Original Research Article

Elucidating Saudi Nurse Awareness of Following Protocol about the COVID 19 Pandemic

Amal Khalaf Al-anazi[*], Dr. Fatima Sultana

Department of Dentistry, Riyadh, Kingdom of Saudi Arabia

*Corresponding author: Amal Khalaf Al-anazi

Abstract

COVID-19, also known as Corona Virus disease, is one of the recent pandemics that has impacted healthcare systems worldwide. In scientific terms, COVID-19 is known as SARS-CoV-2, which is a virus. Hence, the disease is highly contagious and can spread from person to person through the body fluids of the person who was infected. In addition, the disease is far more contagious than most normal respiratory diseases. An outbreak of the disease originated in China, specifically in Wuhan, which caused a massive spread throughout the rest of the world. According to the Saudi Arabian Health Ministry, the first case was reported in early March, 2020. The main goal of this study is to determine the extent to which the Saudi Arabian nurses are knowledgeable of the COVID-19 protocols and also the attitudes of Saudi Arabian nurses in their line of duty while also reinforcing the COVID-19 protocols. According to the study, the data for the current study were subjective and only based on Saudi nurses. Using e-mail, questionnaires were distributed and responses directed through the same platform. To avoid bias, a sample of 105 Saudi Nurses working in different healthcare facilities was selected by simple random sampling. Out of the Saudi nurses who were considered for the current study, a reasonable number were aware of the protocols of COVID 19.
Keyword: Saudi Nurse, Corona Virus, Covid-19, SARS CoV-2, protocol.

INTRODUCTION

Corona Virus disease widely known as COVID-19 is one of the recent pandemic that has raised concern for the healthcare systems globally. COVID-19 is scientifically known as SARS-CoV-2 and is viral in nature. This implies that the disease is highly contagious and thus can spread from an individual who comes into contact with an infected person especially through body fluids (Keshavarzi, 2020). At the same time this disease is more contagious than other normal diseases associated with the respiratory tract of human beings. The disease traces its outbreak from China, specifically Wuhan and resulted to a massive spread to other parts of the world. In Saudi Arabia, the first case was recorded in early March, year 2020. In a short span of time, many other parts of the world recorded large number of cases prior to the month of April. Globally the individual took an incubation period of 14 days to manifest itself.

Nevertheless, the symptoms of COVID-19 include coughing, high fever, feeling fatigued and a low count of the blood cells. The elderly people especially those diagnosed with diabetes and other cardiovascular diseases are more vulnerable groups, when it comes to COVID-19 pandemic. If diagnosed with COVID-19 this group can easily experience respiratory failure resulting to death. However, it is necessary to note that young adults and children have also contracted the disease as reported by the World Health Organization (Keshavarzi, 2020). In this perspective, multidisciplinary collaboration of healthcare systems globally reacted towards minimizing the spread of the disease. A set of protocols were developed to ensure that one's exposure to an infected person minimize the chances of getting the disease (Qutob & Awartani, 2020). Such protocols included quarantine, maintaining a social distance and isolation that were emphasized in all countries.

The world health organization (WHO) has recently adopted measures to ensure that nurses are familiar with the cause effect and how the protocols introduced aid in controlling the viral disease. This study focusses on examining and explaining how nurses in Saudi Arabia are aware of following the stipulated guidelines concerning the COVID-19 pandemic. The implication here is that the knowledge and attitudes

towards the pandemic will be investigated and appropriate conclusions will be drawn.

Objectives of the Current Study
Despite the outbreak of COVID-19 and introduction of the protocols seeking to minimize its spread, nurses and the larger Saudi population seemed to have no interest. This negligence caused confirmation of large number of COVID -19 cases in Saudi Arabia. Besides, this situation was evident in many other countries where awareness was minimal resulting to a corresponding large volume of people being diagnosed with COVID-19. As such, assessing the level of awareness on the importance of the protocols is equally important. The current study had a number of objectives to justify the thesis statement.

General Objectives
The current study incorporated the following general objectives.
1. To identify the demographics of the participants (Saudi Arabia Nurses) for the selected facilities.
2. To identify the extent to which the nurses perceived the protocols introduced by the WHO (Alonazi, 2020).
3. To identify the ways in which the nurses intervened in controlling COVID-19

Specific Objectives
The following were the specific objectives of the current study.
1. To determine the extent to which the Saudi Arabian nurses are knowledgeable of the COVID-19 protocols.
2. To determine the attitudes of Saudi Arabian nurses in their line of duty while also reinforcing the COVID-19 protocols.
3. To determine the extent to which the COVID-19 protocols are significant in controlling the spread of COVID-19.

LITERATURE REVIEW
The Occurrence and Spread of Coronavirus
Corona virus is an emerging trend concerned with both humans and animals pathogens. These viruses are associated with serious economic burdens and threats to the public healthcare sector. In general the corona viruses are associated with the alveoli of the respiratory system, which is the basic unit of breathing tissues and organs. This virus mostly affects human respiratory system resulting to pneumonia, which if turns severe can result to death. The SARS virus can be traced in the early 2000's where scientists were not knowledgeable of the existence of the respiratory complication (Ashraf & Sajed, 2020). In the early 2000's an acute respiratory disease was reported in China and was transmitted from bats to humans. The SARS virus associated with the respiratory disorder caused approximately 750 deaths out of the 7000 reported cases. Besides, another outbreak of the respiratory related disease was reported in Saudi Arabia in the year 2010 where massive deaths occurred in Saudi healthcare facilities. The number of cases rose close to 3000 and later spread to the neighbouring countries causing tension. To add to this, nurses were not familiar with the best measures to undertake, given this virus was strange. As a result the intervention of the WHO was sought thus Saudi has to adopt prevention measures recommended.

Response of Saudi to COVID-19
The current spread of COVID 19 poses a challenge for all countries especially where the protocols emphasized by WHO are neglected. Given that stopping the spread of the disease is becoming extremely hard, awareness and emphasis of recommended protocols aimed at minimizing its spread are necessary. Saudi Arabia is largest Arabic residence with only a small percentage of other ethnic minorities who are not Saudis. The population of those below 14 years in Saudi is approximated as 35.2% while those aged 25 to 37 are 31% of the total population. In addition, the remaining percentage includes those above 38 years. Also, according to the World Health Organization (2015), Saudi provides free health services to the public. Nonetheless, the country is focussed to ensure that it meets the dire need for health care services. During the COVID 19, Saudi experienced the worst impact given that the Muslims regularly hold large gatherings. Additionally, Muslim association from other parts of the world gather in Saudi as their tradition. A good example of such Muslim gatherings is the Umrah/Haj. On the other hand, pilgrims and business people visiting Saudi posed a threat to the spread of Covid 19. Also, Saudi is a major travelling destination for many countries especially China, thus making it a possible hotspot for corona virus.

Furthermore, Saudi was in the frontline to adopt the measures of minimizing the spread of COVID 19. In fact these measures were introduced immediately with the first case reported in early march (Almalki, 2020). In addition, Saudi Arabia surrendered funds amounting to approximately 9 million US dollars to the Centre for Disease Control (CDC) to aid in fighting the pandemic. On the other hand, the sum of money was to facilitate awareness and catering for the medical practitioners like nurses who would handle and deal with any cases of COVID -19. Nevertheless, the closing of borders and setting up of protocols were reinforced to ensure that the contagious viral infection was controlled.

RESEARCH METHODOLOGY OF THE STUDY
The methodology chapter is usually aimed at addressing a given research question. This study incorporated both a Quantitive and qualitative approach. Besides to investigate and explain Saudi nurse awareness towards following COVID 19

protocols, the current study adopted an empirical and literature analysis. Online databases were searched to explore obtain literature and information pertaining the extent to which the occurrence of COVID-19 and how the protocols were perceived (Thobaity, Plummer, Innes, & Copnell, 2015). On the other hand, the validity and reliability of the study are explored in the current chapter to determine whether the results obtained are significant.

RESEARCH DESIGN

The research design is a logical strategy employed to investigate a given phenomenon. The research design allows a researcher to enhance a deeper understanding of the chosen topic. The current study adopted a case study of Saudi Nurses following the awareness of the protocols after the outbreak of COVID-19 pandemic (Ashraf & Sajed, 2020). The reason for the motivation of the case study approach was the knowledge and need to narrow down to ease understanding of the existing trends following the emphasis of COVID-19 protocols. Besides, this approach was the most appropriate because it aided the researcher to meet the desired objectives.

Research Questions

Any given research seeks to find answers to a chosen phenomenon (Qutob & Awartani, 2020). The current study incorporated several research questions. The following were the research questions for the current study.
1. What are the attitudes of Saudi nurses with respect to the COVID-19 protocols?
2. To what extent have the Saudi nurses perceived and emphasized COVID-19 rules?
3. What are some of the ways that nurses are working on to minimize the spread of COVID-19 ?
4. What is the proportion of nurses who are fully conversant with COVID-19 protocols?

These entire research hypotheses were used to formulate the hypothesis for the current study. As a result, carrying out statistical analysis and drawing relevant conclusion was much easier.

DATA COLLECTION AND SAMPLE SIZE

Data for the current study was subjective and focussed on Saudi nurses only. Questionnaires were dispatched through emails and responses channelled via the same platform. A sample of 105 Saudi Nurses working in different facilities were selected using simple random sampling to avoid bias. Also, the selection criteria was such that every participant had an equal chance of being selected. Nonetheless, the questionnaires were brief and exact to ease the data collection process. Besides, a review of literature of articles based on COVID 19 were searched to further aid in the investigation of the phenomenon.

DATA ANALYSIS
Reliability and Validity test

Validity and reliability test

Before carrying out any analysis a validity test was appropriate. The Cronbach test was the most appropriate to test for validity. On the other hand, the researcher ensured that the data was cleaned before carrying out the analysis. The universal acceptable value of Cronbach is 0.7. Values closer or greater than 7 show that the data is reliable. The Cronbach's test results are revealed as below.

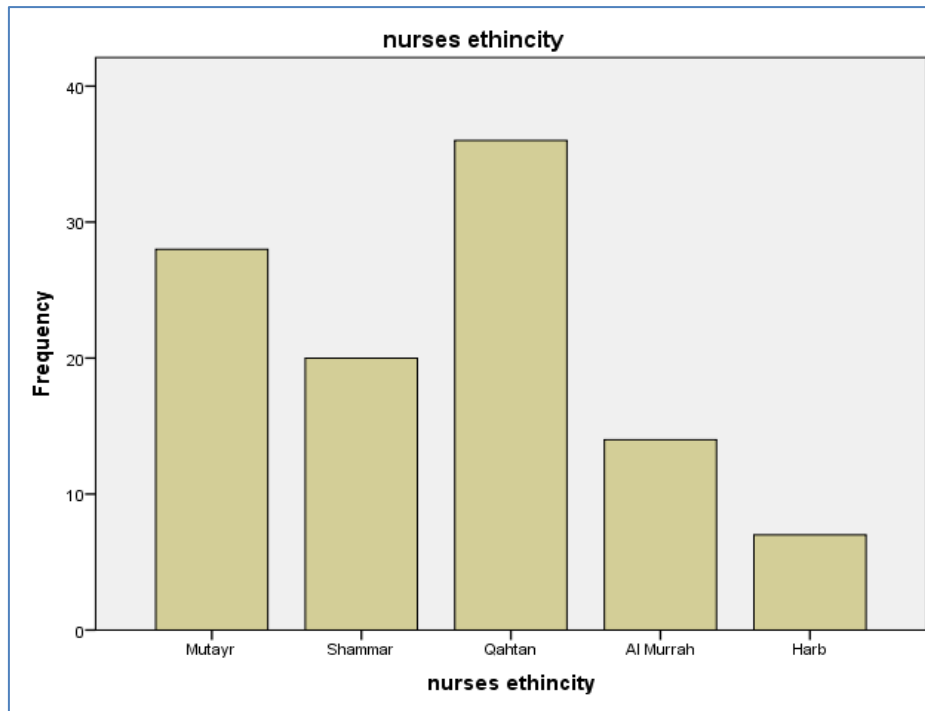| Reliability Statistics	
Cronbach's Alpha	N of Items
.682	2

Clearly, the value of Cronbach was 0.682 which is close to 0.7 and therefore we could proceed with the analysis.

Qualitative Analysis

Descriptive Statistics

Demographics of the Participants

Nurses ethincity					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Mutayr	28	26.4	26.7	26.7
	Shammar	20	18.9	19.0	45.7
	Qahtan	36	34.0	34.3	80.0
	Al Murrah	14	13.2	13.3	93.3
	Harb	7	6.6	6.7	100.0
	Total	105	99.1	100.0	
Missing	System	1	.9		
Total		106	100.0		

The table above shows the proportion of nurses from different subtribes in Saudi Arabia. The most frequent was Qahtan with a frequency of 36 which is 34.0%. The lowest frequency was that of Harb with 7 participants (6.6%).

The bar graph above shows the graphical representation of the chosen saudi nurse ethnicities.

What is your highest education level?					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	diploma	38	35.8	36.2	36.2
	degree	23	21.7	21.9	58.1
	masters	20	18.9	19.0	77.1
	PhD	19	17.9	18.1	95.2
	Total	105	99.1	100.0	
Missing	System	1	.9		
Total		106	100.0		

From the table, the highest frequency was that of nurses who held a diploma (38) while the lowest was of those who were planning to undertake PhD (19).
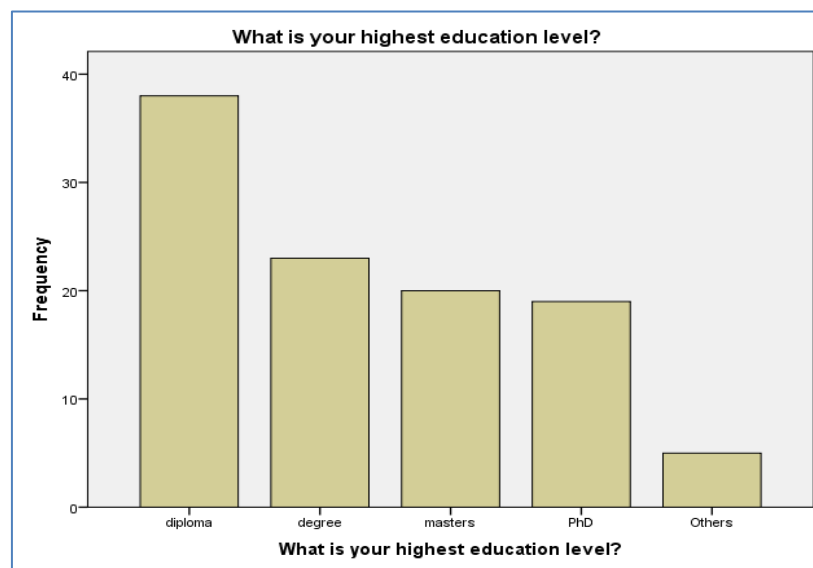
The figure shows the distribution of education achievements for the chosen sample.

Are you aware of the COVID 19 protocols?		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	81	76.4	77.1	77.1
	no	24	22.6	22.9	100.0
	Total	105	99.1	100.0	
Missing	System	1	.9		
Total		106	100.0		

81 nurses were fully aware of the protocols while 24 were unfamiliar with the effectiveness of the rules. Most of those unfamiliar were junior nurses from the Saudi facilities but were being supported by experienced nurses. The pie chart below shows the distribution of this aspect.
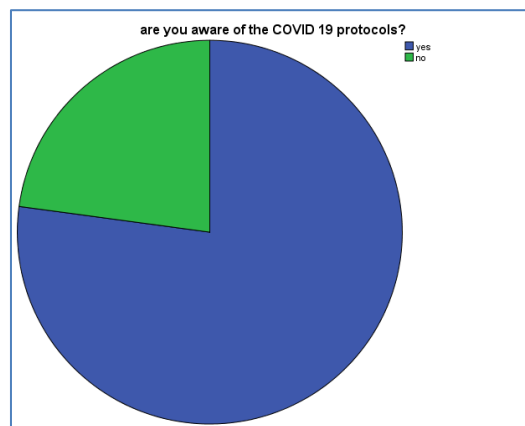
to what extent do you believe that the protocols can aid in minimizing the spread of COVID 19		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	45	42.5	42.9	42.9
	strongly disagree	13	12.3	12.4	55.2
	agree	47	44.3	44.8	100.0
	Total	105	99.1	100.0	
Missing	System	1	.9		
Total		106	100.0		

45 nurses strongly agreed to the fact that the set protocols played a vital role in controlling the spread of the disease. For those who strongly disagreed, the fact was that the participants were junior nurses and were not sure while recording their responses, this was an outlier but the model took care of that.
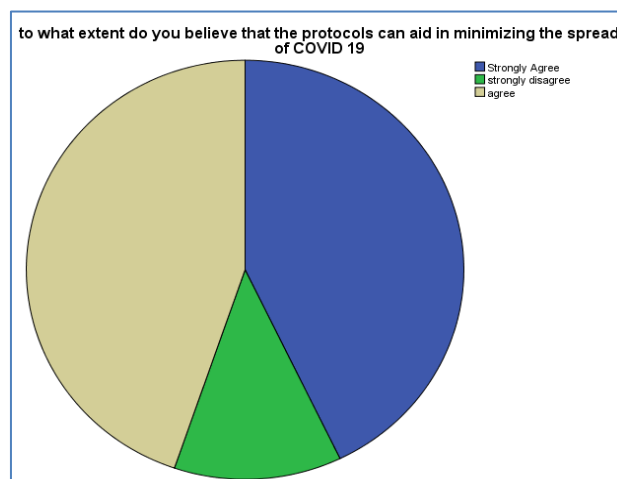
Quantitative Analysis

Hypothesis Testing

To test the hypothesized research questions ANOVA (Analysis of Variance) and regression analysis

were carried out. The dependent variable in this case was awareness of the protocols while the independent were demographics, and the extent to which the protocols were understood. The following were the results.

ANOVA^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.096	6	.183	1.028	.0032^b
	Residual	17.418	98	.178		
	Total	18.514	104			
a. Dependent Variable: are you aware of the COVID 19 protocols?						
b. Predictors: (Constant), to what extent do you believe that the protocols can aid in minimizing the spread of COVID 19, nurses ethincity, To what extent do you agree with the fact that COVID-19 is a pandemic?, nurses gender, What is your highest education level?, what are the protocols that you observe most in your facility?						

Regression Summary Table

Coefficients^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.243	.290		4.291	.000
	nurses ethincity	.065	.036	.187	1.818	.002
	nurses gender	-.085	.120	-.074	-.707	.041
	What is your highest education level?	-.019	.035	-.058	-.546	.016
	To what extent do you agree with the fact that COVID-19 is a pandemic?	.044	.063	.077	.707	.018
	What are the protocols that you observe most in your facility?	.002	.046	.004	.037	.001
	to what extent do you believe that the protocols can aid in minimizing the spread of COVID 19	-.026	.046	-.057	-.559	.007
a. Dependent Variable: are you aware of the COVID 19 protocols?						

Hypothesis 1

Ho: there is no significant relationship between knowledge on COVID 19 protocols and number of cases reported.

Ha: there is a significant relationship between knowledge on COVID 19 protocols and number of cases reported. From the results, the p value was 0.007 which was far much smaller than 0.05 the alpha value chosen for the current study. Thus we rejected the null hypothesis and conclude that knowledge in the protocols controlled the number of COVID 19 cases reported in Saudi. As such we can infer that Saudi Nurses from the chosen facilities seem to have advanced knowledge in COVID 19 protocols. Therefore, they are in the frontline to emphasize that the public should observe them strictly.

Hypothesis 2

Ho: there is no significant relationship between the attitudes of the nurses, their awareness and their corresponding education levels.

Ha: there is a significant relationship between the attitudes of the nurses, their awareness and their corresponding education levels.

From the results, the p value was found to be 0.016 which is smaller than 0.05 and thus we rejected the null hypothesis and concluded that those nurses who had higher education levels were more familiar with the protocols. Additionally, the experienced nurses played a role in enlightening junior nurses on the protocols.

From the summary table the regression equation is $y = 1.243 + 0.65x_1 - 0.085x_2 - 0.19x_3 + 0.44x_4 + 0.02x_5 - 0.026x_6$

Analysis of Nurses Attitudes

Several themes were clear from the COVID 19 articles obtained from medline database search engines. First, Saudi nurses were found to have positive attitude towards their profession. As such, most of the nurses perceived the COVID 19 pandemic with weight. In this perspective, they were strict in observing the stipulated protocols to minimize the spread of the disease (Temsah *et al.*, 2020). For example, they emphasized isolation

and social distancing. Secondly, the nurses were professionals and ensured that the juniors were enlightened on the importance of the protocols. This further ensured that they were equipped to minimize the spread of the disease in the larger Saudi Arabia.

CONCLUSION

The aim of the current study was to explore and explain the extent to which the Saudi Arabian nurses are knowledgeable of the COVID-19 protocols. The results revealed that out of the Saudi Nurses considered in the current study, a reasonable number were aware of the protocols of COVID 19. Besides, the analysis of online literature revealed that most of these nurses had positive attitude in their profession. As such, they emphasized the protocols stipulated by the world health organization to minimize the spread of COVID 19. Additionally, the education levels further enhanced the understanding of the importance of following the protocols. Nurses who had high education levels seemed to familiarize and know the effectiveness of these set of protocols. The implication here is that Saudi Arabia had a good opportunity to control the spread of the disease because the protocols were followed with the support of other health organizations. On the other hand, awareness is also one of the best approaches to control the spread of a pandemic. Therefore, the government and medical nurses should always act as a multidisciplinary team to ensure that the outbreak of a pandemic be controlled effectively. Policy makers are also required to adopt policies that ensure that medical nurses and officers are knowledgeable of protocols set to control a given situation.

REFERENCES

- Aleanizy, F. S., & Alqahtani, F. Y. (2020). Saudi Healthcare Facilities Risk Management and Infection Control Preparedness to Overcome Covid-19 Pandemic. doi:10.21203/rs.3.rs-59561/v1
- Almalki, M. J. (2020). Knowledge, attitudes and practices towards COVID-19 in Saudi Arabia: Planning implications for public health pandemics. doi:10.21203/rs.3.rs-67654/v1
- Alonazi, W. B. (2020). The Impact of Emotional Intelligence on Job Performance during COVID-19 Crisis: A Cross-Sectional Analysis. *Psychology Research and Behavior Management, Volume 13*, 749-757. doi:10.2147/prbm.s263656
- Keshavarzi, A. (2020). Coronavirus Infectious Disease (COVID-19) Modeling: Evidence of Geographical Signals. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3568425
- Qutob, N., & Awartani, F. (2020). Knowledge, attitudes and practices (KAP) towards Covid-19 among Palestinians during the Covid-19 outbreak: A cross sectional survey. doi:10.1101/2020.08.12.20170852
- Temsah, M. H., Alhuzaimi, A. N., Alamro, N., Alrabiaah, A., Al-Sohime, F., Alhasan, K., . . . Al-Zamil, F. (2020). Knowledge, attitudes and practices of healthcare workers during the early COVID-19 pandemic in a main, academic tertiary care centre in Saudi Arabia. *Epidemiology and Infection, 148*. doi:10.1017/s0950268820001958
- Thobaity, A. A., Plummer, V., Innes, K., & Copnell, B. (2015). Perceptions of knowledge of disaster management among military and civilian nurses in Saudi Arabia. *Australasian Emergency Nursing Journal, 18*(3), 156-164. doi:10.1016/j.aenj.2015.03.001