Study and Assess the Occupation Hazards to Health Workers in the City of Kut/ Wassit

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Abstract

Background: Occupational hazards are a major medical, social, economic problem and a leading cause of morbidity and mortality for health workers. The aims of this study was to identify the types of occupational hazards and risks that health workers are exposed to in the study area. In addition, to measure risk level of occupation hazards. This is a cross sectional descriptive study was carried out among health workers in two hospitals located in Kut city in Wasit governorate. The period of the study extended from October 2019, until the end of March 2020. Data collected by using questionnaire form. The occupation hazards dimensions, which include four domains: physical hazards, chemical hazards, biological hazards, and psychological hazards. The statistical methods used included Chi-square and Fisher exact test. A statistical significant association ($p<0.05$)**.** The main findings of the current study indicate that the commonest occupational hazards among the health workers in Al- Kut hospital was noise (58.6%), and the second hazard in this category was fire (51.9%). While in Al-Karamah hospital the commonest occupational hazards among the health workers was noise (57.9%) . Conlusively, the study was found that health workers in Al-Karamah hospital had experienced light, heat, noise, psychological, and chemical hazard higher than health workers in Al-Kut hospital. In addition , the health workers in Al-Karamah hospital had experienced biological lower than health workers in Al-Kut hospital.

Key words: *Occupational hazards, Health workers, Hospitals.*

Introduction

Health workers perform many tasks in hospitals [(1)], and globally, it is currently estimated the percent of health workers is more one-tenth of the working's population (12%)[(2)]. In the context, those activities make them vulnerable to various occupational hazards [(1)] which are a major medical, social, economic problem and a leading cause of morbidity and mortality. Moreover, it have major negative effects on quality of life, due to loss of mobility, loss of work and skilled personnel in addition reduction of productivity[(3)]. The risk factors influencing hospital are various interacting such as biological, chemical, physical**,** and ergonomic, as well as the presence of psychosocial risk in the hospital[(4)]. As reported by WHO, the occupational hazards in the health sector recorded a higher rate as compared with other sectors such as industrial and construction[(5)]. Remarkable, in Europe, as mention early, risk factors above are an overwhelming majority of fatalities and occupation diseases[(6)]. Risk identification is fundamental for an effective preventive management of occupational diseases, as it contributes to the development of a policy and system for occupational health safety which significantly enhance the employee performance, and productivity[(7)]. occupational health safety is plays an important role in preventive and curative management[(8)]. On the other hand a safety workforce is vital for sustainable social and economic

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development on a global, and local level[9]. the study aimed to identify the types of occupational hazards and risks that health workers are exposed to in the study area.

Methodology

This cross sectional descriptive study employed quantitative design**.** The study was carried out among health workers in three hospitals located in Kut city in Wasit governorate. Al-Kut for Gynecology and Children, Al- Karama Teaching Hospital , a pilot study was done at Al- Zahraa Teaching Hospital. All health Workers (266) working in the hospitals**.** The period of the study extended from October 2019, till the end of March 2020. Data were collected through direct interview of health workers using questionnaire form. Occupational hazards assessment questionnaires was developed and constructed by the researchers and modified by expert panel. The questionnaire form consisted of three parts: First part concerned with Socio-demographic characteristics of the studied respondents regarding: age (years), gender,...etc.) The second one was the occupational characteristics of health workers regarding health care provider (classified as physician, technician, nurses, others),….etc. The third section was the occupational hazards dimensions which include four domains: physical hazards that are encountered in hospital working environment include: lighting condition and ergonomic stressor (11 items), heat (3 items), radiation (5 items), noise (6 items). Chemical hazards (16 items) and biological hazards (13 items). Three –points Likert scale were used to assess these domains, it ranged from (1-5). Psychological hazard (10 items) was assessed by using two points Likert scale. Data entry was done using the SPSS (25) by using frequencies and percentage, Chi-square test (X^2) and Fisher exact (it was used when Chi –squared test was not suitable). The differences between observations were considered significant at $p \leq 0.05$.

Results & Discussion

Regarding the age, the current results demonstrated that 75.9% of health workers in Al Kut Hospital were in the age group ≤30years and 70.7% of health workers in Al Karama Hospital. These findings agreed with what has been stated by Azage Muluken et al 2013 in Ethiopia[10].(Table 1) . This study indicates that almost half of the health workers in two hospital were married, and the lowest of the health workers were others, findings similar to Maryam Mollazadeh et al , 2018 [12]. In respect to the residence, the majority of the health workers in two hospitals in this study were living in urban area. Highest percentage of health workers in two hospitals were have institute &higher level. Such result was consistent with the findings of OlufemiOludareAluko et al. 2016 in Nigeria[14].(Table 2). On the profession of healthcare workers, technician and others encompass the largest group revealed in the study almost (33.1%, 32.8%) of respondents respectively. This finding was opposite to the study of Hailemariam Gezie1*et al.*, 2019 in Ethiopia[15].This might be interpreted due to the fact that lack of nursing staff in Iraq, in addition to the increase in private and government colleges that graduate large numbers of medical technicians.

According to their working area, the majority of respondents (58, 22.3%), working at emergency ward. However, this fact disagreed with the finding of Azage Muluken et al 2013 in Ethiopia [10]. Concerning length of experience of health workers in two hospitals , The highest proportion of health workers were in the length of experience (≤5). The association between two groups was not significant (P >0.05), which it agreed with that stated by KURT VAZ et al 2010 in India[16]. (Table 3).

The study findings showed that the physical health hazards that had the highest frequency of occurrence among the workers was noise with rate 57.9% in Al-Kut Hospital and 58.6% in Al-Karamah Hospital, while heat and temperature had the lowest frequency with rate 3.8% in Al-Kut Hospital and 17.3% in Al-Karamah Hospital. This equally corresponds to study by Fernandes MA & Marziale MH[17]. Previous study had suggested that chemical hazard would be a pervasive problem among health workers[18]. There were different exposure incidents to chemicals experienced by more than a third of the health workers in two hospitals. This is in line with study findings by Opelo Keorekile.[19] Further, this is slightly lower than the results of local study in Iraq , Saad *et al.*2017[20]. Hazardous chemical exposure occurred in a variety of forms-including to airborne aerosols, detergents and disinfectants and others. The most common exposure was exposure to airborne aerosols . More than half of the health workers reported was irritation of the eyes, nose, and throat caused by exposure to airborne aerosols or contact with drops of washing and cleaning fluid.

Exposure to biological hazards among the health workers was low with rate 31.6% in Al-Kut Hospital and 24.1% in Al-Karamah Hospital. This finding was opposite to the study of Arasi Senthil*et al.*, 2015 in India[21]. In Al-Kut Hospital , the commonest biological hazards among the health workers was direct contact with samples (64.7%). These results were nearly similar to study in Nigeria , Osungbemiro et al, 2016 [22] .

Among those that experienced occupational hazards, exposure to psychological hazard among the health workers was low with rate 6% in Al-Kut Hospital and 18.8% in Al-Karamah Hospital . This is not same with C.U. Okeafor and F.E. Alamina's study conducted in Nigeria[24]. About 42% of health workers experienced verbal violence from patient and / or patient relatives in Al-Kut Hospital and 53.4% in Al-Karamah Hospital , which is considered the highest percentage from psychological hazard in this study. This tallies with results of study done by Mohamad Kitaneh and Motasem Hamdan, 2012 in Palestine. Another important psychological hazard that occurred with significant proportion among study participants was bulling from boss. The study showed result that among the 19.5% who reported exposure to bulling from boss in Al-Kut Hospital and 33.1% in Al-Karamah Hospital. This is more lower than the percentage of R.L. Difazio *et al.* 2019 in Russia[25]. (Table 4).

Table 1 : Distribution of health workers of hospitals according to age and gender.

Variables			Al Kut Hospital for Women and Children			Al-Karamah Teaching Hospital			Total
			Male	Female	Total	Male	Female	Total	
Age	≤30	F (%)	27 (61.4)	74 (83.1)	101 (75.9)	38 (57.6)	56 (83.6)	94 (70.7)	195(73.3)
	31-40	F (%)	8 (18.2)	10 (11.2)	18 (13.5)	17 (25.8)	5 (7.5)	22 (16.5)	40 (15.0)
	>40	F (%)	9 (20.5)	5 (5.6)	14 (10.5)	11 (16.7)	6 (9.0)	17 (12.8)	31 (11.7)

df=2 p-value= 0.625

Table 2: Distribution of health workers of hospitals according to Demographic Characteristics.

Variables			Al Kut Hospital	Al-Karamah Hospital	Total	p- value
Marital status	Married	F (%)	66 (49.6)	73 (54.9)	139 (52.3)	0.712
	Single	F (%)	64 (48.1)	60 (45.1)	124 (46.6)	
	Others	F (%)	3 (2.3)	0 (0.0)	3 (1.1)	
Residence	Urban	F (%)	125 (93.98)	127 (95.5)	252 (94.7)	0.784
	Rural	F (%)	8 (6.02)	6 (4.5)	12 (4.5)	
Education status	Primary	F (%)	2 (1.5)	0 (0.0)	2 (0.8)	0.149
	Secondary	F (%)	1 (0.8)	2 (1.5)	3 (1.1)	
	Intermitted	F (%)	25 (18.8)	16 (12.0)	41 (15.4)	
	Institute &Higher	F (%)	105 (78.9)	115 (86.5)	219 (82.3)	

Table 3: Distribution of health workers of hospitals according to Occupational Characteristics

Variables			Al Kut Hospital	Al-Karamah Hospital	Total	p- value
Health care provider	Physician	F %	7 (5.3)	12 (9.0)	19 (7.1)	0.110
	Technician	F %	39 (29.3)	49 (36.8)	88 (33.1)	
	Nurse	F %	48 (36.1)	24 (18.0)	72 (27.1)	
	Others	F %	39 (29.3)	48 (36.1)	87 (32.8)	
Years of experience	≤5	F %	72 (54.1)	77 (57.9)	149 (56.0)	0.825
	6-10	F %	33 (24.8)	30 (22.6)	63 (23.7)	
	>10	F %	28 (21.1)	26 (19.5)	54 (20.3)	
Department *(Working area)	Operations Department	F %	15 (11.3)	1 (0.8)	16 (6.0)	0.000*
	Intensive Care	F %	8 (6.0)	5 (3.8)	13 (4.9)	
	Emergency	F %	58 (43.6)	86 (64.7)	144 (54.1)	
	Medical Laboratories	F %	4 (3.0)	2 (1.5)	6 (2.3)	
	Radiology Department	F %	48 (36.1)	39 (29.3)	87 (32.7)	
	Others	F %	15 (11.3)	1 (0.8)	16 (6.0)	

*** Fisher's exact test**

Table 4: Score of Occupational Hazards

Hazards		Hospitals		Good and acceptable	Poor	p-value
Physical hazards	lighting condition and ergonomic stressor	Al-Kut Hospital	F (%)	106 (79.7)	27 (20.3)	1.000*
		Al-Karamah Hospital	F (%)	105 (78.9)	28 (21.1)	
	Heat	Al-Kut Hospital	F (%)	128 (96.2)	5 (3.8)	0.000*
		Al-Karamah Hospital	F (%)	110 (82.7)	23 (17.3)	
	Radiation	Al-Kut Hospital	F (%)	68 (51.1)	65 (48.9)	1.000*
		Al-Karamah Hospital	F (%)	68 (51.1)	65 (48.9)	
	Noise	Al-Kut Hospital	F (%)	56 (42.1)	77 (57.9)	1.000*
		Al-Karamah Hospital	F (%)	55 (41.4)	78 (58.6)	

Cont... **Table (4(: Score of Occupational Hazards**

Chemical Hazards	**Al-Kut Hospital**	**F (%)**	**83 (62.9)**	**49 (37.1)**	**0.899***
	Al-Karamah Hospital	**F (%)**	**82 (61.7)**	**51 (38.3)**	
Total		F (%)	165 (62.3)	100 (37.7)	
Biological Hazards	Al-Kut Hospital	F (%)	91 (68.4)	42 (31.6)	0.218*
	Al-Karamah Hospital	F (%)	101 (75.9)	32 (24.1)	
Total		F (%)	192 (72.2)	74 (27.8)	
psychological hazards	Al-Kut Hospital	F (%)	125 (94.0)	8 (6.0)	0.002*
	Al-Karamah Hospital	F (%)	108 (81.2)	25 (18.8)	
Total		F (%)	233 (87.6)	33 (12.4)	

*** Fisher's exact test**

Conclusions

Majority of health workers fell in age the group (≤30) years and most of them are females, married, and had institute &higher level. Noise seem to be a major concern among the health workers in both hospitals. Overall the level of occupation hazard among health workers was low.

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