

OCCUPATIONAL HAZARDS AMONG HEALTHCARE WORKERS OF GOVERNMENTAL HOSPITALS IN DUHOK GOVERNORATE

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Abstract

Healthcare workers in healthcare facilities may be exposed to a variety of work-related hazards, putting them at risk for numerous occupational injuries and diseases. Accordingly, the purpose of this study is to determine the occupational risks faced by healthcare personnel in government hospitals in the province of Duhok, Iraqi Kurdistan Region. This study was conducted among 400 healthcare professionals (152 physicians and 248 nurses). The previous 12 months' prevalence of risky events was; work overload 344 (86%), followed by stress during working 334 (83.5%). 312 (78%) had direct contact with body fluids of patients, The prevalence of needle stick injuries was 274 (68.5 %), 246 (61.5 %) of them had lifted heavy objects, either equipment or patients, cuts with sharp was 206 (51.50%), assault behaviour from relatives of the patient was 97 (24.25 %), 140 (35 %) of HCWs had either trips, slips and falls at the workplace, and at the same time, the lowest two risks were spills of chemicals material and assaults behaviour from patients, 95 (23.75%) and 69 (17.25%), respectively.

Keywords: Occupational Hazards, Healthcare Workers, Governmental Hospitals, Duhok.

INTRODUCTION

The healthcare workforce accounts for 12% of the working population worldwide. Healthcare personnel work in one of the most dangerous environments in the workplace (1). Healthcare is linked to the provision of health services to persons, either directly or indirectly. Physicians, nurses, experts, clinical researchers, laboratory employees, and social and administrative professionals are all healthcare workers (HCWs). Over 59 million people work in healthcare services around the world, and all of them are every day exposed to a variety of health and safety risks (2). Two-thirds of HCWs provide health services, while the rests are management and support workers (3). Hundreds of thousands of healthcare professionals are exposed to work-related disorders such as blood-borne diseases each year due to needle sticks and other sharp injuries (4).

work-related health hazard was mentioned in ancient Egypt, Greece, and Rome (5). Hazard is any activity, behaviour, error, event, incident, occurrence, operation, process, circumstance, substance, or task that poses a risk to human health, property, or the environment (6).

To reduce the occupational risks among HCWs at the workplace, it's critical to identify the hazards and determine which are the most prevalent and urgent. To lower the risks and limit the hazards, proper prevention techniques should be explored and training initiatives (7). Health problems among HCWs could have a negative impact on workplace utility, job efficiency, and patient care quality, as well as raise the workload of other employees, thereby leading to work dissatisfaction among HCWs (8).

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Occupational safety and health (OSH) is a critical concern that must be addressed in each working environment. In the broadest sense, it should aim to support and maintain the highest degree of physical, mental, and social well-being among employees in all professions. In recent years a significant advance in workplace health and safety systems occurred to avoid occupational risk (9). In healthcare, quality of life has become a critical issue for healthcare practitioners and patients (10). Threatening and assaultive behaviour towards healthcare workers is an increasing national concern (11).

SUBJECT AND METHODS

A. Study settings, population and design of the study.

From October 31, 2021, to July 31, 2022, a cross-sectional survey was conducted among 1,843 healthcare professionals (physicians and nurses) employed at thirteen government hospitals in the governorate of Duhok. The multistage sampling procedure was used; first, the population under research was divided into clusters, with each hospital representing a cluster; secondly, according to the proportion of each hospital, a simple random selection approach was used to choose 400 healthcare workers to include them in the current study.

B. Ethical Considerations

Scientific Committee at Duhok Polytechnic University/ College of Health and Medical Technology and the Ethical Committee at the directorate of planning at the general

directorate of health in Duhok governorate/ approved the protocol of the study with Reference number: 18082021 -8- 1 6 at 18 of August 2021.

C. Data collection and instrument of the study

A designed questionnaire was used to collect data. An expert corrected erroneous or confusing questions in the questionnaire before implementing the study. Twenty HCWs at two centres (thalassemia and renal dialysis) in the Akre district of health participated in a pilot study; the questionnaire remained intact after the pilot study. A direct interview was conducted between the researcher and the respondents to obtain data.

D. Data analysis

The data were analysed using the SPSS software version 25 and chi-square statistical tests used to determine the correlation and difference between variables.

RESULTS

Common risky events.

Figure 1. displays the numbers of HCWs exposed to the risky event at least one time during the previous 12 months. The most common event that occurred to HCWs was occasional work overload 344 (86%), followed by stress during working 334 (83.5%). At the same time, the lowest two risks were spills of a chemical material which had a corrosive characteristic in the workplace and assaults from patients, 95 (23.75%) and 69 (17.25%), respectively.

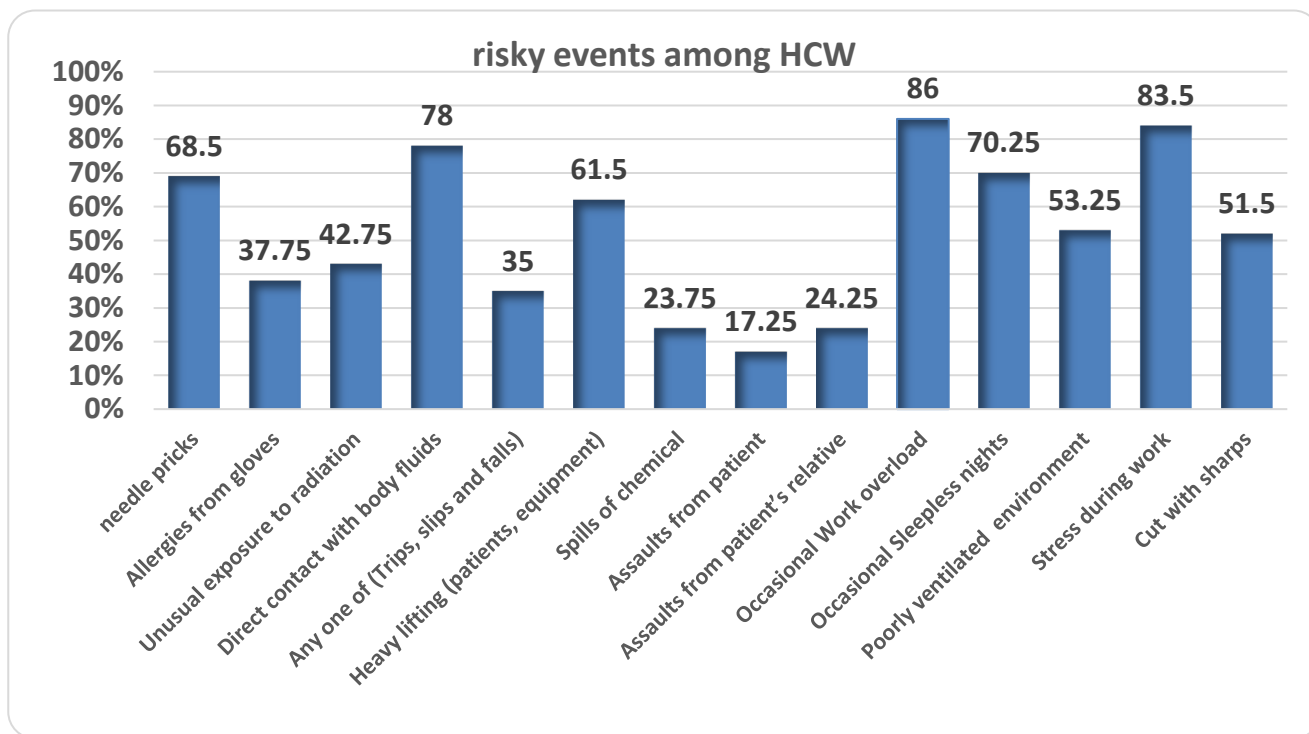


Figure 1: the most common risky event among HCWs

Any one of (Trips, slips and falls)

Figure 2. illustrates the prevalence of TSFs among HCWs; 140 (35 %) of HCWs had either TSFs at the workplace in the last 12 months. In addition, 78 (44.3 %) of them were female, and 62 (55.7%) were male, but statistically, there was no significant correlation between sex and the occurrence of any Trips, slips, and falls.

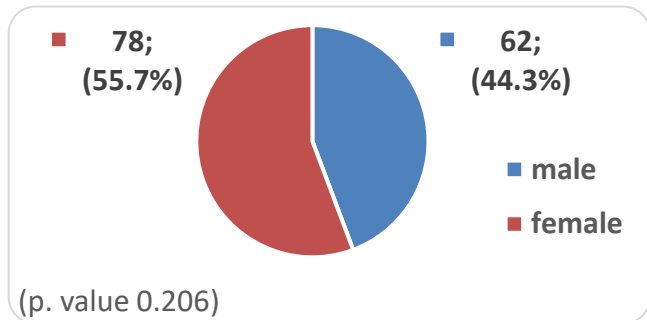


Figure 2: Any one of (Trips, slips and falls)

Heavy lifting

Table 1. shows that 246 (61.5 %) of HCWs say they had lifted heavy material, either equipment or patients, at the workplace. 138 (67.64 %) were males, and 108 (55.1%) were females. There was a significant difference between males and females and heavy lifting at the workplace.

Table 1: Heavy lifting among HCWs

Sex	Heavy lifting e.g. patients, equipment					Total
	Once	Two times	Three times	> three times	Never	
Male	22 (5.5%)	33 (8.25%)	23 (5.75%)	60 (15%)	66 (16.5%)	204 (51%)
Female	27 (6.75%)	21 (5.25%)	18 (4.5%)	42 (10.5%)	88 (22%)	196 (49%)
Grand total	49 (12.25%)	54 (13.5%)	41 (10.25%)	102 (25.5%)	154 (38.5%)	400 (100%)

p. value 0.041

The prevalence of occupational hazards among HCWs

Table 2. shows the prevalence of occupational hazards among HCWs, and needle stick injuries occurred for 274 (68.5 %) HCWs. However, it was more frequent among nurses than physicians, and statistically, there was a significant difference between both of them. The prevalence of cuts with sharpness was 206 (51.50). 73 (48%) of physicians, and 133 (53.6%) of nurses. Statistically, there was no significant difference between nurses and physicians.

The assault behaviour from relatives of the patient was 97 (24.25 %) of HCWs, the rate was higher against physicians, and there was a significant positive correlation between physician's occupations and assaults from patient's relatives.

334 (83.5 %) of HCWs were exposed to stress in the workplace. 142 (93.42 %) of physicians, and 192 (77.41 %) nurses, statistically the difference was significant.

Table 2: The prevalence of hazardous events among physicians and nurses

Type of hazards	Specialist	Once	Two times	Three times	>three times	Never	Total
Needle pricks	Physician	31 (7.75%)	18 (4.50%)	9 (2.25%)	36 (9%)	58 (14.5%)	152 (38%)
	Nurse	39 (9.75%)	58 (14.5%)	34 (8.5%)	49 (12.25%)	68 (17%)	248 (62%)
G. total		70 (17.5%)	76 (19%)	43 (10.75%)	85 (21.25%)	126 (31.5%)	400 (100%)

P. value 0.002.							
Cut with sharps	Physician	23 (5.75%)	19 (4.75%)	7 (1.75%)	24 (6.00%)	79 (19.75%)	152 (38%)
	Nurse	28 (7.00%)	31 (7.75%)	34 (8.50%)	40 (10.00%)	115 (28.75%)	248 (62%)
G. total		51 (12.75%)	50 (12.50%)	41 (10.25%)	64 (16.00%)	194 (48.50%)	400 (100%)
P. value 0.053.							
Assaults from patient's relative	Physician	30 (7.5%)	11 (2.75%)	1 (0.25%)	5 (1.25%)	105 (26.25%)	152 (38%)
	Nurse	22 (5.5%)	8 (2%)	4 (1%)	16 (4%)	198 (49.5%)	248 (62%)
G. total		52 (13%)	19 (4.75%)	5 (1.25%)	21 (5.25%)	303 (75.75%)	400 (100%)
P. value 0.003.							
Stress during work	Physician	5 (1.25%)	16 (4%)	38 (9.5%)	83 (20.75%)	10 (2.5%)	152 (38%)
	Nurse	8 (2%)	60 (15%)	65 (16.25%)	59 (14.75%)	56 (14%)	248 (62%)
G. total		13 (3.25%)	76 (19%)	103 (25.75%)	142 (35.5%)	66 (16.5%)	400 (100%)
P. value 0.0001.							

DISCUSSION

Occupational hazards are known as a global concern for HCWs particularly nurses who were frequently the first healthcare provider (12). In Ontario Canada, the healthcare sector has been ranked second highest for lost-time injury rates among 16 sectors (13). In the current study, an accident of slip, trip and fall (STFs) occurred for 140 (35%) of HCWs which was near to the results of a study conducted among HCWs in Hiwa Hospital in Sulaymaniyah City (39%) (14). During the 8-year period study; STFs comprised the second largest proportion of total injury claims (15). In the current study 13% of HCWs had at least one time of STFs, but a study by Kumar 2021, out of 406 HCWs from various clinical and support areas of the hospital, it was observed that 14 (3.45%) HCWs have at least one incidence of STFs in the last one year (16).

Needle sticks injuries (NSIs) are the most common cause by which blood borne pathogens are transmitted between patients and HCWs (17) The prevalence of (NSIs) among HCWs was 274 (68.5%). In a study at Rizgary Teaching Hospital-Erbil the prevalence was (52.6%) (18) . In a study in Egypt at tertiary and secondary care hospitals in Menoufia Governorate Prevalence of NSIs and sharps injury in the last year was 64% (19). According to Meta-analyses study the global prevalence was 44.5%. But the pooled prevalence of NSIs in nurses was the lowest in the Western Pacific and America regions, and was the highest in South-East Asia, followed by the EMRO. The difference between the American and EMRO was significant and the pooled prevalence for the EMRO was 1.9 times higher than that in

America (52.0 vs. 26.7) (20).

Understanding the complexity in preventing and managing violence against health-care staff can assist policymakers and managers to develop multi-faceted approaches to violence prevention (21). Healthcare workers are at a high risk of violence all over the world. The hostility toward nurses, physicians, and hospital staff has reached the point that it can be considered a public health problem (22). Violence behaviour toward HCWs was 97 (24.25%), prevalence among nurses was (20.16%) and among physicians was (30.92%), while in a study conducted in Baghdad during COVID-19 pandemic, of the 505 doctors, 444 (88.3%) doctors reported verbal or physical violence in the past six months, and 417 (93.9%) who indicated that violence came from the patients or family members (23). Globally, according to the International Committee of the Red Cross (ICRC), more than 600 cases of violence against HCWs occurred in the first 6 months of the pandemic. In a meta-analysis 61.9% was the globally prevalence of among HCWs, (24).

Healthcare workers, especially physicians and nurses, are more likely to experience higher levels of stress, anxiety and depression (25). Results of our study shows high proportion of stress among HCWs (83.5%) and it was higher among physicians (93.4%) than nurses. In cross-sectional study was carried out in Erbil, Iraqi Kurdistan Region among physicians working in specialized COVID-19 centers and other healthcare facilities revealed 57 (15.4%) had low perceived stress, 249 (67.3%) had moderate stress, and 64 (17.3%) had high stress (26). In another study among HCWs in the Covid-19 Epicenter of Da Nang City, Vietnam they found Nearly

half (44.6%) of the HCWs who participated in the study experienced stress (27).

CONCLUSIONS

Work overload and stress during work had highest prevalence among HCWs. Physicians were had more stress than nurses at workplace, and it was significantly associated with physician as an occupation. statistically there was no significant correlation between sex and the occurrence of any Trips, slips, and falls at workplace. Males HCWs had more frequently lifted heavy material than female, and statistically the difference was significant.

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Conflict of interest: There are no conflicts of interest declared by the authors.

Ethical approval: Scientific Committee at Duhok Polytechnic University/ College of Health and Medical Technology and the Ethical Committee at the directorate of planning at the general directorate of health in Duhok governorate/ approved the protocol of the study with Reference number: 18082021 -8- 1 6 at 18 of August 2021.

Informed consent: Before participating in the study, informed consent was obtained from each healthcare worker.

Author Contributions: All authors contributed equally.

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