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Research Article

Corona virus (Coved-19) and Their Effects on Health behaviors on the society of Tabuk area in The Kingdom of Saudi Arabia

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ABSTRACT:

Covid-19 virus is one of coronaviruses family that affect humman and animals. The most system in human that affect with this virus is the respiratory system which cause common colds middle east respiratory syndrome. The recently discovered corona virus causes the Coronavirus disease Covid-19, which first appeared in the Chinese city of Wuhan in December 2019 with symptoms are fever, fatigue, and a dry cough. This study amid to understand the impact of the COVID-19 on the health status of the population of the region by assessing the opinion of individuals. Sample of this study were 2453 individuals from the Tabuk region in KSA. Results found that the The Covid-19 virus has changed health and behavioral habits in Tabuk region of Kingdom of KSA.

Keywords: Coronaviruses**,** Tabuk region of Kingdom of KSA**,** COVID-19.

INTRODUCTION

Coronaviruses are a large family of viruses that may cause disease in animals and humans. It is known that some corona viruses cause respiratory diseases in humans, the severity of which ranges from common cold to severe diseases such as Middle East respiratory syndrome and severe acute respiratory syndrome (SARS) (World Health Organization, 2020). The recently discovered corona virus causes the Coronavirus disease Covid-19, which first appeared in the Chinese city of Wuhan in December 2019 (World Health Organization, 2020). The most common symptoms of Covid-19 disease are fever, fatigue, and a dry cough. Some patients may experience aches and pains, nasal congestion, runny nose, sore throat, or diarrhea. These symptoms are usually mild and begin gradually (Saudi Ministry of Health, 2020). Some people become infected without showing any symptoms and without feeling ill. Most people (about 80%) recover from the disease without needing special treatment. The severity of the disease is more severe in approximately one person out of every 6 people who develop Covid-19 infection, as they have difficulty in breathing (Almuttaqi, 2020). Older people and people with underlying medical problems such as high blood pressure, heart disease or diabetes are more likely to have severe symptoms. About 2% of people who contracted the disease died, and this percentage is increasing (World Health Organization, 2020).

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The disease can be transmitted from person to person through small droplets that are dispersed from the nose or mouth when a person with Covid-19 disease coughs or sneezes. This spray falls on the objects and surrounding surfaces (Mustafa, 2020). Other people can then become infected with Covid-19 disease when they come into contact with these objects or surfaces and then touch their eyes, nose, or mouth. Also, people can become infected with Covid-19 disease if they breathe in the droplets that come out of the person with the disease as they cough or exhale. Therefore, it is particularly important to stay away from the sick person by at least one meter .

The Covid-19 virus has changed the societies in general and in Kingdom of KSA (KSA) in particular. Note that, among the effective means for prevention against this virus is to respect social distancing and total confinement, and that these habits are new in our society. Therefore, there will certainly be social changes in the future which will affect all of our habits. Despite the proactive preventive measures taken by the KSA to preserve the health and lives of its citizens, the spread of the virus has not been able to prevent which is mainly due to the non-respect of social distancing and to certain bad health behaviors. For reference, these preventive measures have developed to deal with the pandemic thanks to the considerable efforts made by the State, namely, awareness campaigns and legislative measures. These efforts enforced the people to change of their behavioral habits that experts believe the best solution to get out of this crisis.

A study conducted by Asmundson and Taylor (2020) reported the negative impact of exceptionally long or strict safety measures on public mental health, also the study included aspects of the adverse consequences as a result of preventive social measures such as, economic turmoil and unemployment, increased fears and psychological unrest toward this virus. Moreover, Kosic (et al. 2020) explained that health awareness and preventive precautions may help to identify early signs of health problems and thus stimulate health-promoting behavior where they linked excessive health anxiety with increased excessive mental health damage. In addition, a poll conducted by Taylor (2019) in 2019, that observed raised concerns and anxieties about the consequences of infection, as it was found that anxiety and psychological factors play a vital role in the success or failure of health strategies used to manage epidemics such as hygiene practices, social distancing, vaccination, and anti-virus treatment. For example, it was found that the percentage of people who do not have confidence in the health care provided to them by their societies and their readiness to face new cases of Corona virus was 33%.

Furthermore, many researches confirmed that people's fears of the Corona virus due to its newness are much more than seasonal influenza, although the latter has killed more people, so the percentage of those who feared seasonal influenza and those who feared Corona virus were 27% and 37% over Running, as reported by Morning Consult (2020).

In a survey conducted by Angus Reid on 1354 Canadian adults in early February 2020 (Angus Reid Institute, 2020), found that 7% are genuinely concerned about infection, while a third of them are concerned about the virus, and the reason for this very small percentage is that only four Canadians were infected with the virus at a time. The survey conducted on a population of 37 million, which indicates very little risk. Despite this, there has been an increase in health behaviors since the spread of the virus was noticed, such as avoiding mixing, buying face masks, washing hands frequently, avoiding using public transportation. As 3% of the survey participants bought a face mask, and 41% of them started washing their hands. Continuously, 4% avoided public transportation, while 12% avoided public places.

In another study by Martens and others (Mertens et al. 2020) in the period between 14 and 17 March 2020, to determine fear predictions of the Corona virus for a number of 439 participants, where

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an online survey was conducted for a period of three days and included eight questions related to different dimensions of fear that included a study of self-anxiety, safety behaviors, open question, the predictors of health anxiety included psychological vulnerability factors, media exposure, personal fitness, and risk control. The study found that predictions regress concurrently, such as regular media use, health anxiety, and risks to people and social media use.

In Belgium, at the beginning of 2020, a survey was conducted that included 44,000 participants, and the percentage of people who had increased anxiety (20%) and depressive disorder (16%) compared to a survey conducted in 2018 (i.e. 11% and 10%), respectively (Sciensano 2020).

A study by Schimmenti et al. conducted in 2020 (Schimmenti et al. 2020) explained four areas of fear viz. fear for the health of the body, fear for VIPs, fear of not knowing enough about this virus, and fear of infecction. He also explained in his expression of the various behaviors that society quotes towards this emerging virus, "Fear is a subjective emotion that may contain peculiarities. Therefore, the fears that individuals may have may exceed those specified in this work."

-       Therefore, considering the impact of COVID-19 on various aspects of the human life the present study was performed to find out the behavioral changes in the community of Tabuk region of KSA. It was planned to understand the impact of the COVID-19 on the health status of the population of the region by assessing the opinion of individuals. Moreover, it was also evaluated, whether there are statistically significant differences in response to COVID-19 pandemic between various variables such as gender (male-female), age (less than 18 years old, between 18 and 60 years old, and older than 60 years), the educational level (uneducated - primary - secondary - university), and the place of residence (inside Tabuk, outside Tabuk).

Methodology
The study was conducted in Tabuk region in the KSA (KSA) during the first semester of the academic year 1441-1442 H. The study was limited to addressing the following variables: gender, age, educational level, and place of residence.
The approach of the study

The current study relied on the descriptive approach for its suitability to the goal of the study and related to identifying the effect of the COVID-19 on the health habits of the Tabuk region in the KSA according to the opinion of individuals.

The population of study

The study consisted of residents of Tabuk region in KSA, whose number is 930,50, according to the report of the General Authority for Statistics for the year (2018).

The sample size of the study

The appropriate sample size for the current study was determined with 2453 individuals from the Tabuk region in KSA, whose total number is 930,508, and the study sample represents (0.0026%) of the total number of the study population.

In selecting the sample, the study relied on the stratified random sampling method to draw the sample from the study population. This is in ordre to consider the gender variable (male, female), the age variable (less than 18 years, between 18 and 60 years, and over 60 years old), the educational level variable (uneducated, primary, secondary, and university level) and the place of residence

variable (Inside Tabuk, Outside Tabuk) when selecting the members of the study sample. Table (1) shows the characteristics of the study sample.

It is clear from Table 1 that the number of sample elements is distributed among all the variables in an acceptable manner for conducting the study.

Study tools

The study was based on a questionnaire. The questionnaire is a convenient tool for obtaining information, data and facts related to a specific reality (Obeidat and Abdelhak, 1988).

Validity of the content: The initial image of the questionnaire was presented to 5 arbitrators specialized in education and psychology, who expressed their opinion in terms of dimensions, appropriateness of the items, their wording and meaning, and the researcher made the required adjustments in reformulating the required items.

The stability of the questionnaire: The Cronbach's alpha equation was used and it is based on measuring the internal consistency of the scale elements and its components, by measuring the coherence and consistency between the items of each dimension, and it is used to identify the stability of the dimensions of the study tool in its measurement of the effect of the COVID-19 on behavior.

The reliability coefficient, "Cronbach's alpha", for the whole items of the questionnaire is 0.83, which is a degree that can be trusted.

Results and Discussion:

First question: What is the effect of the COVID-19 on the behavioral habits after the spread of the COVID-19 in the Tabuk region community in the KSA? To answer this question, averages and standard deviations were used and the order of the degree of the impact of the COVID-19 on the behavioral habits after the spread of COVID-19 in the Tabuk region community in the KSA Table 2 shows the results of this question.

The results of the Table 2 indicate that the level of behavioral habits after the spread of COVID-19 in the Tabuk region society was generally high, with an arithmetic mean and a standard deviation of (3.96 ± 0.51). For fear of violation, with an arithmetic mean and a standard deviation of (4.42 ± 0.95), followed in second place by the statement No. (8), which is "Distance education services have become widely available, and it is an opportunity to develop myself" with an arithmetic mean and a standard deviation of (4.36 ± 1.01). These results differed with what Haischer et al. (2020) found when they studied the conviction of wearing a muzzle on 9,935 shoppers in June, July and August of the year 2020, where it was found that only 41% of those who wear masks were found, but noticed in this study Also, the number is increasing. We also noticed that with the advancement of time, wearing a mask became more widespread and convinced.

While the results of the current study regarding the availability of educational and electronic services are in agreement with the study carried out by Al-Salmi (2020) at Sultan Qaboos University through the evaluation of e-learning in information studies. As it was found that the students in general were satisfied with the experience, as well as the interaction was great with all the electronic learning methods that were applied such as exams, discussions through chatting, weekly attendance as well as direct lectures.

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Second question: What is the impact of the COVID-19 on the health habits after the spread of the COVID-19 in the Tabuk region community in the KSA? To answer this question, averages and standard deviations were used. The order of the degree of the impact of the COVID-19 on the health habits after the spread of COVID-19 in the Tabuk region community is given in Table 3.

The results of the Table 3 indicate that the level of health habits after the spread of the Corona virus in the Tabuk region, in general, came with a high degree, with an arithmetic mean and a standard deviation of 3.79 ± 0.83. "With an arithmetic mean and a standard deviation of 4.51 ± 0.78, followed in second place by the statement No. 10, which is "Kissing the hand of parents or the elderly poses a real danger to their health" with an arithmetic mean and a standard deviation of 4.33 ± 0.97. The results of this study are consistent with the study of Al-Ayeb (2020), which documented that electronic commerce and electronic payment methods have become the only and popular method in the shadow of this pandemic. Scientific studies have not been documented with regard to kissing parents 'hand, while the Saudi Ministry of Health (Saudi Ministry of Health, 2020) warned against kissing parents' hands, as this risks the transmission of the infection to them and that their immunity is not strong enough.

Third question: Are there statistically significant differences between the averages of the response scores of the sample members about the effect of the COVID-19 on the health behaviors of the Tabuk region community in the KSA due to variables (gender (male-female) and the age variable (less than 18 A year and between 18 and 60 years and older than 60 years) and the variable of educational level (uneducated - primary - secondary - university) and the variable of place of residence (inside Tabuk - outside Tabuk))?

Gender variable: To reveal the significance of the differences between the responses of the study, sample individuals on the impact of the COVID-19 on the health behaviors of the Tabuk region in the KSA due to the gender variable (male-female), the arithmetic averages were extracted, and the standard deviations of the responses of the study sample individuals on the dimensions of the study, and the results were as in the Table 4.

The arithmetic averages in Table 4 indicate that there are statistically significant differences between the responses of the study sample individuals about the effect of the Corona virus on the health behaviors of the Tabuk region community in the KSA due to the gender variable (male-female) in the direction of males. This is because the significance level is less than 0.05.

Age variable: To reveal the significance of the differences between the responses of the study sample individuals on the effect of the COVID-19 on the health behaviors of the Tabuk region community in the KSA according to the age variable. The arithmetic averages indicate the existence of apparent differences between the responses of the study sample individuals about the effect of the COVID-19 on the health behaviors of the Tabuk region community in the KSA according to the age variable, and in the dimensions of the questionnaire, and to know the level of statistical significance for the differences in the arithmetic averages according to the age variable (Less than 18 years old, from 18-60 years old, more than 60 years old), One Way ANOVA was used, and the results were as shown in Table 5.

These results indicate that the differences between the responses of the study sample individuals about the effect of the COVID-19 on the health behaviors of the Tabuk region community in the KSA according to the age variable from the viewpoint of the individuals in relation to the dimensions of the study, and to reveal the source of the statistically significant differences in the effect of the virus. The results of this question show that the the effect of the Coronavirus on the health behaviors of the

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Tabuk region community in the KSA is due to the age variable, in favor of the age group greater than 60 years old. This result is consistent with what Haischer et al. (2020) found in his study of adherence to health precautions a greater commitment of the elderly than the young.

Educational level variable: To reveal the significance of the differences between the responses of the study sample individuals about the effect of the COVID-19 on the health behaviors of the Tabuk region community in the KSA according to the educational level variable (uneducated - primary - secondary - university) - the arithmetic averages were extracted, and the standard deviations of the responses of the study sample individuals on axes. The study, which measures the effect of the COVID-19 on the health behaviors of the Tabuk region in the KSA, according to the educational level variable, and the results are as in Table 6.

The results show that the source of statistically significant differences in the responses of the study sample individuals about the effect of the COVID-19 on the health behaviors of the Tabuk region community in the KSA is due to the educational level variable, in favor of university education.

This is a logical result, as the higher the educational level, the greater the awareness of all kinds and the commitment to health instructions. In a study in the Chinese community by Sun et al. (2020) on adherence to health precautions in public places, as this study found that the commitment was greater with the higher level of educational attainment.

Residence variable: To reveal the significance of the differences between the responses of the individuals on the effect of the COVID-19 on the health behaviors of the Tabuk region due to the variables of the place of residence (inside Tabuk - outside Tabuk), the arithmetic averages and standard deviations of the responses of the study sample individuals were extracted on the dimensions of the study (Table 7).

The arithmetic averages in Table 7 indicate that there are statistically significant differences in the responses of the individuals with the variation in the place of residence (inside Tabuk - outside Tabuk). This is because the significance level is less than 0.05.

In general, urban residents have more knowledge than the residents of remote areas. This might be by virtue of the fact that cities have more connectivity with national and international sources of information, as well as the availability of internet services and education. Therefore, we noticed that the study of Haischer et al. (2020) found that the commitment of urban residents and their suburbs was four times more than that of the rural population, and this is consistent with what the current study found that residents of Tabuk city were more committed to health precautions than residents of areas far from Tabuk city center.

CONCLUSION

The results of this study indicate that the level of behavioral habits after the spread of COVID-19 in the Tabuk region society was generally high, with an arithmetic mean and a standard deviation of (3.96 ± 0.51). The results also show that the level of behavioral habits after the spread of COVID-19 in the Tabuk region society was generally high. Males, people over 60 years, higher level of educational and people live in the city were more committed to health precautions.

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Table 1. The distribution of the sample

Variables		Frequency
Age	Under 18 years of age	622
	Between 18 and 60 years	1686
	Over 60 years old	145
	Total	2453
Gender	Male	1251
	Female	1202
	Total	2453
Educational level	Uneducated	88
	Primary	136
	Secondary	621
	Bachelor's degree	1608
	Total	2453
Residence place	Inside Tabuk	1757
	Outside Tabuk	696

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Variables		**Frequency**
Age	Under 18 years of age	622
	Between 18 and 60 years	1686
	Total	2453

Table (2): Means, standard deviations, and arrangement of the effect of the COVID-19 on behavioral habits after the spread of COVID-19 in the Tabuk region community in KSA

#	Items	Mean	Standard deviation	Order	Level(1)
9	I wear the muzzle out of conviction and not out of fear of offense	4.42	0.95	1	Very high
8	Distance education services have become widely available and it is an opportunity to develop myself	4.36	1.01	2	Very high
10	I increased my eagerness to do my religious duties	4.32	1.00	3	Very high
7	Be sure to take precautions to prevent the spread of the virus	4.31	0.84	4	Very high
1	I am spending more time with my family	4.30	0.80	5	Very high
5	I make good use of my spare time	4.07	0.89	6	High
3	I will make sure to exercise regularly	3.81	1.00	7	High
4	I tend to eat healthy food to increase my immunity	3.78	1.06	8	High
2	After the spread of Corona, I became inclined to isolation	3.44	1.26	9	High
6	I live in a state of fear and panic from catching epidemics	2.84	1.41	10	Medium
Behavioral habits after the spread of Covid-19		3.96	0.51		High

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(1) A high score in the questionnaire expresses a high acceptance of the item and a low score indicates a rejection of the item, so the response is classified through the average as follows: (from 5-4.21 very high) (from 4.20 -3.41 high) (from 3.40-2.61 medium) (from 2.60 - 1.81 low) (from 1.80-1 very low)

Table (3): Means, standard deviations, and arrangement of the effect of the Covid-19 on Healthy habits after the spread of COVID-19 in the Tabuk region community in KSA.

#	Items	Mean	Standard deviation	Order	Level
5	I became dependent on electronic payment methods.	4.51	0.78	1	Very high
4	Kissing the hand of parents or the elderly is a real danger to their health	4.33	0.97	2	Very high
3	I keep washing and sterilizing hands periodically.	4.32	0.89	3	Very high
8	Make sure the place is constantly ventilated.	4.31	0.85	4	Very high
1	I have a good scientific knowledge of Coronavirus and its transmission methods.	4.28	0.89	5	Very high
2	I can distinguish the symptoms of Corona	3.92	0.98	6	High
6	Make sure to read the contents of the meal and its ingredients.	3.76	1.11	7	High
7	I make sure to sleep early to maintain my health.	3.54	1.15	8	High
10	Make sure to have medical tests done periodically.	3.16	1.15	9	Medium
9	It is possible to use one towel for the whole family.	1.76	1.16	10	Very low
Healthy habits after the spread of Covid-19		3.79	0.83		High

Table (4): The results of (Independent Samples T-test) to reveal the significance of the differences between the responses of the study sample individuals to the effect of the Corona virus on the health behaviors of the Tabuk region in KSA due to the gender variable (male-female)

Dimensions	The sample	Mean	Standard deviation	t	Degrees of freedom	Deference of means	P-value	Significance level
Behavioral	1251	40.31	5.82	5.90	2451	1.36	0.000	Sig.

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habits	male							
	1202 female	38.95	5.59					
Healthy habits	1251 male	38.84	5.70	8.45	2451	1.94	0.000	Sig.
	1202 female	36.90	5.65					
Total	1251 male	119.20	15.42	8.00	2451	5.05	0.000	Sig.
	1202 female	114.15	14.27					

Table 5. The results of the One Way ANOVA analysis to reveal the significance of the differences between the responses of the study sample H on the effect of the COVID-19 on the health behaviors of the Tabuk region in KSA according to the age variable

Dimensions	The sample	Sum of squares	Degrees of freedom	Mean Squares	F	Significance level
Behavioral habits	Between groups	10806.25	2	5403.13		Sig.
	Within groups	70252.90	2450	28.67	188.43	
	Total	81059.15	2452			
Healthy habits	Between groups	12530.41	2	6265.21		Sig.
	Within groups	68771.53	2450	28.07	223.20	
	Total	81301.94	2452			
Total	Between groups	105110.09	2	52555.05		Sig.
	Within groups	402603.12	2450	180.86	290.58	
	Total	10806.25	2452			

Table 6. The results of the One Way ANOVA analysis to reveal the significance of the differences between the responses of the study sample H on the effect of the Covid-19 on the health behaviors of the Tabuk region in KSA according to the educational level variable

Dimensions	The sample	Sum of squares	Degrees of	Mean Squares	F	Significance level

			freedom			
Behavioral habits	Between groups	7260.22	3	2420.07	80.31	Sig.
	Within groups	73798.93	2449	30.13		
	Total	81059.15	2452			
Heath habits	Between groups	7099.03	3	2366.34	78.10	Sig.
	Within groups	74202.91	2449	30.30		
	Total	81301.94	2452			
Total	Between groups	62306.32	3	20768.77	103.75	Sig.
	Within groups	445406.90	2225	200.18		
	Total	507713.22	2228			

Table 7. Independent Samples T-test results to reveal the significance of the differences between the responses of the study sample individuals to the effect of the Covd-19 on the health behaviors of the Tabuk region community in KSA due to the variable of residence (inside Tabuk - outside Tabuk)

Dimensions	The sample	Mean	Standard deviation	t	Degrees of freedom	Deference of means	P-value	Significance level
Behavioral habits	1757 inside	40.42	5.27	10.880	2451	2.74	0.000	Sig.
	571 outside	37.68	6.42					
Health habits	1757 inside	38.64	5.50	10.428	2451	2.63	0.000	Sig.
	571 outside	36.01	5.96					
Total	1757 inside	118.92	13.73	11.552	2451	8.22	0.000	Sig.
	571 outside	110.70	17.10					