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Research Article

### PUBLIC KNOWLEDGE AND ATTITUDES TOWARDS COVID-19: A CROSS-SECTIONAL STUDY IN AL- AHSA

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**Abstract:**

*Coronavirus disease 2019 (COVID-19) developed from a novel coronavirus classified as Extreme Acute Coronavirus Respiratory Syndrome 2 (SARS-CoV-2), It's a respiratory infection, its symptoms range from common cold like to pneumonia; it can be fatal when it is complicated by acute respiratory distress syndrome. Outbreak was started from the Hunan seafood market in China's Wuhan city. The virus spread globally by affecting 8 million with at least 433,490 deaths. By understanding the mechanism of COVID19 transmission mood WHO advised the public to have some precautions that includes regularly and thoroughly washing hands with soap and water or with alcohol based hand rub, maintaining social distance for at least 1 meter between anyone and covering the mouth and nose when coughing or sneezing.*

*Materials and Methods: A cross-sectional descriptive questionnaire study was carried out in AlAhsa region in the kingdom of Saudi Arabia. The estimated sample size is calculated by a sample size formula. The study sample was obtained through a self-administered online questionnaire to provide a comprehensive view on the impact of level of home isolation and the people emotions during the COVID 19 pandemic.*

*Results: The questionnaire was distributed online through social media. (1121) responses were received and analyzed. Our study identified a prevalence of 974 (86.9%) participants who have heard about Covid-19. The majority of the participants' source of information about COVID-19 was from social media 825 (73.6%), while the least were having no information 125 (11.2%). And 427 (38.2%) the source of their information was from health practitioner/ Ministry of Health MOH.*

*Moreover, attitude and practice of the participants were assessed through several questions. Participants were asked if they committed to home insulation during the Corona pandemic, 955 (85.2%) answered yes. Also, participants were asked if they did visit crowded places recently, 35 (4.7%) answered yes, and 909 (81.1%) answered. 94.4% of our participants take precaution when they need to go out by wearing face mask, applying hand sanitizer and washing their hands. When asked how often you sterilize or wash your hand during the day, the highest percentage was more than five times 652 (58.2%).*

*In addition, 1024 (91.3%) said they maintain social distancing, 19 (1.7%) didn't maintain social distancing and 78 (7.0%) maintain it sometime. Participants also were asked about their feelings during the Corona pandemic, most of them felt anxious and stressed 407 (36.3%), while 364 felt (32.5%) reassured. The relationship between home quarantine and participants' emotions during the COVID 19 pandemic shows that there is a significant relationship with score (p value = 0.031).*

*Conclusion: This study found that most of the targeted population was knowledgeable about COVID-19 with a significant relationship between home quarantine and the participants' emotions during the COVID 19 pandemic.*

**Keywords:** COVID-19 (Corona Virus Disease 2019), knowledge and attitudes.

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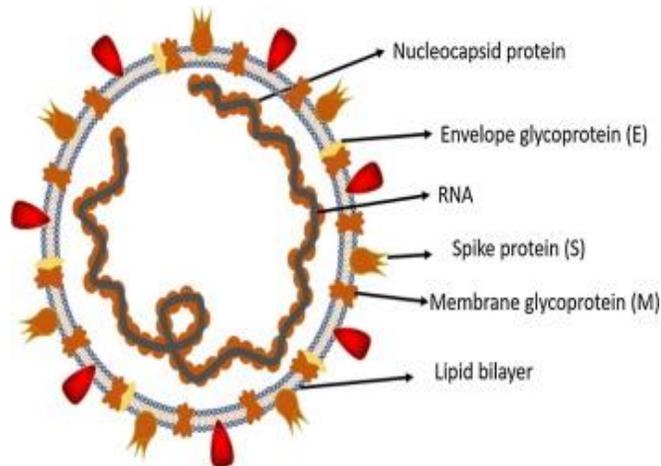


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**INTRODUCTION:**

Coronavirus disease 2019 (COVID-19) is considered as a disease that developed from a novel coronavirus, now classified as Extreme Acute Coronavirus Respiratory Syndrome 2 (SARS-CoV-2; previously Named nCoV 2019) [1]. COVID-19 is an emerging respiratory infection first discovered in Wuhan City, Hubei Province China, in December 2019. The outbreak was started from the Hunan seafood market in China's Wuhan city and rapidly affected over 50 peoples. Live animals such as bats, frogs, snakes,

birds, marmots and rabbits are frequently sold at the Hunan seafood market [1,2]. Since then, it has been spread to more than 200 countries and has been declared a global pandemic by world health organization (WHO) [1]. SARS-CoV-2 belongs to the wider family of ribonucleic acid (RNA) viruses, contributing to infections such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV). COVID-19's main symptoms were found to be fever, dry cough, exhaustion, myalgia, and dyspnea [1].



COVID-19 is characterized by a rapid transmission, and it can occur through close contact with an infected person, for instance by being exposed to Coughing, sneezing, breathable droplets or aerosols [1, 4].

In a way to protect the public from spreading COVID-19, WHO advised to have some precautions that includes regularly and thoroughly cleaning hands with an alcohol-based hand rub or washing them with soap and water. Also, maintain social distance for at least 1 meter between anyone, which could make enough space to prevent droplet reaching to the other person that transmitted by sneezing coughing or speaking itself. WHO also recommends to avoid

crowded places, covering nose and mouth by masks, self-isolation when feeling sick or when having symptoms like cough and sneeze [5].

Noteworthy, for passengers going to the regions affected by 2019-nCoV, Ministry of Health (MOH) has released guidance documents. The Ministry, as part of those guidelines, discouraged contact with animals (alive or dead), animal products, going to animal markets, or contact with people with respiratory symptoms.

MOH has called on anyone who has respiratory symptoms to stay at home, avoid contact with others, and refrain from traveling as long as symptoms

remain, as well as to cover the mouth and nose with napkins when coughing or sneezing. It also recommended washing the hands for at least 20 seconds with water and soap, or with disinfectants for alcohol [6].

Globally, it is recorded 8,044,839 as infected cases of COVID-19. Total recoveries are 89540 cases. Total Motility are 437,266 cases. Locally in Saudi Arabia till 16 June, 2020 it is recorded as 136,316 as total cases, 89,540 as total recoveries, and 1,052 as total mortality. It is also recorded that 45,723 as active cases, and 1,910 as critical cases [7, 8].

As long as the disease and quarantine is there, we assumed that there are effects upon public attitude and mental health. Therefore, this research is aimed to assess the knowledge and attitude of Alahsa community toward COVID-19. Understanding community's knowledge, attitudes, and practices (KAPs) and possible risk factors that helps to predict the outcomes of planned behavior.

There are a lot of research assessed the KAPs toward COVID 19. One of them was done in Saudi Arabia by Mohammed Al-Hanawi, the majority of study participants were very knowledgeable about COVID-19, females got scores higher than males [4]. Other research was done in Malaysia by Ariana Anis, 80% of Malaysian population have good knowledge about COVID-19 which has a good reflection their attitudes [3]. One of the most important research was done in China by Bao-Liang Zhong, most Chinese residents of a relatively high socioeconomic status, in particular women, are knowledgeable about COVID-19, hold optimistic attitudes, and have appropriate practices towards COVID-19 [2].

The country's authorities have applied necessary sanitary measures to prevent massive spread. It is imperative to know the knowledge, attitudes and practices of the population about COVID-19, for decision making [4].

## MATERIALS AND METHODS:

### Aim of the study:

The study was conducted in order to:

- 1- To assess the awareness and knowledge of Saudi population in Al Ahasa region toward COVID-19.
- 2- To provide a comprehensive view on public attitudes towards COVID-19 pandemic.
- 3- To provide a comprehensive view on the impact of level of home quarantine and the people emotions during the COVID-19 pandemic.

### Hypothesis:

There is a significant association between home quarantine and the people emotions during the COVID-19 pandemic.

### Study Design:

A cross-sectional descriptive questionnaire study.

### Study Population and Sampling Technique:

The study was carried out in Al-Ahsa region in the kingdom of Saudi Arabia. After reviewing the population size from Department of Statistics and Information: it was about (873326) Saudi people. We calculated the sample size [9]. With a margin of error of 5%, and a 90% confidence interval, the estimated required sample size was 271 participants.

### Inclusion Criteria:

The inclusion criteria was used for statistical analysis which include, All Saudi people aged between 15 and 60-year-old.

### Exclusion criteria:

- 1- participants from different region.
- 2- Non- Saudi citizen.

### Data Collection Tools:

For data collection and questionnaire, the method of Huang Y et.al, will be followed with some modifications [12]. The study sample obtained through a self-administered online questionnaire, that contains questions considering age group, education, background, monthly income and some general information about Covid-19 and questions regarding public attitudes. The survey was made using Google Forms, and the study was conducted during June 2020 with a sample size of 1121 participants.

### Data Collection Method:

The data were collected in Microsoft Excel Office 365 ProPlus. SPSS software (version 26) was used for the analysis and the differences were considered statistically significant at P value less than 0.05 using Chi-square test [12].

### Ethical considerations and Data management:

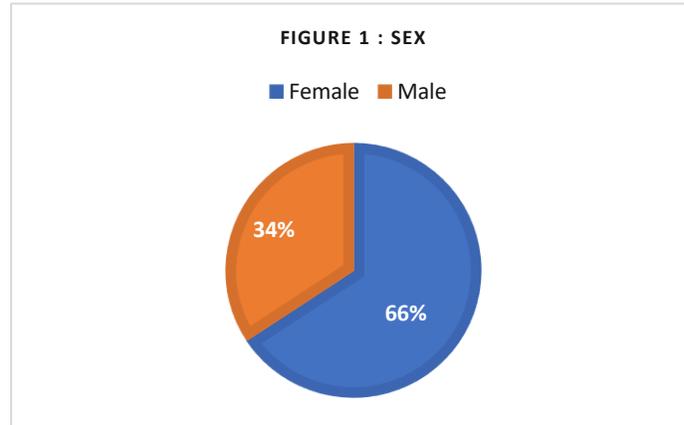
The study will be carried out after obtaining approval from King Faisal University, College of Medicine Ethics Committee. The research will keep the patients' confidentiality by not mentioning their names, instead they will be allotted by numbers. Participant privacy and confidentiality were assured, no identifiers were collected, and all data is kept in a

secure place within KFUPM premises both hard and soft copies.

### RESULTS:

The questionnaire was distributed online through social media. One thousand one hundred and twenty-one (1121) responses were received and analyzed.

This study identified a prevalence of 974 (86.9%) participants who heard about Covid-19. Of the 1121 participants who had voluntarily filled the questionnaire, 736 (65.7%) were females, and 385 (34.3%) were males. (Figure 1).



From these responses, 1% aged less than 15 years old and 9.3% were in age between 15-19 years old while 40.8% were in age between 20-30 years old. And those aged between 31-40 years old represents 23.2%, people aged between 41-50 years old represents 18.5%, and people aged between 51-60 years old represents 6.2% while those older than 60 years old were 1.2%.

The highest response from age group (20-30) accounting for 40.8%. While the lowest response accounting for 1.0% of age group (less than 15). (Figure 2, Table 1).

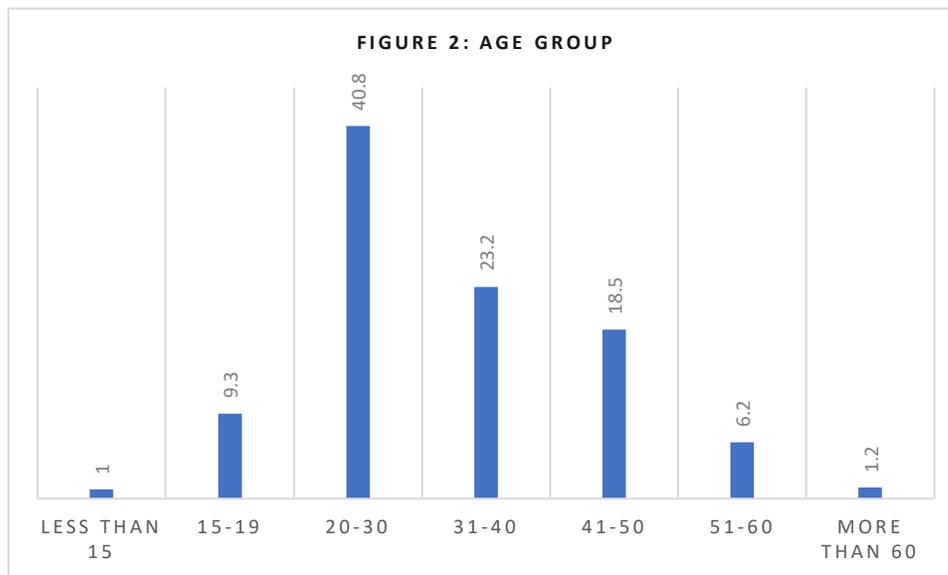
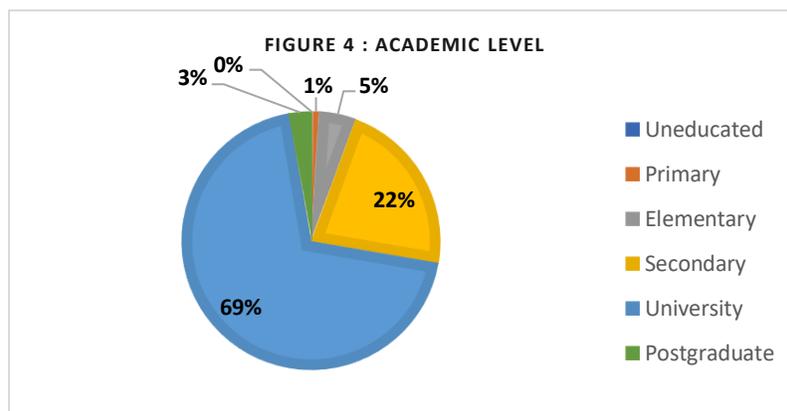
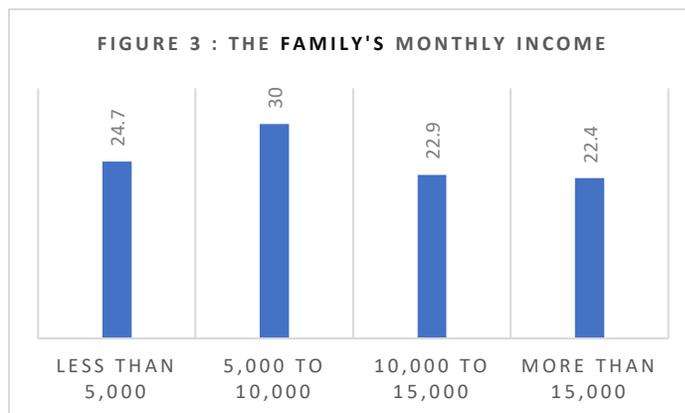
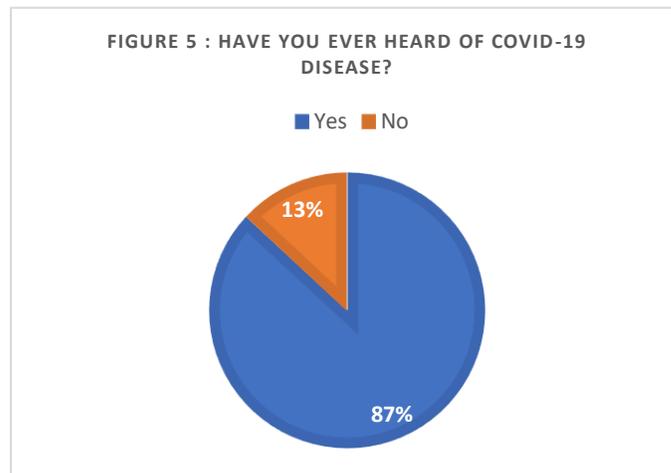


Table 1: age group		
	Frequency	Percent
Less than 15	11	1.0
15-19	104	9.3
20-30	457	40.8
31-40	260	23.2
41-50	207	18.5
51-60	69	6.2
More than 60	13	1.2

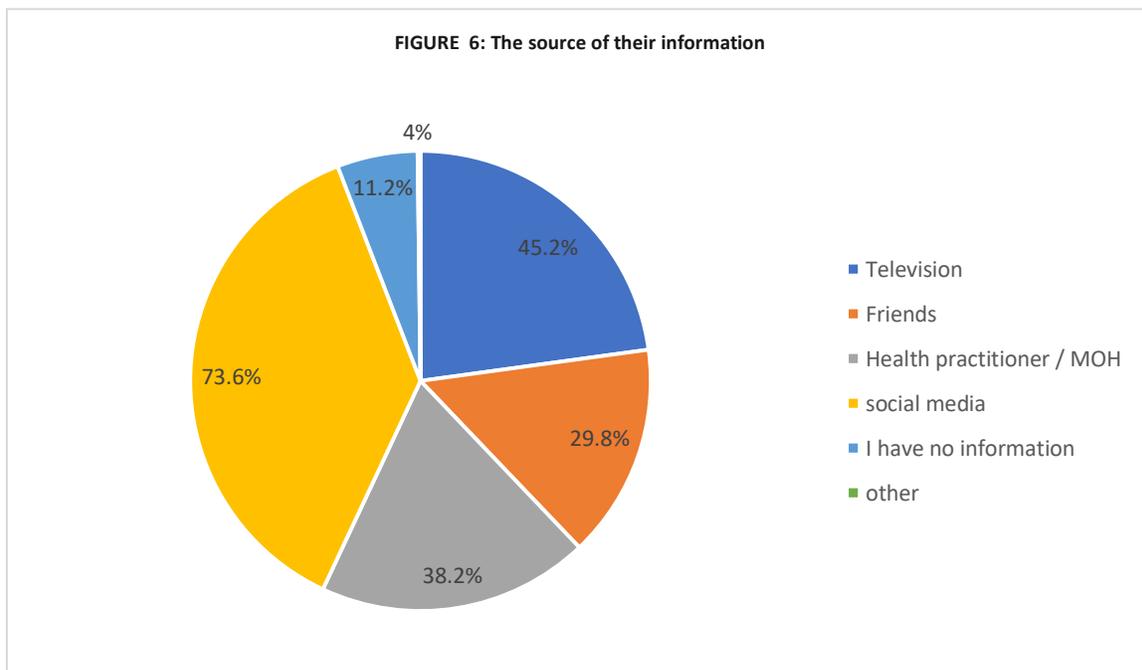
Among these population the family's monthly income were 24.7% less than 5000, 30% between 5000-10000, 22.9% between 10000-15000 while 22.4% of them were more than 15000. (Figure 3). In addition, the Academic level of the participants was analyzed, the uneducated participants were 2 (0.2%), primary 9 (0.8%), elementary 52 (4.6%), secondary 248 (22.1%), university 780 (69.6%), postgraduate 30 (2.7%). (Figure 4)



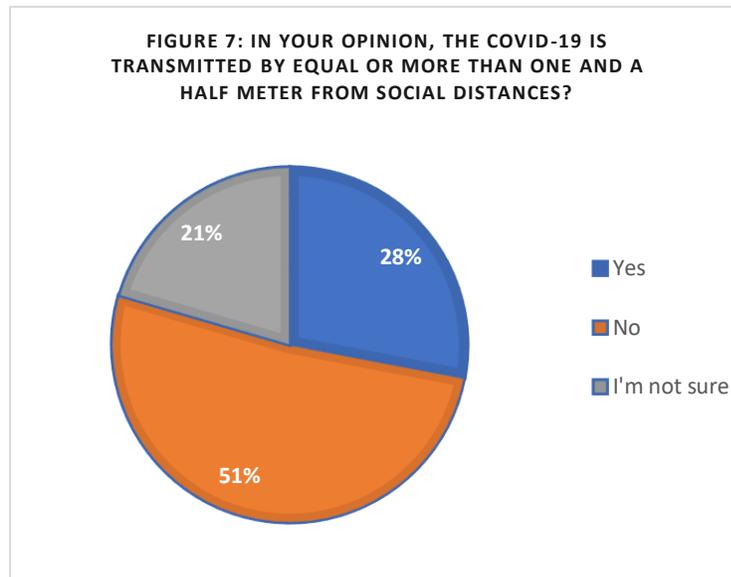
The knowledge of the participants was assessed, as shown on table 5, 974 (86.9%) heard about Covid-19 disease, while 147 (13.1%) didn't heard about it. (Figure 5)



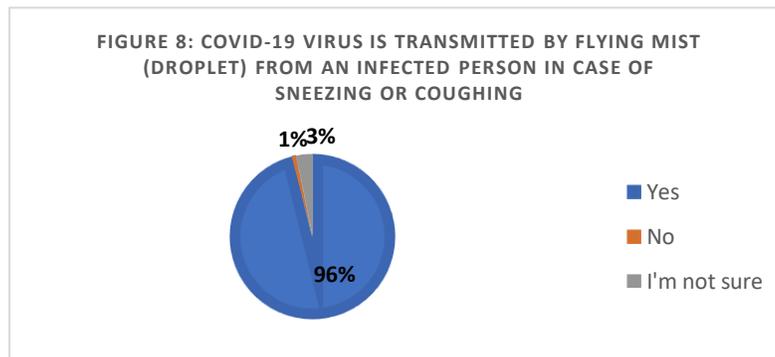
When asked about their source of their information about Covid-19 disease, the majority of the participants said it is from social media 825 (73.6%), while the least were having no information 125 (11.2%). Other sources like television 507 (45.2%), friends 334 (29.8%), and only 427 (38.2%) take it from health practitioner/ Ministry of Health MOH. (Figure 6).



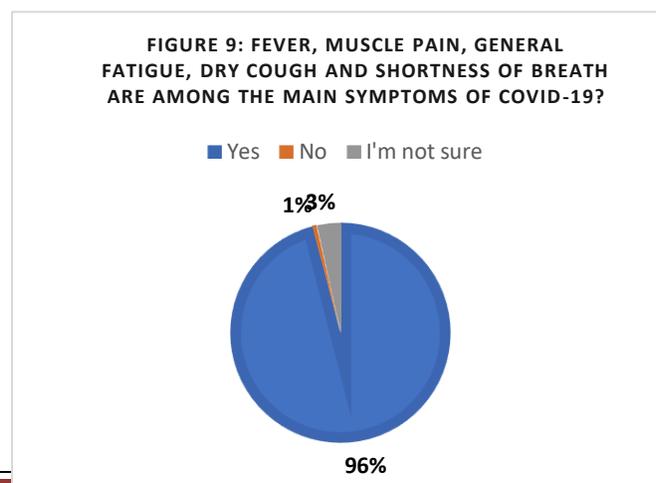
When asked about their knowledge if the Covid-19 is transmitted by equal or more than one and a half Meter from social distance, 314 (28.0%) answered yes, 577 (51.5%) answered no and 230 (20.5%) answered I'm not sure. (Figure 7).



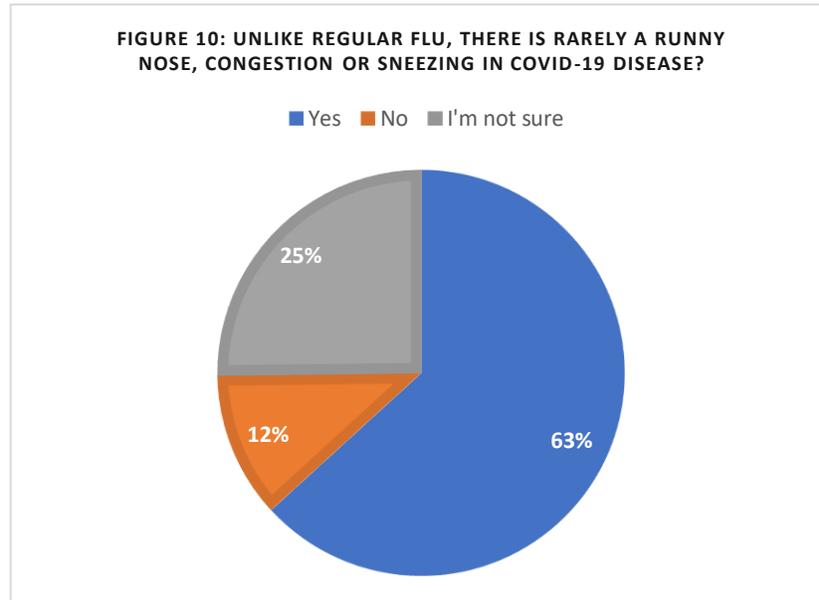
Other question was withered Covid-19 virus is transmitted by flying mist (droplet) from an infected person in case of sneezing or coughing, 1077 (96.1%) answered yes, 9 (0.8%) answered no and 35 (3.1%) answered I'm not sure. (Figure 8).



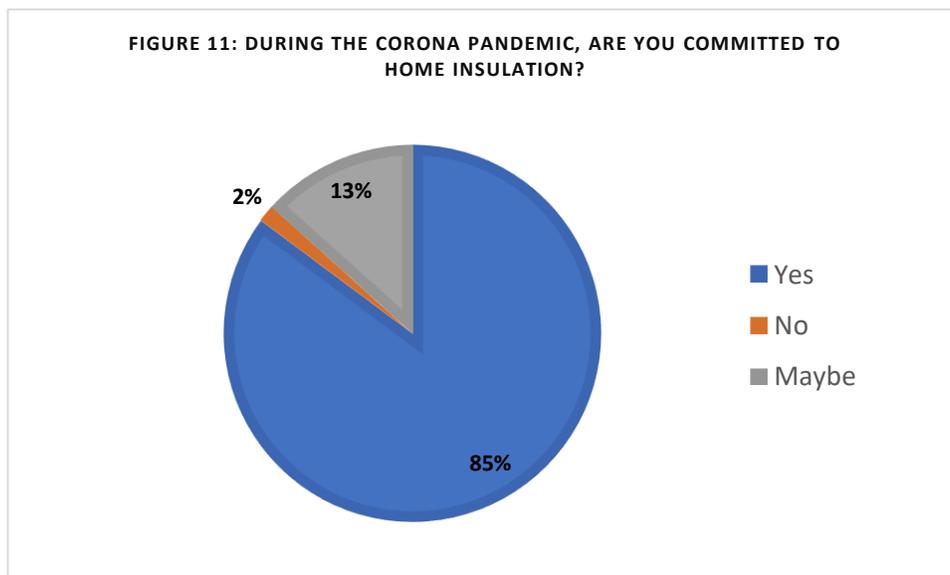
The participants were asked if the Fever, muscle pain, general fatigue, dry cough and shortness of breath are among the main symptoms of Covid-19, 1076 (96.0%) answered yes, 7 (0.6%) answered no and 38 (3.4%) answered I'm not sure. (Figure 9).



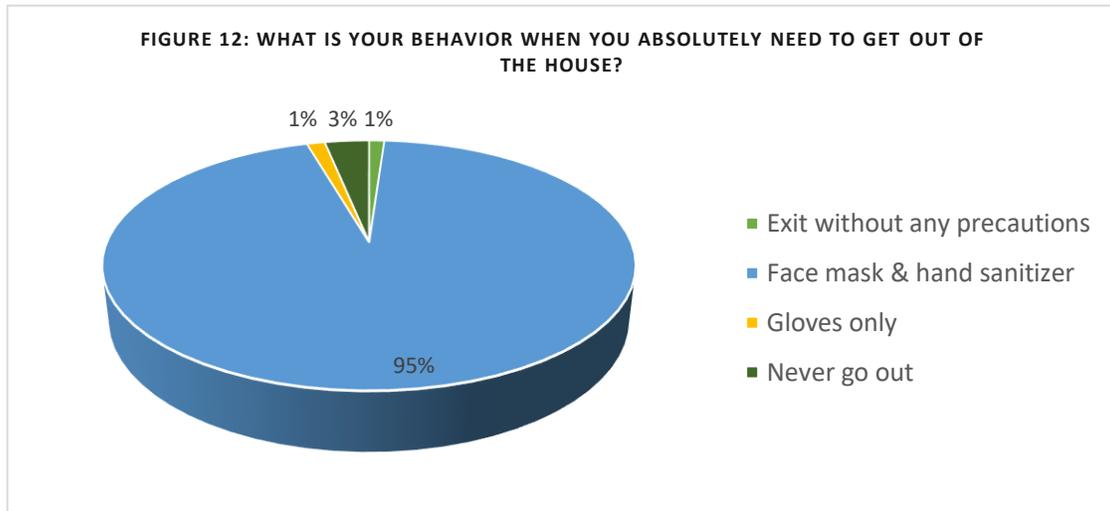
In addition, they were asked unlike regular flu, there is rarely a runny nose, congestion or sneezing in Covid-19 disease, 709 (63.2%) answered yes, 130 (11.6%) answered no and 282 (25.2%) answered I'm not sure. (Figure 10).



Moreover, attitude and practice of the participants was assessed through several questions. Participants were asked if they committed to home insulation during the Corona pandemic, 955 (85.2%) answered yes, 17 (1.5%) answered no and 149 (13.1%) answered I'm not sure. (Figure 11)

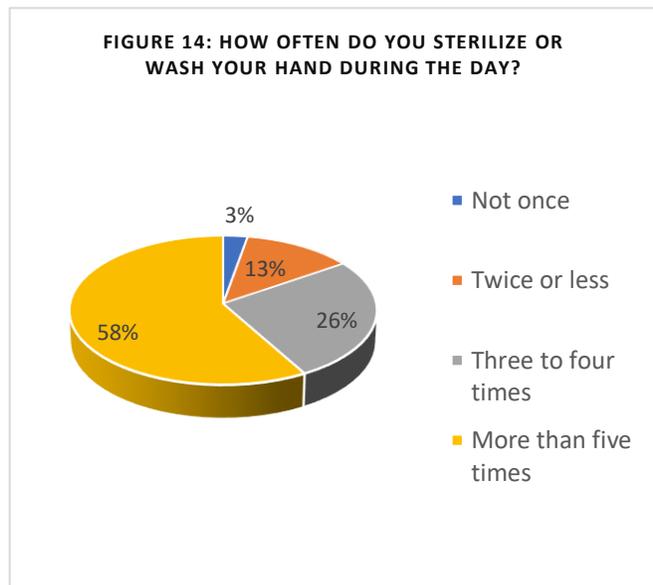
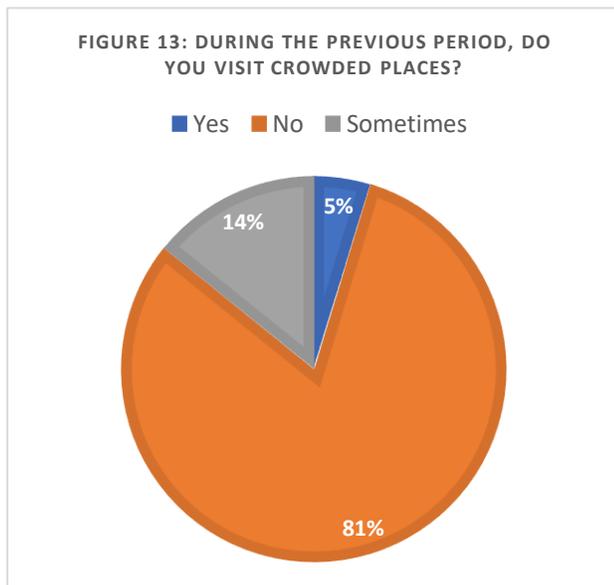


When they asked about their behavior when they absolutely need to get out of the house, 12 (1.1%) of the participants exit without any precautions, 1058 (94.4%) wear face mask & hand sanitizer, 15 (1.3%) use gloves only, while 36 (3.2%) Never go out. (Figure 12).



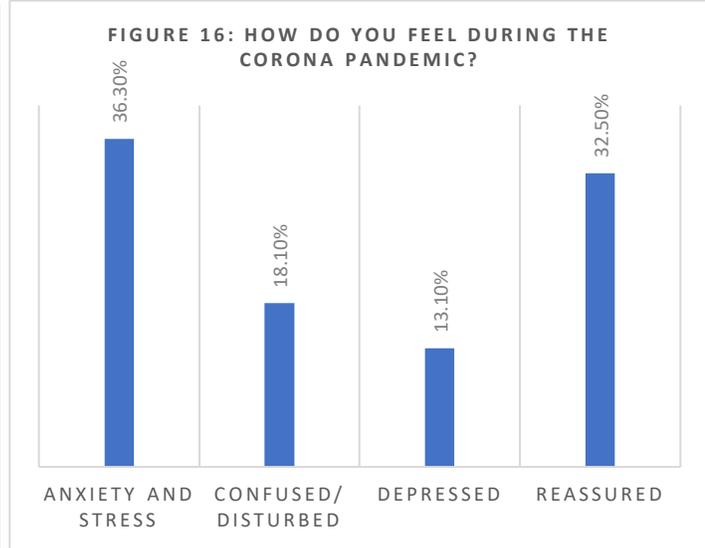
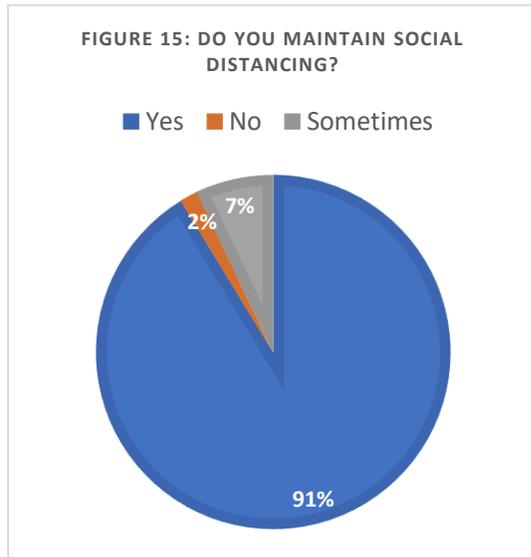
Also, participants were asked if they did visit crowded places recently, 35 (4.7%) answered yes, 909 (81.1%) answered no and 159 (14.2%) answered sometime. (Figure 13).

When asked how often you sterilize or wash your hand during the day, Not once 31 (2.8%), Twice or less 141 (12.6%), Three to four times 297 (26.5%), More than five times 652 (58.2%). (Figure 14).



In addition, 1024 (91.3%) said they maintain social distancing, 19 (1.7%) don't maintain it and 78 (7.0%) maintain it sometime. (Figure 15).

Participants also was asked about their feelings during the Corona pandemic, their response were feeling anxiety and stress 407 (36.3%), confused/ disturbed 203 (18.1%), depressed 147 (13.1%), reassured 364 (32.5%). (Figure 16).



The relationship between home quarantine and the people emotions during the COVID 19 pandemic was presented in (table 2). It shows that there is a significant relationship between home insulation and people feeling during the Corona pandemic score (p value = 0.031).

And most people committed to home isolation felt anxious and stressed 351, and only 318 felt reassured. While only 116 felt depressed.

		How do you feel during the Corona pandemic?				Total
		Anxiety and stress	confused/ disturbed	Depressed	Reassured	
During the Corona pandemic, are you committed to home insulation?	Maybe	54	31	27	37	149
	No	2	2	4	9	17
	Yes	351	170	116	318	955
Total		407	203	147	364	1121

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.908 <sup>a</sup>	6	.031
Likelihood Ratio	14.274	6	.027
N of Valid Cases	1121		

**DISCUSSION:**

The world public health is highly threatened by COVID-19. There is no vaccine yet, so the population knowledge, attitudes, and practices are the

key of survival. COVID-19 is classified as highly infectious disease. preventive measures should be taken to reduce the spread of the disease (4). Thus,

this study aimed to assess the knowledge and attitudes of the Al -Ahsa population, for COVID-19.

This study found that most of the targeted population were knowledgeable about COVID-19. Almost (86.9%) of the study participants heard about Covid-19 disease, while (13.1%) of the study participants didn't heard about it. Regarding the participants' knowledge about identifying the safe distance to avoid the transmitting of the disease, (51.5%) of them answered the correct answer, (28.0%) of them did not identify it, while (20.5%) were not sure. Coming to participants' knowledge regarding the symptoms of COVID 19, (96.0%) knew the exact symptoms of the disease, while (3.9%) of them did not have enough information about the symptoms. Actually, the finding of our research was not surprising as a result of distrusting the questioner throw the outbreak. In such time, many people gained the knowledge about the disease from television, news and media.

Our result was almost consistent with a cross sectional study which was conducted in KSA by Al-Hanawi, ET. Most of their study participants were knowledgeable about COVID-19 with a mean of 81.64% in the knowledge questionnaire. Most of the participants in their study (98%) were aware of the clinical symptoms of the disease (4). In addition, we have found almost the same result in a one study that was conducted in Malaysia by Azlan, ET. The average knowledge score of Malaysians regarding COVID-19 was moderate at  $10.5 \pm 1.4$  with an overall high correct rate of 80.5% (3) . Also, several studies were conducted in other Asian countries have shown high levels of COVID-19 knowledge among the public [10].

Public attitude towards COVID-19 pandemic was evaluated through several questions. We asked participants if they were staying home during the pandemic. Also, we asked about the precaution they're taking to protect themselves from getting infected, if they maintain social distances, and how many times they are washing their hands.

The participants in our study responded who committed to home insulation/ quarantine during the COVID-19 pandemic were 85.2% and 1.5% were not committed to home isolation.

94.4% of our participants take precaution when they need to go out by wearing face mask, applying hand sanitizer and washing their hands, 1.3% use gloves only, while 3.2% of them never go out during COVID-19 pandemic. 1.1% of the participants exit without taking any precautions. Regarding washing

hands, 58.2% of our participants wash their hands more than five times in the day, 26.5% wash their hand three to four times, 12.6% wash their hands twice or less and 2.8% only once.

Comparing to a study that conducted in India by Roy ET, 37 % of participants used a mask without the apparent signs and symptoms of the infection and more than 75 % use sanitizers and gloves. 85 % they frequently washed their hands [11].

In a study conducted in Malaysia by Azlan, ET, 83.4% of participants reported that they were avoiding crowded places and 16.6% did not avoid crowded places. In our study, 4.7% of the participants visited crowded places recently, 81.1% avoided crowded places [3].

In our study 91.3% maintained social distancing, and 7.0% maintained it sometimes.

COVID-19 has significantly resulted in a large number of mental health problems such as anxiety and depression. The study aims to investigate the relationship between home insulation and people feeling during the Corona pandemic.

The study presented the current prevalence of stress, anxiety, depression and confusion in general among home -isolating of population in Al-Ahsa city. Most of participants felt anxious and stressed 351, 116 felt depressed and 318 felt reassured.

WHO found that the new measures such as self-isolation and quarantine have influenced ordinary activities and routines that might cause increased loneliness, anxiety, depression, insomnia [5].

A study in China done by Huang Y et.al, 2020 Apr 14 showed a high prevalence of anxiety disorders and poor sleep in the Chinese population. Anxiety and depressive symptoms were more likely to occur in Chinese people who were younger than 35 years and healthcare workers. Nearly one in five participants in that study had depressive symptoms and sleep problems [12].

A recent survey by the Indian Psychiatric Society shows a 20% increase in mental illness since coronavirus outbreaks in India [1]. The results of our study weren't surprising as These results are consistent to previous studies as well, which found that public health emergencies (e.g., SARS) triggered a series of stress emotional response containing a higher level of anxiety and other negative feelings as what Li S et.al, May 2020 documented [3]. As well

as, the fact that there is no current vaccination or cure has a negative impact on people's emotions as well.

#### CONCLUSION AND RECOMMENDATIONS:

This study found that most of the targeted population were knowledgeable about COVID-19 with a significant relationship between home quarantine and the people emotions during the COVID 19 pandemic. Having high level of knowledge regarding COVID-19 among general population is very important in fighting the outbreak. Therefore, we encourage engaging the public in the control and prevention of the disease by conducting awareness programs by the government itself throw media to prevent misinformation and rumors which may lead to a negative impact.

We recommend that more studies to be done about mental health in Saudi Arabia during COVID-19 pandemic. taken into consideration the gender, age group and job. Also, it is important to mention the most common reasons that affect the mental health negatively such as concerning about own health, family or job.

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