



HIGH PERCEIVED PREPAREDNESS AND CAPABILITIES OF THE SAUDI HEALTHCARE SYSTEM AGAINST COVID-19: A NAJRAN STUDY

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Abstract:

Since the effects of the Corona pandemic imposed numerous challenges on health systems and the extent of their preparedness to face the pandemic, the current study aims to evaluate the capabilities of the health care system in the Kingdom of Saudi Arabia in facing the Coronavirus (COVID-19) from the perspective of health sector workers inside the Najran region. This will be accomplished by discussing the health system's awareness in the Kingdom of Saudi Arabia, particularly in the Najran region, with regard to the accessibility of medical professionals, tools, and personal safety measures.. The study's sample comprised seventy-one health workers in the Najran region. In order to meet the study's objectives, the researcher created an electronic questionnaire that evaluates the health care system's capacity to combat the COVID-19 virus from the perspective of health sector workers in the Najran region. The findings showed that 83.43% of the Kingdom of Saudi Arabia's health care system was capable of defending against the COVID-19 virus. Furthermore, the study sample's average responses on the capabilities of the Kingdom's healthcare system were between 80 and 92%. The researcher provides an explanation of this as follows: The Saudi government announced Saudi Vision 2030 with the goal of improving the quality of services and raising the standard of health in the Kingdom. This has been effectively implemented. The report made a number of suggestions, the most significant of which being that the Kingdom of Saudi Arabia should examine and adopt preventive plans, procedures, and measures.

Keywords: Saudi Arabia, emerging infectious illnesses, healthcare workers, COVID-19

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1. INTRODUCTION

According to the World Health Organization (WHO), the novel coronavirus disease, known as COVID-19, which first caused an epidemic in Wuhan, China, in December 2019, has spread throughout the world and is now posing a threat to millions of people's lives. The World Health Organization designated the COVID-19 outbreak as a "pandemic" on March 11, 2020, in response to the rise in coronavirus infections that occurred globally during the first week of March 2020 [1]. Since the virus's introduction, there have been more than 171 million

confirmed cases worldwide, and more than 3.5 million deaths [2].

Worldwide healthcare systems have faced significant hurdles as a result of the COVID-19 epidemic. It now poses a threat to worldwide public health and all health care systems [3]. On March 2, 2020, the Ministry of Health (MOH) declared that the first case had been documented in the Kingdom of Saudi Arabia (The Ministry of Health, 2020). Furthermore, the number of people infected with COVID-19 doubled within a month of the first case being reported, posing a significant challenge to medical personnel. All government agencies were mobilized

immediately to combat the COVID-19 pandemic in the kingdom of Saudi Arabia. Unprecedented precautionary measures were implemented, including widespread quarantine, border and airport closures, and intensive infection control training for medical personnel [4].

An infection control strategy based on the best available data is needed to deal with COVID-19 in any healthcare setting and prevent infection as much as feasible. According to earlier studies, medical personnel may not have the right mindset or knowledge concerning SARS and the Middle East respiratory disease [5]. In order to combat the corona virus epidemic, hospitals in the Kingdom of Saudi Arabia's Najran region took a number of preventive measures, according to a study by Haridi et al. These included training programs on the subject, the provision of N95 face masks, and the availability of all personal protective equipment at all times in the workplace [6].

Governments and health systems across the globe are facing a challenging task as a result of the COVID-19 pandemic, and they must act swiftly to contain the virus's spread. In order to combat the pandemic, many health systems around the world—including the Kingdom of Saudi Arabia—have concentrated on hospital services, adding more beds and ventilators, particularly in intensive care units, and paying close attention to the regulations governing specialized care for severe COVID 19 cases [7]. The purpose of this study was to assess the Kingdom of Saudi Arabia's health care system's capacity to combat the COVID-19 pandemic and lower its associated risks.

The aim of this paper is to assess the capabilities of the health care system in the Kingdom of Saudi Arabia in light of COVID-19, as seen by healthcare professionals in the Saudi Arabian province of Najran.

2. MATERIALS AND METHODS:

2.1. Study design and setting

This is a cross-sectional study of HCWs employed by the Saudi Ministry of National Najran Health Affairs (MNN-HA) at its government hospitals. Since 2006, every facility has held Joint Commission International (JCI) accreditation. The period of data gathering in 2022 was November through December. The HCWs employed by Najran City's government hospitals were the target demographic. A questionnaire was used to obtain the data. The

survey was first written in English, then translated into Arabic, the native tongue, and then back into English to ensure uniformity.

The Directorate of Health in Najran's Ethics Committee granted ethical permission. The participants were informed of the purpose and advantages of the study, as well as the significance of their privacy and confidentiality..

2.2. Study participants

About 8300 HCWs from a variety of specialties and countries work for the MNN-HA. HCWs from MNG-HA were invited to take part in this research. All healthcare workers working in government hospitals in Najran, Saudi Arabia, were involved. Use of convenience sampling was made. We utilized a 95% confidence interval, 80% power, and a significance level of 0.05. Including the 10% nonresponse rate, the sample size computation yields a total sample size of (121).

2.3. Study instruments

The questionnaire, which was based on a survey previously used in studies of HCWs' worries over severe acute respiratory syndrome (SARS), asked questions on the creation of an operating plan to deal with a pandemic in hospitals prior to that of SARS-COV-2. the holding of exercises to treat patients in the case of a pandemic and instruct staff members on patient care and PPE use. Specifically, with relation to the SARS-COV-2 epidemic. Participants were questioned about whether PPE and antiseptics were sufficient, as well as whether they had received the necessary training to use them. Inquired as to whether they had received training on patient ventilation, intubation, and defibrillation following the outbreak of the SARSCOV-2 pandemic. The safety of the healthcare services in connection to the caliber and number of HCWs was one of the topics included in the questionnaire. To encourage a high response rate, the questionnaire was sent with a cover letter outlining the goal of the research, the manner of response, the objective of the study, and data protection. The survey was given with.

3. RESULTS:

3.1. Sociodemographic information on the participants is enclosed with a letter outlining the goals of the research, the way in which

responses are expected, and the security of the data in an effort to elicit a high response rate.

2.4. Statistical methods

Data entry and analysis were done using the Statistical Version 22 of the Package for Social Sciences (SPSS Inc., Chicago, IL). For continuous data, arithmetic means and standard deviations were used; for categorical data,

frequency and percentages were utilized. The unpaired t-test was employed to determine whether there was a significant difference between two continuous variables, and chi-squared tests were used to evaluate the relationships between categorical data. For statistical significance, a p-value of less than 0.05 was taken into consideration.

Table 1. Sociodemographic traits of participants (n=71)

	Variable	n	%	
Your gender	male	55	77.5	
	Female	16	22.5	
Your age	≤ 30 years	36	50.7	
	31-40 years	28	39.4	
	41-50 years	6	8.5	
	≥ 51 years	1	1.4	
Highest qualification achieved	High School	17	23.9	
	Diploma	23	32.4	
	BA	27	38.0	
	MS/PHD	4	5.6	
Years of experience	≤ 5 years	26	36.6	
	6 - 10 years	14	19.7	
	10 – 15 years	19	26.8	
	≥ 16 years	12	16.9	
Type of health care personnel:	Medical doctor	18	25.4	
	Physician assistant	2	2.8	
	Registered nurse	13	18.3	
	Assistant nurse	3	4.2	
	Radiology /X-ray technician	2	2.8	
	Phlebotomist	5	7.0	
	Ophthalmologist		0.0	
	Physical therapist	1	1.4	
	Respiratory therapist	3	4.2	
			1	1.4
		Nutritionist/dietitian		
		Midwife	4	5.6
		Pharmacist	5	7.0
	Pharmacy technician or dispenser	2	2.8	
		2	2.8	
		10	14.1	

Laboratory personnel
other

Seventy-one MNN-HA HCWs—sixteen of whom were health care workers over 30 years old, and the majority (36.6%) female and fifty-five of whom were male—in the Najran region consented to take part in the study and completed questionnaires evaluating the Kingdom of Saudi Arabia's health care capacity to manage COVID-19. Roughly 50% (50.7%) of participants were female. Table 1 lists the following: 18 (25.4%) medical doctors, 13 (18.3%) registered nurses, and 30 (42.3%) other healthcare professionals, such as lab

3.2. The capacity of the Saudi Arabian Kingdom's Najran region's healthcare system to combat COVID-19?

Table 2. The capabilities of the health care system in confronting the COVID -19

no	Questions	Mean	Std. Dev	RII (%)	Rank
1	The COVID-19 pandemic can be managed by Saudi Arabia's healthcare system.	4.58	0.5302	91.67	1
2	Saudi Arabia's medical facilities, particularly the ones at work Capable of managing the COVID-19 epidemic	4.41	0.5907	88.33	3
3	Saudi Arabia's medical facilities received adequate funding.				
3.1	ongoing power source	4.31	0.8334	86.33	5
3.2	Strategies for preventing the pandemic	4.37	0.6763	86.33	4
3.3	Personal protective equipment	4.23	0.8900	84.67	6
3.4	Private isolation rooms	4.10	0.9691	82.00	11
3.5	Diagnostic laboratories	4.07	0.9892	81.33	13
3.6	Intensive care rooms and beds	4.05	0.9816	81.00	14
4	Healthcare professionals receive training on how to carry out isolation protocols..	4.23	0.7449	84.67	6
5	Healthcare professionals are well trained to handle COVID-19.	4.18	0.7477	83.67	8
6	Healthcare professionals receive sufficient funding	3.51	1.3210	70.33	16
7	The local health authorities provide sufficient financial support to the health care fund..	3.97	0.9737	79.33	15
8	The local health authorities provide the health care center with sufficient guidelines regarding the preventative measures..	4.17	0.7403	83.33	10
9	There is a limit to the number of visitors in hospitals.	4.08	1.1390	81.67	12
10	The hospital administration take into account the presence of sufficient distance between people "social distancing"	4.48	0.6507	89.67	2
11	Hospitals have awareness guidelines, masks and sterilizers in hospital departments	4.18	0.8924	83.67	8
	All statements	4.461333	0.91134	89.20	

The capacity of Saudi Arabia's healthcare system to combat COVID-19. When considering the entire text, the RII comes to 89.2%. This indicates that the Saudi Arabian Kingdom is capable of combating the COVID-19.

Table (2) showed that the Paragraph "The COVID-19 pandemic can be managed by Saudi Arabia's

3.3. Compliance with information on infection control procedures

Table 3. Compliance with information on infection control procedures

Questions	Always N (%)	Most of the time N (%)	Rarely N (%)
Do you follow recommended hand hygiene practices?	46 (64.8)	20 (28.2)	5 (7.0)
Do you use a hydro-alcoholic solution or soap and water before touching the patient?	48 (67.6)	16 (22.5)	7 (9.9)
Do you use a hydro-alcoholic solution or soap and water before any cleaning or sanitizing procedures?	49 (69.0)	14 (19.7)	8 (11.3)
Do you use a hydro-alcoholic solution or soapy water after exposure to (or at risk) exposure to body fluids?	49 (69.0)	15 (21.1)	7 (9.9)
Do you follow infection control precautions guidelines when contacting with any patient?	51 (71.8)	15 (21.1)	5 (7.0)

healthcare system.” was given a relative relevance value of 91.67%, ranking it top among responders in this group. This indicates that the Najran region's healthcare system is equipped to handle the COVID-19 pandemic.

Nonetheless, the respondents in this group placed the paragraph "Health care workers receive adequate financial support" near the bottom of the list., with relative importance index equals (70.33%).

Table (3) presents the results, which indicate that 64.8% of the sample adheres to the recommended hand hygiene procedures. Before handling the patient, (67.6%) of the sample used soap and water or a hydro-alcoholic solution. While 71.8% of the sample followed infection control precautions guidelines when interacting with any patient, 69.0% of the sample used a hydro-alcoholic solution or soap and water before any cleaning or sanitizing procedures and used a hydro-alcoholic solution or soapy water after exposure to (or at risk of) exposure to bodily fluids. The high rate of adherence to the preventative measures utilized against Covid-19 was ascribed by the researcher to the fact that healthcare workers in the government hospitals in the Najran region were aware of the significance of following the various preventive measures. Since it shows how eager the Saudi Ministry of Health and hospitals in the Najran area are to offer hospital HCWs every precaution and form of safety during the COVID-19 epidemic.

3.4. Exposure to a patient infected with the COVID-19

Table 4. Exposure to a patient infected with the COVID-19

Report type	Correct Responses	
	F	%
Did you have face-to-face contact (within 1 meter) with a confirmed COVID-19 patient in a health care facility?		
yes	27	38.0
no	44	62.0
If yes, for how long each time		
<15 minutes	26	36.6
5-15 minutes	20	28.2
> 15 minutes	25	35.2
If yes, were you wearing personal protective equipment		
yes	54	76.1
no	17	23.9
If yes, what kind of personal protective equipment you wore it? Check all that apply		
Medical / Surgical Mask	18	25.4
Respiratory protective mask (eg, FFP2, N95 or equivalent masks)	9	12.7
face shield	3	4.2
protective gloves	7	9.9
Goggles or goggles	4	5.6
dress	3	4.2
hooded coats	2	2.8
horns	25	35.2
Have you had direct contact with the surfaces surrounding the patient		
Always	31	43.7
Most of the time	33	46.5
Rarely	7	9.9
which surfaces		
Bed	14	19.7
Bathroom corridors service patient table	7	9.9
Bedside table	5	7.0
Meal table for medical gases art signs	3	4.2
Other	25	35.2

The primary hazards of managing a patient with a Covid-19 infection are indicated in Table (4). The findings demonstrated that a sizable portion of hospital staff members in the Kingdom of Saudi Arabia's Najran region followed all precautions when caring for patients. This requires the Saudi Ministry of Health's administrators to focus on offering preventive instruments in order to uphold worker safety,

guarantee company continuity, and offer patient services.

3.5. Information about the health facility

Table 5. Information about the health facility

Information about the health facility	Always N (%)	Most of the time N (%)	Rarely N (%)	Rank
Does the health facility have infection control guidelines for health workers?	56 (78.9)	9(12.7)	6 (8.5)	1
Does the health care facility have infection control guidelines for standard and additional precautions (transmission)?	52 (73.2)	9 (12.7)	10 (14.1)	6
Does the health facility organize regular infection control training for health workers (at least once a year)?	46 (64.8)	10 (14.1)	15 (21.1)	10
Does the health facility have personal protective equipment?	52 (73.2)	9 (12.7)	10 (14.1)	6
Is personal protective equipment available in sufficient quantities at the health facility?	47 (66.2)	13 (18.3)	11 (15.5)	9
Is the available PPE of good quality and appropriate to the needs?	50 (70.4)	9 (12.7)	12 (16.9)	8
Are hydro-alcoholic solutions readily available (ie available at the point of care) for hand hygiene in the health facility?	54 (76.1)	11 (15.5)	6 (8.5)	3
Is soap and water available for hand hygiene in the health facility?	54 (76.1)	7 (9.9)	11 (15.5)	3
Does the health facility conduct regular audits (at least once a year) to assess hand hygiene and provide regular feedback to health workers?	41 (57.7)	14 (19.7)	16 (22.5)	12
Does the health care facility conduct other infection control audits?	42 (59.2)	12 (16.9)	17 (23.9)	12
Does the health facility check staff on arrival for symptoms of infection?	46 (64.8)	12 (16.9)	13 (18.3)	10
Does the health facility management notify all health workers if a patient infected with COVID-19 is cared for in the health facility?	55 (77.5)	11 (15.5)	5 (7.00)	2
Does the health facility have a well-equipped entrance triage station with trained staff?	53 (74.6)	9 (12.7)	9 (12.7)	5
Are patients suspected of having COVID-19 isolated upon arrival at the health facility?	56 (78.9)	9(12.7)	6 (8.5)	1

According to Table 5's data, 78.9% of the sample stated that upon arrival at the medical facility, a patient was suspected of having COVID-19 isolation. According to the majority of the sample (77.5%), the management of the health facility notifies all medical staff members if a patient receiving care there has a COVID-19 infection. A majority of the sample (57.7%) stated that the healthcare facility performs additional infection control audits in addition to routine audits (at least once a year) to evaluate hand hygiene and give health professionals regular feedback. The high percentage of adherence was ascribed by the researcher to the

preventive measures that health facilities in the Kingdom of Saudi Arabia's Najran region employed. within the framework of the Kingdom of Saudi Arabia 2030, to the availability of a disaster recovery plan and the desire of the Ministry of Health to improve the state of health in Saudi society.

4. CONCLUSIONS:

Hospitals must monitor and manage discovered cases utilizing transmission-based precautions for all confirmed and probable cases in order to effectively handle infectious diseases and disasters. Early detection, testing, and measures are necessary for COVID-19 in hospitals in the Najran region of Saudi Arabia [8]. In this study, we discovered that major misconceptions

concerning COVID-19 and the significance of infection control still exist, despite a high baseline level of awareness. According to the study, respiratory illnesses are common among healthcare professionals who work in hospitals [9]. Furthermore, Kim, T.H. proposed that a significant group implicated in the transmission of disease was infected healthcare personnel [10].

The current study also shows that half of the healthcare workers (HCWs) in the Kingdom of Saudi Arabia's Najran region who had contact with Covid-19-infected cases had their potential for infection looked into. This raises concerns about the spread of infection and how it might affect the standard of care. The study's findings also demonstrate a sizable percentage of participants' personal experiences with catching COVID-19, either as patients receiving care in facilities that provide case-caring or as subjects of inquiries into potential post-contact infections. [10].

The majority of Primary Health Care (PHC) workers in Oyo State, South-Western Nigeria, voiced concerns about the government and their own sense of satisfaction, which was linked to the infection's rapid spread in hospitals, according to a poll of HCWs there [11].

The majority of respondents stated that additional factors that increased the risk of transmission were hospital congestion, improper hand washing and mask use, ignorance about the route of transmission, a lack of rules and procedures, and insufficient training in infection control techniques. Surprisingly low self-reported adherence to infection control strategies was found, especially considering that prior research has shown that self-reported adherence typically overestimates observed behavior..

These results can serve as a benchmark for tracking healthcare workers' perspectives in the event that infectious disease epidemics occur in Saudi Arabia in the future. The majority of study participants expressed worry about their potential to get COVID-19. This degree of worry may negatively affect how MERS patients are handled, whether they are verified or not, as well as how well HCWs perform in general during an outbreak. Hospital staff in the Saudi Arabian Najran region who had previously dealt with disease control procedures

reported feeling quite anxious. Adherence to WHO guidelines is necessary to guarantee sufficient assistance for frontline healthcare workers. Antiviral medications, personal protective practices, and infection control methods must be implemented to safeguard them [2]. During an outbreak, all of these control methods may be essential to preserving the integrity of the healthcare system.

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