that all healthcare workers, including healthcare professionals, are exposed to occupational hazards. The International Labour Organization (ILO)⁽³⁾ reported that millions of healthcare workers suffer from work-related diseases and accidents, and many succumb to occupational hazards. Scholars and practitioners in the field of healthcare and occupational health and safety (OHS) are striving to raise awareness of the risk factors and importance of workplace health and safety among this population.^(1,3,4)

Healthcare workers provide patient care in environments that are considered to be one of the most unsafe occupational settings. Occupational hazards that include biological, chemical, physical, ergonomic, psychosocial, fire and explosion, and electrical hazards⁽⁵⁾ threaten healthcare worker lives, safety, and well-being. Globally, it is estimated that 1 in 10 healthcare workers, experience a sharp injury every year.⁽⁶⁾ In the year 2000, sharp injuries to healthcare workers resulted in 16,000 hepatitis C virus (HCV) infections, 66,000 hepatitis B virus (HBV) infections, and 1,000 human immunodeficiency virus (HIV) infections. The impact of these infections is significant. Between 2000 and 2030, these infections are estimated to cause 145 premature deaths due to HCV, 261 premature deaths due to HBV, and 736 premature deaths due to HIV.⁽⁷⁾ Schulte et al.⁽⁸⁾ defined an occupational hazard as the short term and long-term dangers or risks associated with unhealthy workplace environments. Tullar et al.⁽⁹⁾ and Joseph and Joseph⁽¹⁰⁾ stated that the healthcare workers at greatest risk are doctors, healthcare professionals, nurses, laboratory technicians, and medical waste handlers. Occupational hazards pose health and safety risks and have negative impact on the economy, which accounts for roughly a 4% loss in global annual gross domestic product (i.e. \$2.8 trillion annually).⁽³⁾ The WHO,⁽²⁾ ILO,⁽³⁾ and Nelson et al.⁽¹¹⁾ noted a lack of universally applicable data on the impact of occupational hazards. Healthcare workers operate in an environment that is considered to be one of the most hazardous occupational settings.⁽¹²⁻¹⁴⁾

Occupational hazards are defined as workplace issues that have likely to raise the hazard of our health, which can be categorized as biological and non-biological. Nurses are challenges with physical, chemical, and psychological hazards. For example, moving the immobilized patients exposes workers to back injury and back pain. Moreover, during high workload and insufficient resources and equipment, healthcare professionals are faced with psychological hazards such as stress and depression.⁽¹⁵⁾ One of the commonest occupational hazards

is a needle stick and sharp injury that occurs during commonly during nursing procedures like administering medications, administering or receiving blood, and performing other nursing activities containing sharp materials. The major causes of a needle stick and sharp injury are poor awareness of healthcare providers about the usage of sharp materials, its risks, and the prevention of a needle stick injury and proper waste disposal.⁽¹⁶⁾

The major areas in which nurses perform hazardous tasks were injection, cleaning, patient care, bed making, cleaning and dressing of wounds, medication administration, and performing operations. During performing these activities, healthcare providers are exposed to many types of hazards including physical, chemical, mechanical, and biological hazards. During clinical practice, Nursing and Midwifery students are exposing to occupational hazards during performing skills such as assisting and delivering baby, administering, and handling various types of fluids and medications, and many nursing skills including wound dressing.⁽¹⁷⁾

Another study conducted in 2021 Amare et. al, (2021) regarding the occupational hazards among nurses and a sample of 151 students had participated with a response rate of 100%. The prevalence of psychosocial hazards, mechanical hazards, biological hazards, and physical hazards was 140 (92.7%), 128 (84.8%), 100 (66.2%), and 100 (66.2%), respectively. About 46 (29.8%) had good knowledge, and 57 (37.7%) of them had poor knowledge of the occupational hazard. Moreover, psychosocial hazard was the most common occupational hazard among nursing and midwifery.⁽¹⁸⁾

Methodology

Cross-sectional descriptive study design was used to explore the occupational health hazard among nurses in a tertiary care hospital Lahore, Pakistan. This study was conducted at Lahore General Hospital, Lahore for the duration of 02, 2021, to January 01, 2022 after the approval of the ethical review board and total 151 staff nurses were interviewed. Purposive sampling was used to select the participants. Only charge nurses working in medical and surgical units on permanent basis having experience more than six months were included while nurses working in medical and surgical units, who were not involved in direct patient care e.g., Head nurses, Clinical Instructors and Nurse Managers and nurses who have worked for less than six months were excluded.

Results:

Table 1: Characteristics of the participants (n=151)

Variables	Frequency	Percentage
Age Group (years)	25.87 ± 3.138 (Age Rang 21-32years)	
Grouped Age	21-23	42 27.81%
	24-26	49 32.45%
	27-29	37 24.51%
	30-32	23 15.90%
Gender	Male	24 15.9%
	Female	127 84.1%

Graph 1: Graphical Presentation with respect to Gender

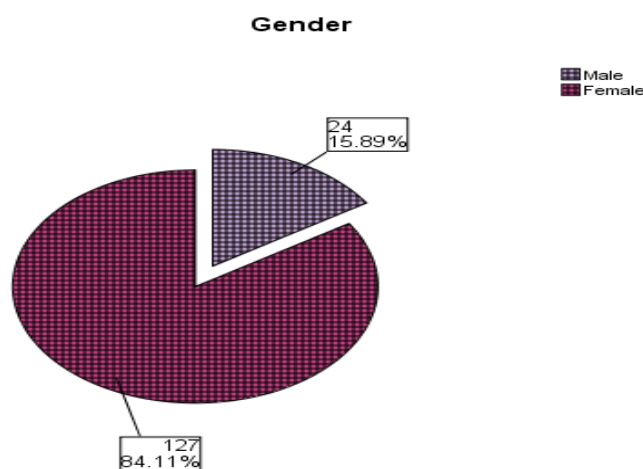
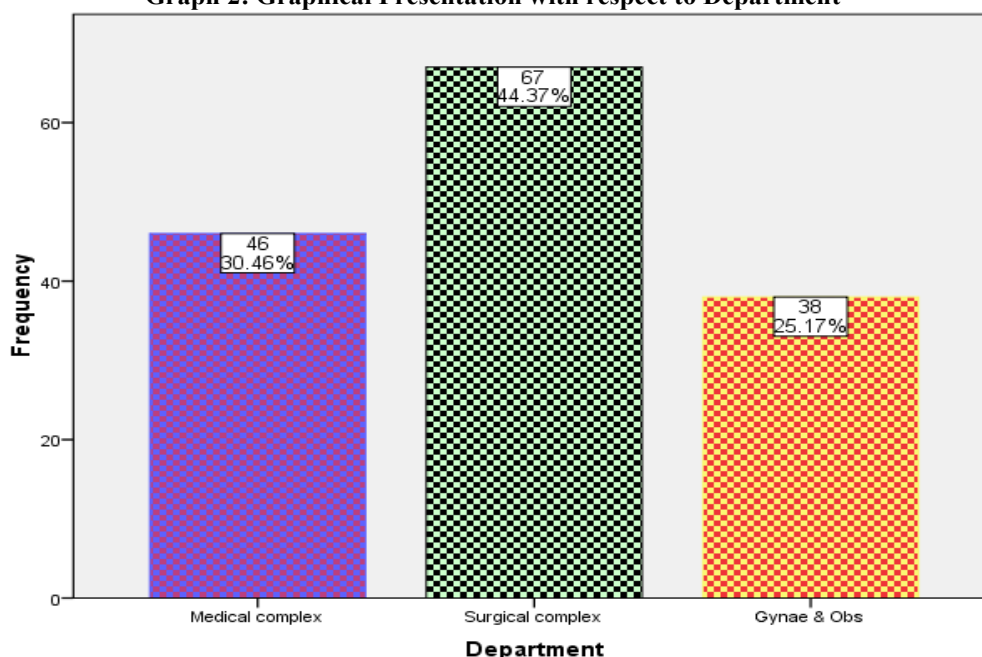


Table-1 and Graphs-1 showed that the mean age of the students was 25.87 ± 3.138 years with range from 21-32 years and maximum participants having age between 24-26 year as 49(32.45%), the female nurses was 127(84.1%) while 24(15.9%) were male nurses.

Table 2: Demographics Information of the Research Participants (N=151)

Variables		Frequency	Percentage
Marital Status	Single	48	31.79%
	Married	103	68.21%
Department	Medical complex	46	30.46%
	Surgical complex	67	44.37%
	Gynae & Obs	38	25.17%
Currently Enrolled in	Diploma In Midwifery	35	23.18%
	Diploma In General Nursing	56	37.09%
	Bachelor Of Science In Nursing (Post Rn)	41	27.15%
	Bachelor Of Science In Nursing (Generic)	19	12.58%
Duty shift	Morning	50	33.11%
	Evening	51	33.78%
	Night	50	33.11%

Graph 2: Graphical Presentation with respect to Department



The results of Table -2 and Graph-2 showed that the majority of nurses were married as 103(68.21%) and mostly nurses performing their duty in surgical complex 67(44.37%). Research partisans enrolled in Diploma in General Nursing 56 (37.09%) and working in evening shift as 51(33.78%) .

Table 3: Knowledge regarding Occupational Health hazards

Hazards	Yes (%)	No (%)
Occupational Health Hazards	51.8%	48.2%
Biological Hazards Among Nurses	73.5%	26.5%
Physical Hazards Among Nurses	59.2%	40.8%
Mechanical Hazards Among Nurses	48.8%	51.2%
Psychosocial Hazards Among Nurse	52.0%	48%

This study was conducted on 151 nurses to evaluate the health hazards among nurses working at medical, surgical and Gynae wards and results revealed that the 51.8% nurses have faced Occupational Health Hazards, 73.5% have Biological Hazards , 59.2% faced Physical Hazards , 48,8% observed Mechanical and psychology Hazards Among Nurse 48.8% and 52.0% respectively.

Discussion

“World patient safety day” is marked every year on 17 September by the WHO to promote patients’ safety through different programs collaborating with its all-key stakeholders. Patients’ safety is considered one of the global public health priorities. The WHO observed the World Patient Safety Day, 2020, with the theme of “Health worker safety: a priority for patient safety.” This reiterates the need for a safe and healthy working condition for Health care workers (HCWs) as an essential component for protecting patient safety. Health care

workers (HCWs) working in different health care facilities are exposed to many hazard.

The findings of current study showed that the mean age of the students was 25.87 ± 3.138 years with range from 21-32 years and maximum participants having age between 24-26 year as 49(32.45%), the female nurses were 127(84.1%) while 24(15.9%) were male's nurses. The majority of nurses of current study were married as 103(68.21%) and mostly nurses performing their duty in surgical complex 67(44.37%). Research partisans enrolled in Diploma in General Nursing 56 (37.09%) and working in evening shift as 51(33.78%).

Similar study conducted by Ndejjo et. al (2015), their research population comprised a range of healthcare workers working in selected health facilities. These included doctors, nurses, clinical officers, and midwives. They illustrated their findings that the 200 participants, the majority were females (71.5%), were of age over 30 years (55.0%), were married (53.5%), were Christians (86.5%), Just over half were nurses (50.5%), 41% worked in private health facilities and 53.0% had practiced for five or more years.⁽¹⁹⁾

In 2018 a study conducted regarding the occupational health hazards by Zarrini et. al, (2018) and results revealed that the, 75.1% of the nurses were female and 50.9% of the participants were within the age range of 26–35 years. The total mean and standard deviation of occupational hazards was 3.20 ± 0.66 . In addition, the mean values and standard deviations of chemical, ergonomic, biological, psychosocial, and organizational, as well as physical hazards were reported. According to the results, significant differences were observed between occupational hazards and variables of gender, marital status, educational level, and work experience ($P = 0.0001$). Occupational hazard level was moderate among nurses in the ICUs.⁽²⁰⁾

The current study enrolled 151 nurses to evaluate the health hazards among nurses working at medical, surgical and Gynae wards and results revealed that the 51.8% nurses have faced Occupational Health Hazards, 73.5% have Biological Hazards, 59.2% faced Physical Hazards, 48.8% observed Mechanical and psychology Hazards Among Nurse 48.8% and 52.0% respectively.

The findings of research conducted by Shreedharan et.al, (2020), they illustrated their results and found overall magnitude biological hazard, physical hazard, mechanical hazard, and psychological hazard were 66.2%, 66.2%, 84.8%, and 92.7%, respectively. Of the exposed students 77 (53.5%) of them were females. The occupational hazard based on their experience was 56 (38.9%), 38 (26.4%), and 50 (34.7%) for two, three and four years respectively⁽²¹⁾.

A study published in 2019 in Africa conducted by Mossburg et. al, (2019) regarding occupational hazards and reported a variety of exposures. The lifetime prevalence of needle stick injury ranged from 22–95%, and one-year prevalence ranged from 39–91%. Studies included a range of descriptive statistics of knowledge, attitudes, and practice and access factors related to exposures. Two studies reported 21–32% of respondents linked poor knowledge or training with prevention of needle stick injuries. Rates of recapping needles ranged from 12–57% in four studies. Attitudes were generally positive toward occupational safety procedures while access was poor.⁽²²⁾

A cross-sectional study conducted by Bin-Ghouth et. al (2021) among health workers in the main hospitals in Mukalla city in Hadhramout province in eastern Yemen. The prevalence of biological hazards among the healthcare workers accounted for 298 (76%) whereas the non-biological hazards accounted for 306 (78%). The most prevalent biological hazards are needle prick injury (80%) followed by exposure to contact with contaminated material (75%), while the most frequent non-biological hazards are back pain (79%) followed by extra-time work (72%). In logistic regression age, gender and duration of work and professional category have significant association with exposure of health workers to biological hazards while only gender is the only variable associated with non-biological hazards.⁽²⁴⁾

Conclusion

According to this study nurses are at higher risk of occupational hazards due to psychological, biological, physical hazard, and mechanical hazards. Biological hazard is the most common occupational hazard among nurses during clinical practice. This study shown that the majority of the Nurses have poor knowledge regarding occupational hazards at the clinical practice. The majority of the students have a feeling of stress from fear of occupational hazards while caring for a patient.

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