



ISSN (E): 2277-7695
 ISSN (P): 2349-8242
 NAAS Rating: 5.23
 TPI 2023; SP-12(9): 1647-1650
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www.thepharmajournal.com
 Received: 04-07-2023
 Accepted: 13-08-2023

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Impact of health hazard on health care workers in Agra city of Uttar Pradesh

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Abstract

There are many issues with occupational safety and health (OSH) in India. Unprecedented growth and progress are accompanied by challenges like a sizable workforce in the unorganized sector, the availability of cheap labor, low public spending on health, and inadequate implementation of existing legislation, lack of reliable OSH data, a shortage of OSH professionals, a multiplicity of statutory controls, stakeholder apathy, and infrastructure issues. The HCWs (both male and female) from 30 hospitals in the Indian state of Uttar Pradesh's capital city of Agra participated in this study. A range of HCWs were represented in the study group, including staff and student nurses, staff and student lab technicians, senior residents, junior residents, interns, undergraduate medical students, and others. With the participation of 600 HCWs, the study was conducted. In Agra, Uttar Pradesh, India, a city tertiary hospital conducted a hospital-based cross-sectional study. A predetermined schedule was used to gather information from 600 respondents (doctor, nurse, lab technician, and staff). Therefore, the goal of this study was to ascertain whether paramedical workers were aware of and adhered to commonplace occupational safety precautions like universal precautions in their daily work.

Keywords: Occupational safety and health, stress management, healthcare workers

Introduction

The hazards of poor working conditions and ergonomics have caused a great concern all over the globe in light of its impact on employee's health and environment. The foregoing review of present scenario of occupational health in our country clearly reflects serious weaknesses in management of occupational health and safety (OHS). The study is crucial to reducing stigma at healthcare facilities associated with treating infected patients, which results from a lack of understanding of infections. According to studies, increasing HCWs' knowledge of safety procedures and practical and easily accessible preventive measures at work can help reduce their fears and misconceptions about the spread of diseases. Therefore, the purpose of this study was to determine whether paramedics were aware of and complied with commonplace occupational safety precautions like universal precautions.

Employs in hospitals and nursing homes of Agra city.

Overall, the study seeks to investigate health risk factors for the healthcare workers in hospitals and nursing homes of Agra city along with the management efficiency of human and capital resources, specifically, the impact of such practices on health and safety. Hence, this action oriented research work entitled "Impact of Health Hazard on Health Care Workers in Agra City of Uttar Pradesh" was undertaken

Methodology

The study was conducted in purposively selected city of Agra, Uttar Pradesh. 20 Government hospitals and 10 private hospitals/nursing homes were selected randomly for the current study. Details of hospitals surveyed, number of medical and non-medical staff and their selection are given below.

Selection of respondents from government and private hospitals of Agra

S.N.	Selected Doctors		Selected Nurses		Selected Lab technicians		Selected Staffs	
	Government Hospital	Private Hospital	Government Hospital	Private Hospital	Government Hospital	Private Hospital	Government Hospital	Private Hospital
1.	66	14	128	32	127	33	174	26
Total	80		160		160		200	

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Findings

Impact of Health Hazards on the Health Care Workers

In their workplaces, healthcare workers of government and private hospitals continue to encounter numerous risks. Working overtime, feeling pressured at work, working in

multiple facilities, and not wearing all required protective gear are all risk factors. To lessen the risks, measures should be taken. It is important to address issues with PPE supply gaps, pressures from the workplace, and complacency in following mitigation measures.

Table 1: Impact of Health Hazards on the Health Care Workers

S.N.	Impact of Health Hazards on the Health Care Workers	Government Hospitals N = 495	Private Hospitals N = 105
1.	Biological Hazards		
a.	Blood borne Pathogens	33 (6.67)	14 (1.34)
b.	Latex (Natural Latex Rubber)	05 (1.01)	02 (1.90)
c.	Medical Waste	11 (2.23)	14 (2.82)
d.	Methicillin-Resistant Staphylococcus aureus (MRSA)	05 (1.01)	03 (2.85)
e.	Handle infectious material	131 (26.46)	79 (75.23)
f.	Contact with infectious material (skin/clothing)	126 (25.45)	43 (40.95)
g.	Cut/needle stick injury	78 (15.75)	34 (32.38)
h.	Infections due to airborne such as influenza, tuberculosis, etc	143 (28.88)	21 (20.00)
2.	Chemical Hazards (Chemical spills)		
a.	Cleaning Agents	07 (1.41)	10 (9.52)
b.	Ethylene Oxide	05 (1.01)	02 (1.90)
c.	Formaldehyde	09 (1.81)	02 (1.90)
d.	Glutaraldehyde	12 (2.42)	15 (14.28)
e.	Mercury	03 (0.60)	01 (0.95)
f.	Methyl Methacrylate and Other Bonding Materials (Glues)	02 (0.40)	02 (1.90)
g.	Surgical Smoke	09 (1.81)	08 (7.61)
h.	Others (Noise, burns, and radiations)	32 (6.46)	20 (19.04)
2.	Non Biological Hazards		
a.	Harassment	30 (6.06)	15 (14.28)
b.	Discrimination	61 (12.32)	63 (60.00)
c.	Physical Hazards (Physical, psychological, sexual, and/or verbal abuse)	29 (5.85)	43 (40.95)
d.	Musculoskeletal injuries	20 (4.04)	25 (23.80)
e.	Stress/Violence	110 (22.23)	26 (24.76)
f.	Ergonomic	162 (32.72)	12 (11.42)

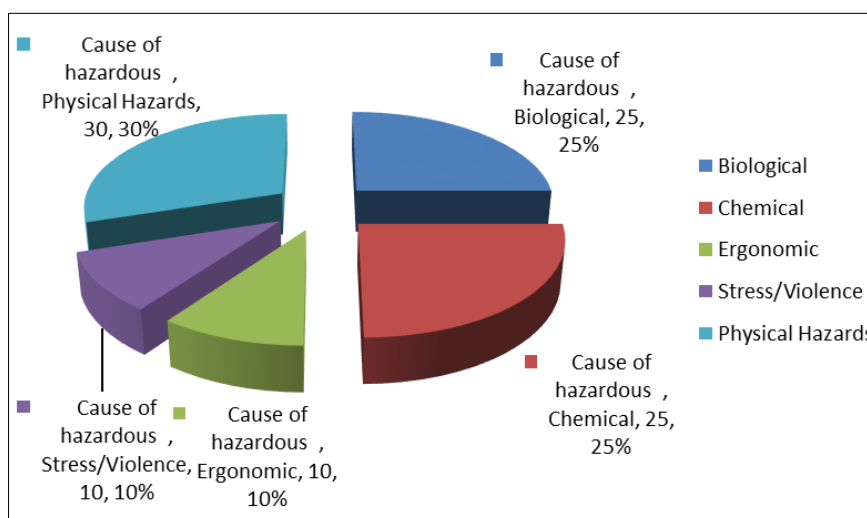


Fig 1: Percentage of cause of hazardous in different hospitals and nursing homes in Agra city

The above table shows health hazards in different government hospitals in Agra city. It was found that all the selected hospitals were suffering with some health hazards. In biological health hazards, 26.46 per cent government health care worker and 75.23 per cent private health care workers were affected with handling of infectious materials, 25.45 per cent government health care worker and 40.95 per cent private health care workers were affected with contact with infectious material (skin/clothing), 15.75 per cent government health care worker and 32.38 per cent private health care workers were affected with cut/needle stick injury and 28.88

per cent government health care worker and 20.00 per cent private health care workers were affected with infections due to airborne such as influenza, tuberculosis, etc. In non biological health hazards, 6.06 percent government health care workers and 14.28 per cent private health care workers were faced some harassment in the hospital, 12.32 per cent government health care workers and 60.00 per cent private health care workers were affected with discrimination, 5.85 per cent government health care workers and 40.95 per cent private health care workers were affected with abuse, 4.04 per cent government health care workers and 23.80 per

cent private health care workers were affected with Musculoskeletal injuries, 22.23 per cent government health care workers and 24.76 per cent private health care workers were affected with Stress/Violence, 73.13 per cent government health care workers and 24.76 per cent private health care workers were affected with Ergonomic problems, 19.79 per cent government health care workers and 13.32 per cent private health care workers were affected with chemical

hazards while 6.46 per cent government health care workers and 19.04 per cent private health care workers were affected with other problems like noise, burns, and radiations. So, we can conclude that health care workers of private hospitals in Agra were faced more health related problem in comparison of health care workers of government hospitals. To find out the impact of Health Hazard on Health Care in hospitals of Agra, following table was prepared.

Table 2: Prevalence of biological occupational hazards and their impact on Health Care Workers among the health care workers in Agra

Socio-economic Characteristics		Exposure to Biological Hazards		X ²	P-Value
		Exposed	Percent Prevalence		
Age Group	<30 years (n=264)	168	63.63%	0.247	0.55
	>30 years (n=336)	133	39.58%		
Gender	Male (n=290)	134	46.20%	5.88	0.003*
	Female (n=310)	164	52.90%		
Duration of Work	<10 years (n=305)	240	78.68%	8.46	0.024
	>10 years (n=295)	58	19.66%		
Professional Category	Doctor (n=80)	38	47.50%	14.70	0.000*
	Nurse (n=160)	123	76.87%		
	Laboratory technician and staff (n=360)	117	32.50%		

*Significant

Table 3: Logistic regression of the association between the socio-demographic variables with the biological hazards

Socio-economic Characteristics	OR	CI95%	P- Value
Age Group	2.656	1.149 - 4.787	.007*
Gender	2.872	1.541- 3.683	.005*
Duration of Work	0.388	0.178 – 0.792	.006*
Professional Category	1.251	1. 940 – 2.455	.002*

*Significant

Table 4: Prevalence of non biological occupational hazards and their impact on Health Care Workers among the health care workers in Agra

Socio-economic Characteristics		Exposure to non biological Hazards		X ²	P-Value
		Exposed	Percent Prevalence		
Age Group	<30 years (n=264)	175	66.28%	0.007	1
	>30 years (n=336)	131	39.98%		
Gender	Male (n=290)	136	46.89%	11.56	0.000*
	Female (n=310)	170	54.83%		
Duration of Work	<10 years (n=305)	242	79.34%	0.843	0.324
	>10 years (n=295)	64	21.69%		
Professional Category	Doctor (n=80)	19	23.75%	5.29	0.147
	Nurse (n=160)	55	34.37%		
	Laboratory technician and staff (n=360)	32	8.89%		

*Significant

Table 5: Logistic regression of the association between the socio-demographic variables with the non biological hazards

Socio-economic Characteristics	OR	CI95%	P- Value
Age Group	1.416	0.899 - 2.953	0.652
Gender	2.873	1.411 - 3.863	0.002*
Duration of Work	0.808	0.388 – 1.192	0.306
Professional Category	0.749	0.540 – 1.558	0.029

*Significant

The table shows that both biological and non-biological occupational hazards are highly prevalent among the occupational hazards that affect health workers in hospitals in Agra. Injury from contaminated sharps and needles is a serious occupational hazard for healthcare workers. The greatest biological risk in this study is needle stick injury. The majority of those who were exposed to biological hazards, according to the study, were nurses. Nurses are particularly vulnerable to workplace injuries and non-biological hazard exposure.

Similar findings are supported by Carlson and Perl (2010) [2].

It is obvious that nurses are at a high risk of many occupational hazards, including infectious diseases, chemical risks, environmental risks, and psychosocial risks when taking into account the nature of the nurse's working environment, responsibilities, and duties.

The similar findings are supported by Babu R (2010) [1].

Back pain is one of the most common non-biological hazards, especially in women, according to the study. In logistic regression, the only factor that significantly correlates with exposure to non-biological hazard is gender. According to multivariate regression analysis, being a woman, working overtime, not using the required Personal Protective Equipment (PPE), being a health care worker other than a doctor, being a female, and being a female were all independent predictors for encountering a biological hazard. In Agra, it was found that the presence of family conflict, being a woman, and not wearing the required PPE were all independent predictors of being exposed to non-biological hazards. Medical staff in hospitals in Agra do not take enough precautions. This is a very significant issue. The awareness of

and adherence to recommended precautions varies among HCWs and has been found to be insufficient. In Agra, it was discovered that having family conflict, being a woman, and not wearing the necessary PPE were all independent predictors of being exposed to non-biological hazards. Chaudhary and Agarwal (2004) [3].

Managing and mitigating risk is a particular challenge for healthcare professionals, as the health and well-being of patients, relatives and friends must also be considered. Exposure controls that do not compromise safe patient care require healthcare systems, technologies, and industry to work together. Workplace policies are often not readily available to healthcare professionals who may not be aware of workplace policies, despite potential exposure to risks. Healthcare facilities should focus on identifying hazards and their causes, and taking appropriate preventive/mitigating measures. The present findings are in line with the findings of Tan *et al* (2001) [6].

To lessen the risks posed by people who have tuberculosis or other airborne illnesses, administrative measures are essential. These precautions include having a written infection control plan, quickly identifying and isolating suspected cases as needed, training staff, promptly disclosing the results of diagnostic tests, educating patients, and raising awareness among HCP.

Environmental controls through effective, affordable intervention in high-risk situations in developing countries are also crucial lines of defense to prevent airborne infections, provided that the air in the room is sufficiently mixed. It is essential that the ultraviolet lights are not placed lower in the space where residents' eyes might be exposed to them, even for a brief period of time, as doing so can cause eye damage. To protect staff members who handle dangerous drugs, employers must implement a surveillance program. Hospital radiation control is typically overseen by specially trained individuals known as health physicists, medical health physicists, or radiation safety officers and must be taken seriously.

It is advised to get immunized against infections brought on by healthcare settings, whether it be against West Nile virus exposure, influenza, or another infection depending on the situation. Glutaraldehyde, mercury, and prompt, appropriate smoke clearance from laser/electric surgical procedures in operating rooms and other locations must all be used safely. It is critical to lessen workplace exposure to anesthetic gases and their leakage. Safeguarding against fire and malfunction brought on by improper cleaning and using disinfecting liquid on electronic medical equipment are two additional precautions. It is critical to evaluate the effectiveness of a comprehensive program for reducing the risk of trips, slips, and falls as well as to be knowledgeable about the risk factors for violence in hospitals and the methods for reducing exposure to these factors. The study area should implement prevention and coping skills education programs for health care workers. Similar findings are supported by Makary *et al.* (2007) [4].

Conclusion

This study has revealed the various forms of common occupational health hazards that Health care workers encounter whilst providing care to clients in study area. It has also demonstrated that occupational health and safety has simply been neglected in study area and this has negatively impacted on the performance of Health care workers. It is

therefore imperative for to consider the following recommendations to protect the basic rights and wellbeing of Health care workers.

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