Journal of Community Medicine & Public Health
Aldahmashi HM, et al. J Community Med Public Health 5: 228.
www.doi.org/10.29011/2577-2228.10028
www.gavinpublishers.com

OPEN ACCESS

GAVIN PUBLISHERS

Research Article

Evaluating the Knowledge and Compliance to Covid-19 Protocol among Health Practitioners in Hafr Al Batin Region of Kingdom of Saudi Arabia, after 65% of its Population is Fully Immunized

Hadwan Mibrad Aldahmashi*, Sabah Alharbi, Amal Alharbi, Saad Alshammary, Oqalaa Alshammary, Sami Faisal, Fahad Naif Almutari

Hafr Albatin Directorate of Health Affairs, Ministry of Health, College of Applied Science, University of Hafr Albatin, Saudi Arabia

***Corresponding author:** Hadwan Mibrad H Aldahmashi, Hafr Albatin Directorate of Health Affairs, Ministry of Health, College of Applied Science, University of Hafr Albatin, 15 Hafr Albatin, Eastern Region, Saudi Arabia.

Citation: Aldahmashi HM, Alharbi S, Alharbi A, Alshammary S, Alshammary O, et al. (2021) Evaluating the Knowledge and Compliance to Covid-19 Protocol among Health Practitioners in Hafr Al Batin Region of Kingdom of Saudi Arabia, after 65% of its Population is Fully Immunized. J Community Med Public Health 5: 228. DOI: 10.29011/2577-2228.100228

Received Date: 15 December, 2021; **Accepted Date:** 21 December, 2021; **Published Date:** 24 December, 2021

Abstract

An outbreak of respiratory illness in December 2019 came to be known as COVID-19. It became a global pandemic. Saudi Arabia started its enormous immunization program from December 2020. After having fully immunized 65% of its population we compare the compliance to COVID-19 protocol among primary and secondary care nurses and physicians in Hafar Al Batin region, Kingdom of Saudi Arabia.

Methods: A study was conducted on 330 participants from four selected PHCs and all the secondary care hospitals in the city of Hafar Al Batin, in the Eastern Province of Saudi Arabia. A modified survey questionnaire inspired from Mohammad Umair Khan's questionnaire was used with permission. Trained research assistants interviewed the participants.

Results: We observed negligible difference in knowledge and alertness among nurses and physicians of primary and secondary care centres. Although there was a huge difference between the qualification levels and years of experience.

Conclusion: Our study suggests that compliance to COVID-19 protocol was extremely high among health practitioner even after one and a half year into the pandemic. Saudi Arabia was better prepared to handle COVID-19 as it was battling MERS-CoV from past 8 years. Strict measures taken by Saudi Government and compliance to COVID-19 protocol by health care workers helped in containing the spread of virus. Vast immunization helped in avoiding multiple waves as observed in other parts of the world.

Keywords: Covid-19; Pandemic; Vaccine; Immunization; Physicians; Nurse

Introduction

In December, 2019, Wuhan city, the capital of Hubei province in China, became the center of an outbreak of pneumonia of unknown cause which was later designated Coronavirus disease 2019 (COVID-19) by the World Health Organization. In February 2020 WHO announced that COVID- 19 has become a pandemic [1,2]. The number of cases started to increase rapidly worldwide. The challenges faced by Kingdom of Saudi Arabia were, Millions of pilgrims from all over the world visit here every year as it has the two holiest cities of the Muslim world. Saudi Arabia is also home to millions of expats who earn their livelihood here. Curbing the arrival of foreign pilgrims to implementing strict total lockdown were very difficult tasks [3]. Ministry of health of Saudi Arabia did incredible work in handling the Covid-19 pandemic. Testing, treatment and vaccination were all provided for free [4], to everyone including citizens and expats (including the illegal ones). Ministry of health constantly updated the population through social media, messaging, daily news briefing and through various digital platforms. Tremendous work by Physicians and nurses of ministry of health by strictly complying with the covid-19 protocol helped infighting the pandemic.

In this study we have tried to evaluate knowledge, attitudes and practices related to COVID -19 among nurses and physicians. At the time when Saudi Arabia has fully vaccinated 65% of its population. We aimed to explore the practice behaviours of nurses and physician in Hafr Al Batin especially during COVID-19 outbreak at various levels of care (primary, secondary) and identify the variables predicting practice performance.

Methods and Design

Due to the large number of PHC in Hafar al Batin four centres were selected according to: 1. The highest visit rate. 2. Geographical distribution. All secondary care hospitals in Hafar Al Batin were included. A minimum number of 330 participants was the target sample size.

The inclusion criteria included nurses and doctors who work in the selected health facility to visit the selected PHCs in Hafar Al-Batin. Also, those above 20 years old and has accessed and availed certain services in the selected PHCs during the period of data gathering were included. A convenience sampling method was used in which the participants were recruited on ease of accessibility. Rasoft software was used to calculate the sample size with confidence interval and margin of error set at 95% and 5% respectively.

Procedure

The data gathering was done by trained research assistants in two phases which covers the pilot testing and the final gathering. Data gathering was done in secondary care and PHCs during duty hours where respondents are conveniently available for interview.

Measurements

A modified survey questionnaire by Muhammad Umair Khan was used with permission from the authors. A pilot study was conducted on 30 respondents. Reliability coefficient was calculated by using SPSS v.20 and the value of Cronbach's alpha was found to be 0.74. The data of the pilot study was not used for the final analysis.

The questionnaire has 2 parts. First part gathered information about the participants' personal information. Second part had various sections. First section sought information about the knowledge of health care workers and had 17 questions regarding sources, incubation period, mode of transmission and way of diseases preventions. The second section included 7 questions assessing the attitude of health care worker toward COVID 19 as preventable, prevalence and controllable. The third section was about measures taken towards infection control practice by health care worker. It consisted of 8 questions about uses of personal equipment, hand hygiene and healthy style for health worker.

Data Analysis

Categorical variables like gender, age, profession and years of experience etc. are presented in frequencies and percentages. Chi-square / Fisher's exact test was used according to whether the cell expected frequency is smaller than 5 and it was applied to determine the significant association among categorical variables. P-value <0.05 two-tailed was considered as statistically significant. All data was entered and analyzed through statistical package SPSS version 25.

Results

Impact and Association between primary and secondary healthcare worker knowledge, attitude and practice towards COVID19 outbreak (Table 1)

Variables	Description	Primary healthcare	Secondary healthcare	*P- value*
Gender	Male	65 (32.5%)	45 (34.6%)	0.690
	Female	135 (67.5%)	85 (65.4%)	
Age	<29	24 (12.0%)	29 (22.3%)	*0.018
	30-39	126 (63.0%)	83 (63.8%)	
	40-49	40 (20.0%)	17 (13.1%)	
	50-59	6 (3.0%)	1 (0.8%)	
	>=60	4 (2.0%)	0 (0.0%)	
Profession	Physician	32 (16.0%)	25 (19.2%)	0.448
	Nurse	168 (84.0%)	105 (80.8%)	
Years of experience	<3	7 (3.5%)	20 (15.4%)	*0.002
	3-6	39 (19.5%)	21 (16.2%)	
	7-10	56 (28.0%)	31 (23.8%)	
	>10	98 (49.0%)	58 (44.6%)	
Education	Diploma	144 (72.0%)	71 (54.6%)	*<0.001
	Bachelor's degree	43 (21.5%)	45 (34.6%)	
	Masters	4 (2.0%)	9 (6.9%)	
	Board certified	1 (0.5%)	5 (3.8%)	
	PhD	0 (0.0%)	0 (0.0%)	
	Others	8 (4.0%)	0 (0.0%)	
Nationality	Saudi	163 (81.5%)	88 (67.7%)	*0.004
	Non-Saudi	37 (18.5%)	42 (32.3%)	

COVID-19 Related Information Source	Ministry of Health (MOH)	168 (84.0%)	97 (74.6%)	0.464
	World Health Organization	12 (6.0%)	11 (8.5%)	
	Social Media/Public news	9 (4.5%)	11 (8.5%)	
	Health Care Professional/ Colleague	2 (1.0%)	2 (1.5%)	
	Published literature	4 (2.0%)	3 (2.3%)	
	Internet resources	3 (1.5%)	5 (3.8%)	
	Others	2 (1.0%)	1 (0.8%)	
Covid-19 patients develop severe acute respiratory illness	Yes	162 (81.0%)	114 (88.4%)	0.205
	No	31 (15.5%)	12 (9.3%)	
	I don’t know	7 (3.5%)	3 (2.3%)	
Fever, cough and shortness of breath are hallmark symptoms of covid-19:	Yes	186 (93.0%)	123 (96.1%)	0.101
	No	7 (3.5%)	5 (3.9%)	
	I don’t know	7 (3.5%)	0 (0.0%)	
	Yes	184 (92.0%)	124 (96.9%)	
People with co-morbidity (Diabetes, cancer and other chronic diseases) are more likely to be infected	No	11 (5.5%)	2 (1.6%)	0.168
	I don’t know	5 (2.5%)	2 (1.6%)	
	Yes	190 (95.0%)	126 (98.4%)	
Incubation time for virus is 1-14 days	No	6 (3.0%)	2 (1.6%)	0.190
	I don’t know	4 (2.0%)	0 (0.0%)	
	Yes	155 (77.5%)	93 (72.7%)	
The vaccine available in Saudi Arabia are approved for emergency use by WHO?	No	7 (3.5%)	2 (1.6%)	0.226
	I don’t know	38 (19.0%)	33 (25.8%)	
	Yes	89 (44.5%)	51 (39.8%)	

Can immunized person with two doses of vaccine still have Covid-19?	No	47 (23.5%)	50 (39.1%)	*0.006
	I don't know	64 (32.0%)	27 (21.1%)	
	Yes	165 (82.5%)	112 (87.5%)	
Can previously Covid-19 infected person get reinfected	No	7 (3.5%)	3 (2.3%)	0.473
	I don't know	28 (14.0%)	13 (10.2%)	
	Yes	190 (95.0%)	126 (98.4%)	
The fully Immunized persons have less severe Covid-19 infection than the non-immunized person?	No	6 (3.0%)	2 (1.6%)	0.190
	I don't know	4 (2.0%)	0 (0.0%)	
	Yes	198 (99.0%)	121 (94.5%)	
RT-PCR (Polymerase Chain Reaction) can used to diagnose covid19	No	2 (1.0%)	0 (0.0%)	*0.002
	I don't know	0 (0.0%)	7 (5.5%)	
	Yes	165 (82.5%)	112 (87.5%)	
Has application such as Tawakkalna and Sehaty helped in controlling the spread of infection	No	7 (3.5%)	3 (2.3%)	0.473
	I don't know	28 (14.0%)	13 (10.2%)	
	Yes	190 (95.0%)	126 (98.4%)	
Has the regular updates from Ministry of Health helped improving the knowledge and handling the situation?	No	6 (3.0%)	2 (1.6%)	0.190
	I don't know	4 (2.0%)	0 (0.0%)	
	Yes	89 (44.5%)	51 (39.8%)	
After lifting the compulsory social distancing norms are people still conscious about the virus?	No	47 (23.5%)	50 (39.1%)	*0.006
	I don't know	64 (32.0%)	27 (21.1%)	
	Yes	89 (44.5%)	51 (39.8%)	

Has the population become more hygiene conscious after this pandemic?	No	47 (23.5%)	50 (39.1%)	*0.006
	I don't know	64 (32.0%)	27 (21.1%)	
	Yes	197 (98.5%)	125 (97.7%)	
Individuals who have a history of travel to countries and cities that have a spread out of infection in the past 14 days should be quarantined and tested	No	3 (1.5%)	3 (2.3%)	0.578
	I don't know	0 (0.0%)	0 (0.0%)	
	Yes	175 (87.5%)	119 (93.0%)	
Covid-19 can be fatal	No	16 (8.0%)	6 (4.7%)	0.282
	I don't know	9 (4.5%)	3 (2.3%)	
	Yes	198 (99.0%)	126 (98.4%)	
COVID-19 is transmitted from infected person to another	No	2 (1.0%)	0 (0.0%)	0.110
	I don't know	0 (0.0%)	2 (1.6%)	
	Yes	186 (93.0%)	125 (97.7%)	
Individuals who have been exposed to COVID-19 may transmit the infection even before they have symptoms	No	4 (2.0%)	2 (1.6%)	0.111
	I don't know	10 (5.0%)	1 (0.8%)	
	Yes	89 (44.5%)	51 (39.8%)	
COVID-19 has less fatality rate than MERS-CoV	No	47 (23.5%)	50 (39.1%)	*0.006
	I don't know	64 (32.0%)	27 (21.1%)	
	Yes	179 (89.5%)	123 (96.1%)	
COVID -19 can be transmitted by talking to any infected individuals with distance less than one meter	No	16 (8.0%)	5 (3.9%)	0.060
	I don't know	5 (2.5%)	0 (0.0%)	
	Yes	196 (98.0%)	126 (98.4%)	

COVID -19 can be transmitted through touching infected surfaces (door handles. stair poles, equipment)	No	2 (1.0%)	2 (1.6%)	0.476
	I don't know	2 (1.0%)	0 (0.0%)	
	Yes	187 (93.5%)	121 (94.5%)	
Health care provider are among the high risk groups	No	9 (4.5%)	3 (2.3%)	0.495
	I don't know	4 (2.0%)	4 (3.1%)	
	Strongly Disagree	5 (2.5%)	16 (12.5%)	
Transmission of covid-19 infection can be prevented by using universal precautions given by CDC, WHO etc.	Disagree	3 (1.5%)	4 (3.1%)	*0.002
	Neutral	0 (0.0%)	0 (0.0%)	
	Agree	41 (20.5%)	21 (16.4%)	
	Strongly agree	151 (75.5%)	87 (68.0%)	
	Strongly Disagree	6 (3.0%)	16 (12.5%)	
Prevalence of covid-19 can be reduced by active participation of health care worker in hospital infection control program	Disagree	3 (1.5%)	4 (3.1%)	*0.006
	Neutral	7 (3.5%)	5 (3.9%)	
	Agree	47 (23.5%)	34 (26.6%)	
	Strongly agree	137 (68.5%)	69 (53.9%)	
	Strongly Disagree	6 (3.0%)	19 (14.8%)	
Any related information about covid-19 should be disseminated among peers and other healthcare workers	Disagree	6 (3.0%)	4 (3.1%)	*0.002
	Neutral	3 (1.5%)	2 (1.6%)	
	Agree	33 (16.5%)	13 (10.2%)	
	Strongly agree	152 (76.0%)	90 (70.3%)	
	Strongly Disagree	7 (3.5%)	19 (14.8%)	

Covid-19 patients should be kept in isolation	Disagree	3 (1.5%)	1 (0.8%)	*0.001
	Neutral	4 (2.0%)	0 (0.0%)	
	Agree	32 (16.0%)	11 (8.6%)	
	Strongly agree	154 (77.0%)	97 (75.8%)	
	Strongly Disagree	3 (1.5%)	10 (7.8%)	
Intensive and emergency treatment should be given to diagnosed patients	Disagree	5 (2.5%)	4 (3.1%)	*0.045
	Neutral	6 (3.0%)	2 (1.6%)	
	Agree	56 (28.0%)	28 (21.9%)	
	Strongly Agree	130 (65.0%)	84 (65.6%)	
	Strongly Disagree	7 (3.5%)	20 (15.6%)	
Healthcare workers must acknowledge themselves with all the information about covid-19	Disagree	2 (1.0%)	1 (0.8%)	*0.001
	Neutral	2 (1.0%)	1 (0.8%)	
	Agree	24 (12.0%)	6 (4.7%)	
	Strongly Agree	165 (82.5%)	100 (78.1%)	
	Strongly Disagree	11 (5.5%)	19 (14.8%)	
Gowns, gloves, mask and goggles must be used when dealing with covid-19 patients	Disagree	0 (0.0%)	1 (0.8%)	*0.010
	Neutral	4 (2.0%)	0 (0.0%)	
	Agree	8 (4.0%)	2 (1.6%)	
	Strongly Agree	177 (88.5%)	106 (82.8%)	
	Yes	193 (96.5%)	122 (95.3%)	
Use soap and water to wash my hands continuously	No	4 (2.0%)	3 (2.3%)	0.836
	Sometimes	3 (1.5%)	3 (2.3%)	
	Yes	195 (97.5%)	120 (93.8%)	

Cover my nose and mouth with a tissue during sneezing or coughing	No	2 (1.0%)	2 (1.6%)	0.201
	Sometimes	3 (1.5%)	6 (4.7%)	
	Yes	191 (95.5%)	124 (96.9%)	
Throw the used tissue in the trash	No	7 (3.5%)	2 (1.6%)	0.526
	Sometimes	2 (1.0%)	2 (1.6%)	
	Yes	196 (98.0%)	120 (93.8%)	
Avoid touching my eyes, nose or mouth as far as I can	No	0 (0.0%)	1 (0.8%)	0.105
	Sometimes	4 (2.0%)	7 (5.5%)	
	Yes	190 (95.0%)	121 (94.5%)	
Use face mask in crowds	No	4 (2.0%)	2 (1.6%)	0.872
	Sometimes	6 (3.0%)	5 (3.9%)	
	Yes	197 (98.5%)	128 (100.0%)	
Carefully handle suspected patient's belongings	No	2 (1.0%)	0 (0.0%)	0.380
	Sometimes	1 (0.5%)	0 (0.0%)	
	Yes	192 (96.0%)	119 (93.0%)	
Keep on healthy eating and health styles	No	2 (1.0%)	2 (1.6%)	0.478
	Sometimes	6 (3.0%)	7 (5.5%)	
	Yes	196 (98.0%)	118 (92.2%)	
Do you educate your patients about the disease	No	2 (1.0%)	2 (1.6%)	*0.023
	Sometimes	2 (1.0%)	8 (6.3%)	
	Yes	190 (95.0%)	121 (94.5%)	

Do you think by strictly following the Covid-19 protocol we can manage the new waves of Covid-19 caused by new variants of the virus?	No	4 (2.0%)	2 (1.6%)	0.872
	I don't know	6 (3.0%)	5 (3.9%)	

Table 1: Impact and Association between primary and secondary healthcare worker knowledge, attitude and practice towards COVID19 outbreak.

Discussion

With the recent experience of MERS-CoV Kingdom of Saudi Arabia was better prepared to handle this Covid-19 pandemic [5,6]. Ministry of health had required infrastructure such as separate isolation wards, specialized Respiratory Disease Departments, dedicated ICU beds for these respiratory diseases [7]. Along with the ground infrastructure Saudi Arabia had started National Digital Transformation "Digital Saudi Arabia" in 2019 [8,9]. Ministry of health launched various digital platforms such as Sehha App [10], Mawid E-services [11], Wasfaty [12], Tatmman app [13], Sehhaty app, Tawakkalna app, Tatmman Smart bracelet [14], official Twitter handles of Ministry of health [15], daily news briefing on national news channels. Through these digital platforms Ministry of health did aggressive campaign of educating the population and avoiding rumors [16]. Providing online consultation through Sehhaty and Tatmman apps and providing online prescriptions through wasfaty app helped in reducing the unnecessary burden on hospitals [17,18].

In our study we found that ministry of health employees in Hafar al Batin were well informed about Covid -19 protocols. Despite having the difference in qualification levels and difference in years of experience, there was a negligible difference in knowledge of Covid-19. The level of alertness and preparedness was still the same as in the beginning of the pandemic. Due to these tremendous efforts Saudi Arabia successfully avoided subsequent waves of this pandemic as observed in other countries which lead to huge loss of human lives. Where as in Saudi Arabia has been observing less than 100 daily cases for last 5 months. Despite influx of people from all around the world.

Conclusion

Our study suggest that there is very little difference between the knowledge and compliance to the Covid-19 protocol among the Physicians and nurses working at primary or secondary health centers of Hafar al Batin also their level of alertness was same as the beginning of the pandemic. This along with other efforts by Ministry of Health using digital platforms has helped in successfully avoiding subsequent waves of pandemic as observed in other parts of the world.

References

1. World Health Organization (2020) Q&A on coronaviruses (COVID-19).
2. Wu Z, McGoogan JM (2020) Characteristics of and Important Lessons from the Coronavirus Disease 2019 (COVID-19) Outbreak in China: Summary of a Report of 72314 Cases from the Chinese Center for Disease Control and Prevention. JAMA 323: 1239-1242.
3. Hilton T (2020) Countries with coronavirus curfews: Saudi Arabia joins growing list. Al-Arabiya News.
4. Saudi Ministry of Health (2020) (Tetamman) Clinics at Healthcare Centers and Hospitals.
5. World Health Organization (2019) Middle East respiratory syndrome coronavirus (MERS-CoV).
6. Saeed AAB, Abedi GR, Alzahrani AG, Salameh I, Abdirizak F, et al. (2017) Surveillance and Testing for Middle East Respiratory Syndrome Coronavirus, Saudi Arabia, April 2015-February 2016. Emerg Infect Dis 23: 682-685.
7. World Health Organization Regional Office for Europe (2020) Past pandemics.
8. (2018) National Transformation Program Delivery Plan 2018-2020. Kingdom of Saudi Arabia Vision 2030.
9. Digital Saudi (2020) National Digital Transformation Annual Report 2019.
10. Sehha App. Apple App Store.
11. Saudi Ministry of Health (2020) (Mawid) service. E-Services.
12. https://wasfaty.sa
13. Saudi Ministry of Health (2020) MOH Launches New App (Tetamman) to Prevent COVID-19.
14. Saudi Ministry of Health (2020) MOH: (Tetamman) Smart Bracelet a must for Citizens Returning from Abroad.
15. Tabaud App (2020) Saudi Data and AI Authority.
16. Saudi News 24 (2020) The Ministry of Health denies WhatsApp's current message regarding Corona … and explains: No.
17. Telemedicine Regulations in the Kingdom of Saudi Arabia (2020) National Health Information Center (NHIC), part of the Saudi Health Council (SHC).
18. Saudi Ministry of Health Twitter Account.