

Perspective of healthcare workers regarding self-protection during COVID-19 pandemic: A cross-sectional study from Saudi Arabia



Sultan M. Alshahrani ^{1,*}, Najim Z. Alshahrani ², Saud Dhafer Mohammed ³, Hamed Ali Mohammed ³, Yazeed Fahad ³, Abdulmohsen Nasser Hamed ³

¹Clinical Pharmacy Department, College of Pharmacy, King Khalid University, Abha, Saudi Arabia

²Department of Family Medicine, College of Medicine, King Abdulaziz University, Jeddah, Saudi Arabia

³College of Medicine, Bishah University, Bishah, Saudi Arabia

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ABSTRACT

The aim of this study was to assess the perception of healthcare workers regarding self-protection during the COVID-19 pandemic in Saudi Arabia. The novel COVID-19 pandemic has completely changed the dynamic of governments, social lives, global economy, and health care systems priorities. Healthcare workers (HCWs) are one of the most group of people at risk of acquiring the infection, especially those who are taking care of COVID-19 patients. This cross-sectional survey-based study was conducted among HCWs during the period between May to July 2020 in Saudi Arabia. More than 70% of participating HCWs were able to access the personal safety policies and procedures in the workplace and COVID-19 treatment algorithm. In addition, the presence of an infection control team was also present in most of the institutes. The most common accessible personal protective equipment was hand gel sanitizer (89.9%), followed by disposable gloves (82.5%) and disposable masks (78.9%). More than 75% of participants reported that their institute has a special infection control team during the COVID-19 pandemic. Most of the respondents (~75%) believe that their institute would take all necessary measurements to protect their personal integrity at work. Several precautionary measures were undertaken appropriately by the Saudi Government to overcome the COVID-19 immediate and futuristic consequences. Personal protective equipment and protective measures would be crucial for public health if implemented appropriately during highly spreading infections (e.g., COVID-19) to minimize the transmission and preserve health.

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1. Introduction

The outbreak of the new coronavirus (COVID-19) suddenly hit the world at the end of 2019. The World Health Organization (WHO) declared it a pandemic on 11th March 2020 (WHO, 2020a). The pandemic has completely changed the dynamic of governments, social lives, global economy, and health care systems priorities. Consequently, it has shifted the vision of the world toward the emerging of infectious diseases and the urgent emphasis on control measures. COVID-19 virus is transmitted among people through close contact and respiratory

droplets, according to the current evidence (WHO, 2020b). Healthcare workers (HCWs) are one of the most group of people at risk of acquiring the infection, especially those who are taking care of COVID-19 patients; therefore, they are required to protect themselves and prevent transmission in the healthcare setting (Chou et al., 2020).

In Saudi Arabia, several precautionary measures were undertaken to overcome COVID-19 immediate and futuristic consequences. The immediate action was to set up a committee of various governmental organizations to determine and implement the actions needed against COVID-19. The Ministry of Health (MoH) in Saudi Arabia had the sole responsibility to handle COVID-19 cases through hospitals and check-up clinics that spread-out all over the kingdom (Alshammari et al., 2020; SPA, 2020).

To date, there is no vaccine available for the outbreak. Avoidance and social distancing are the only ways to be protected against the transmission

* Corresponding Author.

Email Address: shahrani@kku.edu.sa (S. M. Alshahrani)

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Corresponding author's ORCID profile:

<https://orcid.org/0000-0002-6194-7092>

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of the virus or at least decrease the spreading of the virus; Consequently, the MoH has started major initiatives improve public awareness and inform them on various forms of stopping the transmission of the virus followed by the Ministry of Health (MoH) public campaign "We all are responsible." These control measures played an important and vital role in constraining the transmission of the novel SARS-CoV-2 with fewer mortalities. The mortality rate is very low in Saudi Arabia compared to other countries due to the best health care facilities available at all levels in the Kingdom of Saudi Arabia (Alshammari et al., 2020; Ahmad et al., 2020).

Healthcare workers (HCWs) are a cornerstone of everyday healthcare and protection in Saudi Arabia and have the ability to serve under a number of positions and circumstances during this latest COVID-19 pandemic (Livingston et al., 2020). In general, HCWs in Saudi Arabia are acknowledged for their importance in preventive care, and in COVID-19 response, they stayed at the forefront for public safety by functioning as primary contact points (CGC, 2020).

Ministry of Health (MOH) in Saudi Arabia has been followed by WHO recommendation by implementing safety protocols and using appropriate personal protective equipment (PPE) for healthcare workers. However, basic protective equipment and safety protocols are not always easily understandable and available among the HCWs who are dealing with COVID-19 patients (Barry et al., 2020; Kretchy et al., 2020; Mirza et al., 2019).

The aim of this study was to assess the perception of healthcare workers regarding self-protection during the COVID-19 pandemic in Saudi Arabia.

2. Method

2.1. Study design

This is a cross-sectional questionnaire-based study that carried-out during the lockdown period due to the COVID-19 pandemic among Healthcare workers in Saudi Arabia.

2.2. Data collection and setting

The study was between May 1st, 2020, to July 1st, 2020. HCWs were approached through main social media platforms such as Twitter and Whatsapp messages.

2.3. Study tool

The survey was utilized from a previous study conducted among Latin American HCWs during the COVID-19 pandemic (Delgado et al., 2020). The survey consisted of two parts (total of 17 questions): Demographics (8 questions) and Perception-related part (9 questions). The respondents were asked regarding the necessary protective measures and resources that were used during the pandemic at

their institutions. In addition, they were asked about their readiness and awareness ability toward safety policies and protective measures. The HCWs' perception toward the support that is provided from local authorities and institutions was measured using a five-point Likert scale (Strongly Agree, Agree, Neutral, strongly disagree, and disagree).

2.4. Data analysis

Data were cleared, entered to SPSS version 21 (SPSS Statistics for Windows, version 21.0, IBM Corp., USA). The demographic results were reported as frequency (n) and percentage. Perception data were represented using a five-point Likert scale as 5 strongly agree; 4 agree; 3 neutral; 2 disagree; and 1 strongly disagree. Then, the mean and standard deviation were calculated.

3. Results

3.1. Demographic characteristics

Out of 228 responded HCWs, more than two-thirds were male (64.5%), and 35.5% were females. The majority of HCWs were between the age of 25-34 and 35-44 years old at 41.7% and 24.1%, respectively. Most of the participants were Saudis (81.1%), while more than half of them were working in an urban area. Third of the respondent (33.3%) come from the Southern region, followed by 21.1% from the western region of Saudi Arabia. About half of the participants (53.9%) were physicians, while nurses consist of 13.6%. The government sector was the major site of HCWs (74.1%), while half of the participants (50.4%) were working in general hospitals. Demographic data are summarized in Table 1.

3.2. Perception and practice

Personal Protective Equipment (PPE) was accessible for most of the participants (87.3%). The most common accessible PPE was Hand gel sanitizer (89.9%), followed by disposable gloves (82.5%), disposable masks (78.9%). The N95 masks and facial protective shields were available for 50% of the participants at their workplace (Fig. 1). The personal safety policies and procedures were accessible for 77.6% of the participants. More than 75% of participants reveal that their institute has a special infection control team during the COVID-19 pandemic. Only 53.5 reported that they had access to telemedicine to evaluate and follow-up with the patients.

About 70% of the participants strongly agreed/agree with the statement that their institute supports them with additional human resources during sickness. In addition, most of the respondents (~75%) believe that their instituted would take all necessary measurements to protect their personal integrity at work. Likewise, the local health authority

that would provide equal support for their employees during the pandemic to protect their

integrity. Practice and perception outcomes are represented in Table 2 and Table 3.

Table 1: Demographic characteristics of the study participants

Demographic characteristic	Number (n)	Percentage (%)
Sex		
Female	81	35.5
Male	147	64.5
Age group		
18-24	54	23.7
25-34	95	41.7
35-44	55	24.1
45-54	20	8.8
> 55	4	1.8
Nationality		
Saudi	185	81.1
Non-Saudi	43	18.9
Area of the work		
Rural	141	38.2
Urban	87	61.8
Region		
Northern region	24	10.5
Eastern region	41	18
Southern region	76	33.3
Western region	48	21.1
Central region	39	17.1
Profession		
Medicine	123	53.9
Nursing	31	13.6
Pharmacy	22	9.6
Radiology	13	5.7
Medical laboratories	18	7.9
Others (administrative, volunteers, and secretary)	21	9.2
Workplace classification		
Government	169	74.1
Private	38	16.7
Both	21	9.2
Type of organization		
General hospital	115	50.4
Primary healthcare center	48	21.1
Administrative centers (medical offices, health affairs)	20	8.8
Others (private hospitals, chain pharmacies)	45	19.7

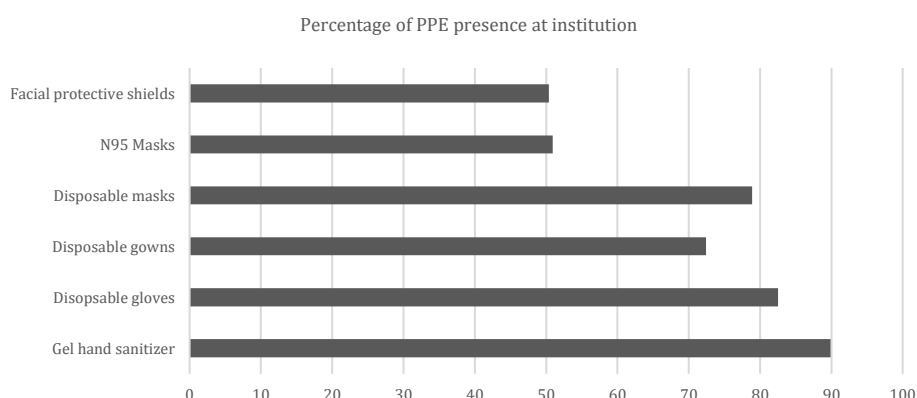


Fig. 1: Most common personal protective equipment used by HCWs

Table 2: HCWs protective practice during COVID-19 pandemic

Practice items	YES n (%)	NO n (%)
Accessibility to personal protective equipment (PPE) in your workplace	199 (87.3)	29 (12.7)
Presence of a special infection control team for the COVID-19 pandemic	176 (77.2)	52 (22.8)
Accessibility to personal safety policies and procedures in the workplace	177 (77.6)	51 (22.4)
Accessibility to COVID-19 diagnostic and treatment algorithms	163 (71.5)	65 (28.5)
Accessibility to telemedicine to evaluate and follow up with patients	122 (53.5)	106 (46.5)

Table 3: HCWs protective perception towards their self-protection during COVID-19 pandemic

Perception items	Strongly agree n (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Strongly disagree n (%)	Mean (STD)*
Your medical institution support healthcare workers with additional human resources in case they became sick	79 (34.6)	90 (39.5)	49 (21.5)	7 (3.1)	3 (1.3)	4.03 (0.346)
Your medical institution take all necessary measurements to protect physical integrity in the workplace	73 (32.1)	99 (43.4)	45 (19.7)	7 (3.1)	4 (1.8)	4.0 (0.35)
You are getting support from the local public health authorities in regard to the protection of physical integrity in the workplace	60 (26.3)	101 (44.3)	50 (21.9)	8 (3.5)	9 (3.9)	3.85 (0.23)

*Mean and standard deviation (STD) were calculated for Likert's scale based on a 5-points scale

4. Discussion

Despite the many challenges that have been faced by some countries worldwide, including complex emergencies compounded by fragile health systems, weak disease surveillance, poor response capacity, and a suboptimal level of public health preparedness, the Ministries of Health in Saudi Arabia prepared a developed a national wide action plan against COVID-19 with the support of the WHO Regional Office United Nations agencies (Al-Tawfiq and Memish, 2020). Outstanding efforts were made by the HCWs and healthcare authorities in Saudi Arabia to reduce the mortality of COVID-19 among the public and HCWs.

This is a cross-sectional study to evaluate the perception of healthcare workers toward using personal protective equipment. In addition, the study was intended to assess the preparedness of institutions and local health authorities and the provided support to their employees (Alshammari et al., 2020). Our results reveal that most of the participants had the chance to access PPEs and being provided by their institute. The most common available PPE were gel hand sanitizers and disposable gloves. Disposable and N-95 facemasks were also available for more than half of the participants. Even though there is a shortage of medical PPE worldwide, healthcare workers are obliged to be protected and safe (Godoy et al., 2020).

In our study, more than 70% of participating HCWs were able to access the personal safety policies and procedures in the workplace and the COVID-19 treatment algorithm. In addition, the presence of an infection control team was also present in most of the institutes. The absenteeism from work due to healthcare-related infections would heavily affect the resilience of healthcare systems facing an infectious pandemic (Iannone et al., 2020). Therefore, most of our participants were agreeing on that presence of moral and resource support by the local health authorities and institutions is very crucial.

Healthcare systems should take the appropriate measures to ensure that healthcare workers are safe and protected and do not overconsume the already limited health care resources while ensuring that high-risk patients who are seriously ill receive appropriate triage and treatment (Tabah et al., 2020). Therefore, utilizing remote medicine (Telemedicine) during such times is very important (Portnoy et al., 2020). However, our study shows

that HCWs should be involved more with telemedicine, and they may need more training and awareness improvement, especially with such circumstances.

5. Conclusion

Our study showed the importance of providing the ultimate support to healthcare workers during the COVID-19 pandemic. Healthcare institutes and local authorities in Saudi Arabia are providing the required support to maintain the integrity of the workplace and healthcare system. PPE is important to be available for all HCWs to decrease mortality and keep the provided service optimal. Telemedicine would be a crucial public health measure if implemented during highly spreading infections (e.g., COVID-19) to minimize the transmission among public and HCWs.

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Compliance with ethical standards

Ethical consideration

The survey was anonymous, and all participants' data were kept confidential during all steps of the study. The purpose of the study was elicited in the introductory paragraph of the survey. Participants were able to complete the survey only once and were allowed to terminate the survey at any time they desired. In addition, they were not asked about their names nor the institution's name.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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