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RIGHTS, RESPONSIBILITIES, AND PRACTICES OF HEALTH CARE WORKERS REGARDING OCCUPATIONAL HEALTH AND SAFETY DURING COVID-19 PANDEMIC

By

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Abstract

Introduction: COVID-19 is a rapidly expanding pandemic caused by a novel human Corona virus. Health care workers (HCWs) are front-line, and they have to know how to protect themselves and their patients from this infection. **Aim of Work**: To determine the awareness of rights, responsibilities and protective practices regarding occupational health and safety during COVID-19 pandemic among HCWs. **Materials and Methods**: A cross-sectional descriptive study was conducted at King Abdullah bin Abdulaziz University Hospital during May and June 2020 among 132 HCWs using a non-probability convenient sampling method. A questionnaire was developed to investigate the HCWs' awareness of rights and responsibilities along with their commitments to their role in protective practices regarding OHS during the COVID-19 pandemic. The questionnaire was developed based on WHO (2020a) guidelines .Descriptive statistics were applied; to determine significance levels, non-parametric Mann Whitney and Kruskal–Wallis procedures were used. All statistical analyses were performed using a significance level of 0.05. **Results:** The majority of the sample was females (75.8%), non-Saudi (75%), and nurses (65.2%) who had graduated with at least a bachelor's degree (84.8%); approximately half of them were between 30 and 39 years old (50.8%). The majority of participants were aware of their right (mean 4.88 ± 0.25), responsibilities (mean 4.87± 0.30), and practice measures (mean 4.72 ± 0.34). Female HCWs had significantly higher scores than males on the rights measures *(z* =

-2.15, p = .031), and nurses had significantly higher scores than all other HCWs for rights (mean 4.91 ± 0.22), responsibilities (mean 4.92 ± 0.21), and practices measures (mean 4.82 ± 0.23). HCWs aged 30–39 years had significantly higher scores (p = .028) regarding practice (mean 4.78± 0.32). **Conclusion**: The findings of the current study revealed a high level of awareness of occupational health and safety by the majority of participants; hospitals should ensure the continuous accessibility of guidelines and the provision of training to workers with continuous mentorship.
Keywords: Health care workers, COVID-19, Occupational health and safety, Rights Responsibilities and Practice.

Introduction

Since the beginning of the CVOID-19 pandemic, health care workers (HCWs) have been at high risk of infection due to long hours of contact with patients and the procedures they require, such as tracheal suctioning and intubation (Petersen et al., 2020; Zhang et al., 2020). International human rights law assures the right to the maximum possible standard of health care and requires health care facilities to take steps to minimize the risks imposed on health workers (HRW, 2020). The Occupational Health and Safety Act gives all HCWs the right to a safe working environment without risk to their health. It enforces the necessary health and safety measures for all HCWs, including protection against biological hazards (Senthil et al., 2015 and Ibrahim, 2019). Health care settings are obligated to minimize the risk of occupational accidents and diseases by ensuring the fulfillment of HCWs' the right to have access to accurate health information and proper protective clothing, equipment, and gear with appropriate training (Gwyther, 2019 and Mngxekeza, 2019).

Health care settings are responsible for measuring occupational health and safety (OHS) hazards and arranging tools to discourse them. HCWs thus play a principal role in detecting working circumstances that may cause a hazard to their health and safety. HCWs, whose OHS rights are frequently compromised, must carry out health care services under stressful situations which in many instances neglect their own safety. For example, a lack of protective gloves raises HCWs' risk of infections through needle injury (Wicclair, 2011).

However, as the safety of HCWs has a great impact on patients; it is the responsibility of HCWs in maintaining health and safety measures and reducing health risks (Jiménez et al., 2019 and

Verra et al., 2019). HCWs must follow workplace policy and procedures; avoid exposing others to hazards and get continuous training on occupational health and safety (Flynn, 2019). Also, they must follow institutional guidelines and protocols when dealing with patients; interact with patients in respectful, compassionate, and dignified ways; and promptly adhere to reporting procedures of suspected and confirmed COVID-19 cases. Moreover, they are responsible for reporting any situation in which they have reason to believe in the presence of impending, serious danger to life or health (DePergola, 2020).

Aim of Work

To determine the awareness of rights, responsibilities and protective practices regarding occupational health and safety during COVID-19 pandemic among HCWs.

Materials and Methods

Study design: This is a cross-sectional descriptive study.

Place and duration of study: the study was conducted during May and June 2020 at King Abdullah bin Abdulaziz University Hospital (KAAUH) which is a 300-bed secondary educational hospital governed by the Ministry of Education in Riyadh, Saudi Arabia (KAAUH, 2020). During the pandemic, the hospital was one of those designated to treat infected patients (CDC, 2020) and had followed the hospitals' preparedness plans established by the Saudi Ministry of Health (MOH) (Barry et al., 2020).

Study sample: HCWs were recruited using a non-probability convenient sampling method. A questionnaire was available electronically through Microsoft surveys and was distributed via the official mailing lists in the hospital to reach out to all HCWs. The study population included all HCWs at KAAUH regardless of their race, nationality, or age. The study sample was estimated to be a minimum of 127 participants from the total study population, which were 1,132. This number was estimated to have a confidence level of 95% that the real value is within ±5% using figures from a similar study in China, where 89.7% of HCWs were found to have been following protective practices regarding COVID-19 (Zhang et al., 2020). A total of 132 health care workers participated in the study.

Study methods: A questionnaire

was developed to investigate the HCWs' awareness of rights and responsibilities along with their commitments to their role in protective practices regarding OHS during the COVID-19 pandemic. The questionnaire was developed based on WHO (2020a) guidelines on HCWs' rights, roles, and responsibilities during the COVID-19 outbreak and WHO (2020c) regulations on the risk assessment and management of exposure of HCWs in the context of COVID-19. The questionnaire consisted of a total of 47 questions in four sections: (i) 11 questions related to socio-demographic items, (ii) 13 questions about awareness of HCWs' rights, (iii) 10 questions assessing the HCWs' responsibilities, and (iv) 13 questions related to protective practices during the pandemic. The possible responses for the questions on rights and responsibilities were based on five-points Likert scale ranging from "Strongly agree" to "Strongly disagree," while the responses for protective practices were also rated along on a five-points Likert scale ranging from "Always" to "Never". Each correct response was awarded one point. The highest possible score for rights, responsibilities and practice measures was five points each and the lowest was one.

Validity, Reliability, and Feasibility

The questionnaire was developed based on an extensive review of the literature and guidelines. Face validity was tested by three experts in the field of public health and three health care practitioners, which resulted in some minor modifications. All three measures were reliable, as their Cronbach's α was higher than .70. The values obtained were 0.87, 0.91, and 0.78 for rights, responsibilities, and practices, respectively. The questionnaire was also piloted with 15 individuals, and no modifications were needed.

Consent

All participants provided informed consent at the beginning of the survey. Participation was voluntary, and the anonymity of the participants was maintained throughout the research.

Ethical Approval

Ethical approval was obtained from the institutional review board/ ethics committee at Princess Nourah bint Abdulrahman University (IRB Log Number 20-0173) prior to conducting the study.

Data Management

Data were coded and analyzed using SPSS version 25. The data were presented in absolute and relative frequencies (in percentages) to describe the study variables describing the study sample. Descriptive statistics were used to present the results related to the measures of rights, responsibilities, and practices. The measures for rights, responsibilities, and practices were highly skewed. Therefore, to test the significance of the relationships, non-parametric Mann–Whitney U test (for demographics with two groups, such as gender, marital status, and nationality) and a Kruskal–Wallis test (for demographics with three or more groups, such as age, occupation, years of work experience, level of education, and work unit) were conducted. All statistical analyses were performed using significance levels (p) of 0.05.

Results

Table 1: Socio demographic characteristics of the studied group.

Variables	No	%
Age group/ years		
20 to 29	21	15.9
30 to 39	67	50.8
40 to 49	24	18.2
50 or older	20	15.2
Gender		
Female	100	75.8
Male	32	24.2
Marital status		
Unmarried	67	50.8
Married	65	49.2
Nationality		
Saudi	33	25.0
Non-Saudi	99	75.0
Occupation		
Allied health professionals	14	10.6
Nurse	86	65.2
Physician	25	18.9
Others#	7	5.3
Work experience/years		
≤ 5	28	22.0
6 -10	48	36.4
>10	55	41.7
Level of education		
Less than Bachelors	20	15.2
Bachelors' degree	72	54.5
Graduate degree	40	30.3
Work unit		
Emergency or ICU	26	19.7
Outpatient	14	10.6
Ward	39	29.5
Others##	42	31.8
Two or more units	11	8.3

Others#: Psychologists, Pharmacists, Midwives Others ##: Radiology, Lab

Table 1 showed that the majority of the participants were females (75.8%), non-Saudis (75.0%), and nurses (65.2%) who had graduated with at least a bachelor's degree (84.8%). Approximately half were between 30 and 39 years of age (50.8%)

and unmarried (50.8%). About 41% of the respondents had more than ten years of work experience. Two thirds of the respondents worked in ICU (19.7%), outpatient (10.6%) and inpatient wards (29.5%). The majority of the respondents were practicing during COVID-19 pandemic (91.7%); 46.2% worked directly with COVID-19 patients, and 58.2% had received Occupational Health and Safety training.

Table 2: Descriptive statists for the Rights, Responsibilities, and Practices measures.

Variables	Range	Mean	Standard Deviation	Median
Rights	3.92 to 5.00	4.88	.25	5.00
Responsibilities	3.00 to 5.00	4.87	.30	5.00
Practices	3.50 to 5.00	4.72	.34	4.85

Table 2 showed that the highest possible score for all three measures was five; all mean and median scores indicated that the respondents strongly agreed with their rights and responsibilities and always exercised safe practices in their care routines.

Table 3: Means and standard deviations for rights with demographic variables.

Rights	Mean	SD	Test	p
Gender[1]				
Female	4.90	.24	-2.1	**.031***
Male	4.83	.28		
Marital status[1]				
Unmarried	4.90	.24	-2.1	**.034***
Married	4.86	.25		
Nationality[1]				
Saudi	4.79	.33	2.25	**.024***
Non-Saudi	4.91	.21		
Occupation[2]				
Allied health professionals	4.60	.40	16.2	**.001****
Nurse	4.91	.22		
Physician	4.90	.14		
Others[#]	4.97	.06		
Work experience[2] /years				
< 5	4.89	.22	7.60	**.022***
6 - 10	4.93	.19		
>10	4.83	.29		

Others#: Psychologists, Pharmacists and Midwives

*: Statistically significant at p < .05. **: Statistically significant p < .01.

***: Statistically significant p < .001. SD: Standard Deviation

1: Standardized test statistic yielded from the Mann-Whitney U test. 2: Kruskal-Wallis statistics.

As shown in Table 3, HCWs awareness of their rights was significantly related to gender (z = -2.15, p = 0.031) (female had significantly higher scores than males) and with marital status (z = -2.12, p =0.034); while unmarried had significantly higher scores than married workers. The data also revealed that non-Saudi HCWs had significantly higher awareness of rights scores than Saudis (z = 3.01, p =0.003). Nurses had significantly higher scores than technicians or specialists (p = 0.001); health care workers who had between five to 10 years of experience had significantly higher scores than their colleagues with more than 10 years of experience (p = 0.018). Awareness of Rights did not differ significantly with the level of education.

Table 4: Mean and Standard Deviation for responsibilities with demographic variables.

Responsibilities	Mean	SD	Test	p
Nationality[1]				
Saudi	4.74	.43		
Non-Saudi	4.92	.22	3.01	**.003****
Occupation[2]				
Allied health professionals	4.59	.59		
Nurse	4.92	.21	8.47	**.037***
Physician	4.87	.26		
Others[#]	4.91	.16		
Work unit[2]				
Emergency or ICU	4.95	.20		
Outpatient	4.89	.19		
Ward	4.94	.16	9.85	**.043***
Others[##]	4.81	.34		
Two or more units	4.67	.60		

Others#: Psychologists, Pharmacists and Midwives Others ##: Radiology, Lab
*: Statistically significant at p < .05. **: Statistically significant p < .01. SD: Standard Deviation
[1]: Standardized test statistic yielded from the Mann-Whitney U test. [2]: Kruskal-Wallis statistics.

Table 4 showed that there was a statistically significant higher responsibilities scores among non-Saudi HCWs compared to Saudi (z=3. 01, p =0.003) among nurses when compared to other groups and with work unit (KW (4) = 9.85, p =0.043) but it did not change with the level of education. Adjusted pair wise comparison results did not reveal any significant comparisons.

Table 5: Mean and standard deviation for practices measures with demographic variables.

Practices	Mean	SD	Test	p
Age group/years[2]				
20 - 29	4.67	.27	9.94	**.019***
30 - 39	4.78	.32		
40- 49	4.59	.41		
≥ 50	4.73	.37		
Nationality[1]				
Saudi	4.52	.42	3.44	**.001*****
Non-Saudi	4.79	.28		
Occupation[2]				
Allied health professionals	4.56	.42		
Nurse	4.82	.23	15.83	**.001*****
Physician	4.48	.45		
Others#	4.75	.44		
Years of work experience[2]				
≤ 5	4.65	.36		
6- 10	4.81	.27	6.40	**.041***
> 10	4.69	.38		

Others#: Psychologists, Pharmacists, and Midwives
*: Statistically significant at p < .05. ***: Statistically significant p < .001.
SD: Standard Deviation 1: Standardized test statistic yielded from the Mann-Whitney U test.
2: Kruskal-Wallis statistics.

Table 5 showed that practices scores were statistically significant different with age groups (KW (3) = 9.94, p =0.019), the adjusted pairwise comparison results revealed that only those between 30 and 39 years of age had significantly higher scores than those between 40 and 49 (p =0.028). Non-Saudi HCWs had statistically significant higher practice scores than Saudi HCWs (z = 3.44, p =0.001). Practices scores also differed with occupations; adjusted pairwise comparison results revealed that only nurses had significantly higher scores compared to physicians (p = 0.002). Practice scores also showed statistically significant difference with years of work experience (KW (2) = 6.40, p =0.041). Adjusted pairwise comparison results did not reveal any significant comparisons. Furthermore, there was no statistically significant difference between practice scores and the level of education.

Discussion

The accelerating pace in COVID-19 pandemic is challenging for humanity in general and HCWs in particular. Thus, while they are at the frontline of fighting the pandemic, they are also at high risk to catch the infection. In fact, they are more likely to acquire COVID-19 infection than general population (Olum et al., 2020).Hence, the effective administration of OHS programs has been considered as a major challenge for health institutions during the pandemic (Wicclair, 2011).

Socioeconomic characteristics of the participants were obtained to guide planning and to determine whether HCWs' responsibilities and practices differed based on their characteristics. The majority of the respondents in the present study were committed to OHS practices during the COVID-19 pandemic (91.7%); however, less than half (46.2%) worked directly with COVID-19 patients. More than half (58.2%) of healthcare workers in KAUUH have received OHS training (Table 1). These results were in accordance with that of Alsahafi and Cheng (2019) in their work on Health care workers' awareness and infection control practices about Ebola virus disease in Hajj 2015; who found that almost two thirds of HCWs were aware of the guidelines or protocols for the care of patients with infectious diseases because they had received substantial education and training courses.

The current study revealed that almost all the respondents had sufficient awareness of their rights and responsibilities and always exercised safe practices in their care routines (Table 2). This was in line with the findings of Huynh et al. (2020) who reported that 88.4% of Chinese health care workers had sufficient knowledge regarding COVID-19. This awareness is highly important‑for HCWs to take the appropriate precautions in treating and preventing infection (Saqlain et al., 2020).

The level of awareness showed a significant correlation with all socio-demographic factors except for education and years of experience. With regards to gender, female health care workers had significantly higher scores than males on the level of awareness of their rights (Table 3). These findings were similar to those of a study conducted in the United States, in which awareness was found to be higher among women compared to men

(Cutler et al., 2020). This result is not surprising, as women's empowerment is increasing (Saqib, 2016), women who are not aware of their rights cannot claim them.

As regards occupational differences, nurses had higher scores for awareness of their rights, responsibilities, and safe practices than other HCWs categories (KW (3) = 16.27, p =0.001; KW (3) = 8.47, p =0.037; and KW (3) = 8.47, p =0.037, respectively) (Tables 3,4,5). These results support an earlier study done by Abdulraheem and his collaegues (2012) on knowledge, awareness and compliance with standard precautions among health workers in north eastearn Nigeria, who reported that 85.5% of nurses had more awareness of their rights than those of other occupations. Also, a study made by Bhargava et al. (2013) on assessment of knowledge, attitude and practices among healthcare workers in a tertiary care hospital showed that nursing staff had a high score on needle safety practice (mean score was 8.45 + 1.787), while both doctors and attendant staff reported less compliance to prevention practices (mean scores were 7.84 + 2:109 and 6.76 + 1.975, respectively). Moreover, these results may be due to the competent monitoring by the physician-in-charge, who is responsible for the implementation of safety practices (Bhargava et al., 2013).

An important finding in the current study was that a high level of awareness of rights, responsibilities, and practices was prevalent among non-Saudi HCWs (z= 3.01, p= 0.003; z= 3.01, p= 0.003; and z= 3.44, p=0.001, respectively) (Tables 3,4,5). This could be attributed to the absence of family members around; which could decrease the level of concern about transmitting the disease to loved ones. Higher awarness of rights, responsibilities and practices among non Saudis may be related to the fact that experience and professional attitude is a prerequisite for hiring them and is an obligation in their contract.

This is opposite to the results reported by Abolfotouh et al. (2017) who studied the level of concern among hospital-based healthcare workers regarding Middle East Respiratory syndrome (MERS) outbreaks in Saudi Arabia in 2017 and showed that there was a higher level of concern among Saudi HCWs compared to non-Saudis.

Age is one of the most significant factors affecting the practice of OHS (Crawford et al., 2016). The current study showed that HCWs aged above

30 years or older had higher scores on safety practices when compared with those between 40–49 years of age (p = 0.028) (Table 5). This was in agreement with a study conducted by Desta et al. (2018) on knowledge, practice and associated factors of infection prevention among healthcare workers in Debre Markos referral hospital, Northwest Ethiopia. However, it was different than the findings of (Olum et al., 2020) in their study on knowledge, attitude, and practices of health care workers at Makerere University Teaching Hospitals, Uganda, who found that over 70% of the HCWs had good practices in mitigating COVID-19 infection, especially those 40 years of age or older (742.9; p = 0.005). This may be due to the higher risk of COVID-19 in older individuals (WHO, 2020b).

It was obvious from the present study that unmarried HCWs had a significantly higher level of awareness about their rights than married HCWs (z = -2.12, p =0.034) (Table 3). This contradicted a number of studies where married nurses commonly had higher levels of awareness due to the age and experience (Honarbakhsh et al., 2018 and Al-Dossary et al., 2020). They may be due the extra time that unmarried nurses spend in investigating their rights.

Other important factors to consider in the application of OHS programs in hospitals are years of experience and level of qualification. In a related study, Desta et al. (2018) found that HCWs with a higher educational level and those with experience of more than 10 years had higher scores on knowledge and practice of OHS than those who had a lower educational level and those with less than 10 years of experience. However, the present study found no significant differences among HCWs in terms of these variables (Tables 3,4,5), and this may be due to the fact that most of the respondents had graduated with at least a bachelor's degree (84.8%), and most had more than ten years of work experience (41.7%) (Table 1). Nevertheless, these results agree with the findings reported by Olum et al. (2020).

Conclusion: The present work showed that the majority of participants had sufficient awareness of their rights, responsibilities, and safe practices, which is good for preventing the transmission of COVID-19. Nurses and non-Saudi HCWs had higher scores

across all variables, and HCWs aged 30–39 years had better practices for prevention of COVID-19 than those older than 40 years. There was no statistically significant difference in the level of awareness of the rights, responsibilities, and practices for COVID-19 mitigation among HCWs irrespective of their professions or qualifications which could be the result of the awareness campaigns conducted by healthcare organizations during the pandemic.

Limitation of this study that it was done early in the pandemic, and information was not much available and thus it corresponded to a variable level of awareness of roles, responsibilities and practice related to COVID 19 pandemic.

Recommendations: Try to improve the knowledge and practices of HCWs about hospital OHS through continuing in-service educational programs, emphasizing the magnitude of the matter and the importance of keeping up to date and following evidence-based practices of OHS, providing training programs for new HCWs at regular intervals, and consistently following up using an observation checklist to assess the levels of practice, especially among Saudi HCWs.

Conflict of Interest

The authors have no conflicts of interest to declare.

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