

Awareness of the Impact of COVID-19 virus on the depression on Population at Saudi Arabia at Makkah in Saudi Arabia 2021

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Abstract:

1. Background

The COVID-19 pandemic in KSA resulted in a nationwide quarantine on March 27th, 2020. This study represents the assessment of rates of depression in the general population of KSA during the pandemic. The COVID-19 pandemic has created an unprecedented global crisis, necessitating drastic changes to living conditions, social life, personal freedom and economic activity. study has yet examined the presence of depression symptoms in the KSA population under similar conditions. Patients at risk of severe SARS-CoV-2 acute respiratory syndrome are characterised by the high prevalence of pre-existing diseases (high blood pressure and cardiovascular disease, diabetes, chronic respiratory disease, or cancer), most of them typically present in severely depression patients. Indeed, the biological role of adipose tissue in sustaining SARS-CoV-2 infection is not completely elucidated. **Aim of the study:** To assessment the awareness of the Impact of COVID-19 virus on the depression on Population at Saudi Arabia at Makkah in Saudi Arabia 2021 **Method** : Across-sectional study among Population residents in primary health care center in Makkah Al-Mukarramah was conducted using an online questionnaire designed during April 2021. The questionnaire collected socio-demographic characteristics, depression Symptoms in participants before and during the COVID-19 Pandemic (via the PHQ-9 patient depression questionnaire) our total participants were (200). **Results:** most of the participants (41.0%) were in the age group more than 60 years follow by the (37.0%) were in the age 30-40 years, the majority of them were female (27.0%) while male(28.0%), regarding the marital status most of participants married

were(44.0%), regarding level of education the majority of participant are Primary/ Intermediate were(35.0%), regarding Chronic Medical conditions the majority of participant are Diabetes were(42.0%) while High blood pressure were(33.0%) , regarding the Working/studying from home most of participants answer No were(74.0%)while answer Yes were(15.33%).**Conclusion:** The research's showed increase in the prevalence of mental health problems and depression in the early stages of the pandemic, and these problems were predicted by several specific COVID related variables. Further similar surveys, particularly of those with children at home, are required as the pandemic progresses. In addition Anxiety and depression levels amongst Population at Saudi Arabia in healthcare were found to be high when assessed during the COVID-19 pandemic.

Keywords: Impact, COVID-19, obesity, depression, Population, Saudi Arabia, Makkah.

1. Introduction

Anxiety and depression in the Saudi Arabia during the COVID-19 pandemic In addition to representing a major threat to population physical health, the COVID-19 pandemic poses a threat to population mental health due to increased and prolonged feelings of fear and uncertainty; separation and grief; and disruption to social and economic systems.(1) Emerging international evidence indicates that posttraumatic stress disorder (PTSD) and depression symptoms are common in the general population during the early phase of this pandemic.(2,3) The mental health consequences

For the population of an existential threat on the scale of the current pandemic, and of the associated restrictions on movement and social gatherings, are not well understood. There has been research on the psychological effects of other infectious respiratory diseases (IRDs) such as SARS, the H1N1 flu pandemic and MERS. However, with a few exceptions, which are mostly from the far east and have focused largely on anxiety and its influence on risk perception and health behaviours rather than mental health more broadly.(4,5)

he spread of COVID-19 presents serious risks globally and in Saudi Arabia, which has reported 393 377 cases and 6704 deaths as of 06 April 2021.7 Saudi Arabia has exceptional circumstances as it is a hub for millions of foreign workers and pilgrims from across the globe. In response to the pandemic and to combat the spread of the disease, the government took swift action and closed the two holy mosques, suspended travel to the country, closed most businesses and limited individuals' movement. Further, the government created a national narrative to encourage citizens to adhere to the emergency measures established in response to the pandemic.(6) The Kingdom of Saudi Arabia took the deadly coronavirus outbreak seriously, even before the Ministry of Health announced the first confirmed

COVID-19 case; for example, it announced the temporary suspension of entry to Makkah and Madinah in February 2020.(7)

The most prevalence of obesity (>35%) was seen in the USA and in Saudi Arabia and a high prevalence of obesity (>20%) was additionally seen in Turkey, Egypt, Libya, Iran, Iraq, South Africa, Canada, Mexico, Australia and in the vast majority of the nations in South America and Europe. What's more, information from the WHO, keep going refreshed on 29 November 2020, show that in these nations with high corpulence pervasiveness, a high combined number of affirmed COVID-19-related passing's per million individuals is being observed¹⁹. The question is whether there is a relationship between obesity and severe COVID-19.(8)

Psychological health is touchy to traumatic mishaps and their social and economic consequences. Previous studies on disruptions to life owing to disasters, epidemics, or common distress propose that openness to large-scale traumatic events are associated with expanded weight of psychological illness in the populaces affected.[9]

Mental sickness has been very much recorded in the wake of previous financial recessions, especially among people who are jobless and are otherwise affected by social and economic adversity.[10] Early proof from published studies suggests that COVID-19 is related with mental illness.¹⁵ Among medical care laborers in China who were presented to patients with COVID-19, 50.4% revealed manifestations of depression.[11] Ebola, MERS, and SARS pestilences all showed an effect on psychological wellness that incorporates sadness, and even substance misuse has been accounted for[12]. During the MERS flare-up in Jeddah, western Saudi Arabia, a study announced a critical relationship between the degree of anxiety and avoiding behaviors [13]

The coronavirus 2019 (COVID-19) pandemic and the arrangements to contain it have been a close to pervasive openness with unknown effects on depression symptoms.

Literature review:

To the best of our knowledge, there are no published studies assessing the general population response to the emerging coronavirus infections in Saudi Arabia. WHO and MOH have proposed a few practices that can help tallness the mindfulness about practices of manifestations of the pandemic. Government of Saudi Arabia has been making a significant effort to ensure that of COVID-19 virus not affecting obesity and depression in to all residents minimize the effects of the pandemic .

In the current pandemic, a recent study carried out in china concerning COVID-19 psychological impact, revealed that 53.8% of respondents are showing moderate to severe

psychological impact, 16.5% and 28.8% reported moderate to high depressive or anxiety symptoms respectively, and 8.1% moderate to high levels of stress were reported. Anxiety and depression symptoms showed no decline four weeks after the COVID-19 pandemic [14].

In Poland, the greatest attention is paid to excessive body weight. According to the WHO Global Health Observatory data, in 2016, the percentage of women with excessive body weight (BMI ≥ 25 kg/m²) accounted for 39.2% in the world, 54.3% in Europe, and 51.1% in Poland, which was comparable with other European countries, like Italy (51.5%) and Spain (54.1%). The growing pandemic of obesity, not only in women, is observed in most of the world and also in Poland, which causes a serious public health problem.[15] A common health consequence of obesity in women is the raised risk for diet-related diseases, that is, diabetes, cardiovascular diseases, and some cancers [16]

[17] showed, on average, a similar tendency for both genders without specifying the women. The results of [18] only show in Italian adults that the perception of weight gain during lockdown was observed in 48.6% of the population (men and women), but in fact, the changes have not been studied. Staying at home for a long time can also be conducive to eating tasty meals, snacks, and drinking alcohol [18]. The increase in intake of foods rich in fat and sugars and/or a decrease in physical activity due to increasing urbanization are the main and obvious reasons for the positive energy balance and the weight gain, the changes in body weight can affect a significant percentage of the population. People who are overweight or obese are most prone to those negative modifications. Considering the pandemic nature of obesity and COVID-19, their cumulative consequences can strongly affect the health situation of societies, because, in addition to an increase in total food intake and particularly in the consumption of unhealthy foods, the self-reporting of boredom/loneliness, anxiety/depression have also been noted [19]

[20] showed that economic development influences negatively the obesogenic environment and thus the obesogenic severity. Interestingly, the results of study conducted in Poland among the population aged 15–29 years are in line indicate the positive association between the economic situation and obesity prevalence.[20]

Several studies have reported the impact of COVID-19 not only on the anxiety and depression levels, but also on the sleep pattern among individuals [21,22]. Emotional distresses can lead to changes in sleep patterns and sleep difficulties, which have been reported among individuals and students who suffer from higher levels of stress, anxiety and depression [23]

In a study of health care workers in Hubei province and surrounding regions,[24] found similar levels of depression: 49.6%of participants had no depression (vs 47.5%of participants), while 35.6%of participants had mild depression (vs 24.6%), 8.6%of participants had moderate depression (vs14.8%), and 6.2%of participants had moderately severe depression (vs 7.9%). The Lai et al15 sample in China included only health care professionals and was concentrated in the Hubei region, while our sample included a representative sample of all US residents and sampled the whole country.[25]

Rationale

After the first confirmed case, the government announced a series of extreme measures to control the spread of the virus, beginning on 8 March with a ban on all transport in and out of the Makkah Governorate. Then, on 6 April, they announced a 24-hour curfew to be implemented in the major cities, with movement restricted to essential travel between 6 am and 3 pm. the extremely proactive measures taken to prevent the spread of the virus could have provoked other health outcomes usually neglected in crisis and pandemic management. Residents are authorized to leave for essentials, like food and medications, between 6 a.m. and 3 p.m. Which led to an increase in people's leisure periods, and thus people spent most of their time eating which led to weight gain and depression among people.

Aim of the Study

To assessment the awareness of the Impact of COVID-19 virus on the depression on Population at Saudi Arabia at Makkah in Saudi Arabia 2021 .

2.3 Objectives:

- To assess the prevalence of the depression on Population at Saudi Arabia in Makkah Al-Mukarramah.

3. SUBJECTS AND METHODS

3.1 Study design:

The study has been carried out in Makkah Al-mukarramah is the holy city of every Muslim in the world. It is the main place of the pilgrims to perform Umrah and Hajj. Makkah is a modern city and there is a continuous working to improve the infrastructure of Makkah for the sake of both Makkah citizens and pilgrims. Also, it has 85 PHC centers under supervision of Directorate of Health Affairs of Makkah Al-Mukarramah. These centers distributed under 7 health care sectors and each sector contains around 10 – 14 primary health care centers. Three health care sectors inside Makkah Al-Mukarramah city (urban) with 37 primary health care centers underneath and four sectors are outside Makkah (rural) with 48 primary health care centers. The three healthcare sectors inside Makkah Al-Mukarramah are

Al-Ka'akya with 11 primary healthcare centers, Al-Adl with 12 primary healthcare centers and Al-Zahir with 14 primary healthcare centers.

Study setting / study area:

Study participants has been recruited on Makkah Al-mukarramh including PHC centers under supervision of Directorate of Health Affairs of Makkah Al-Mukarramah in Saudi Arabia. They are distinguished by their environment and the large number of residents in them, as well as the large number of foreigners one of the most important characteristics of Makkah is its locations, which is characterized good environment and the large number of residents in them.

Study population:

The researcher selected participants have **depression** has been recruited from PHC centers in the Saudi Arabia. Including Al-Ka'akya, Al-Adl, Al-Zahir primary healthcare centers.

Study design:

A cross-sectional study has been conducted To assessment the awareness of the Impact of COVID-19 virus on the depression on Population at Saudi Arabia at Makkah 2021 attendants in primary health care center data collection during April 2021.

Eligibility Criteria

Inclusion criteria:

The inclusion criteria were healthy Saudi females and males age (30–60 years old) living in Saudi Arabia and at the time the study was conducted have COVID-19

Exclusion criteria.

- Any participants who were non-Saudi nationals; pregnant or lactating women; and those previously diagnosed with sleep and/or psychiatric disorders, gastrointestinal disorders, significant proteinuria or amyloidosis, arthritis, anemia, mala absorption, or comorbid chronic diseases (e.g., thyroid disorders, diabetes mellitus, malignancies, and chronic obstructive pulmonary disease)
- Participants who refused to participate in the study
- Patients with language barriers .
- Saudi less than 30 years

Sample size

The total number of participants has been recruited from PHC centers in the Saudi Arabia. Including Al-Ka'akya, Al-Adl, Al-Zahir primary healthcare centers. Assuming the adult Saudi population to be 23,468,225. Based on this information sample size was

calculated using a website (raosoft.com). The resulted estimated sample size is (200) . The confidence interval is 95% and margin of error is 5%. The estimated prevalence used is 50% to calculate maximum sample size .

Sampling technique

The researcher has been using simple random sample technique. The researcher obtained the approval from family medicine program administrator, after that, the researcher has been Permission from the regional Research and Ethical Committee and participants. The online survey has be disabled when the sample size is achieved, the primary participants will be requested to rollout the survey further.

Study field :

Study has been conducted take place between 1/8/2021 to 1/9/2021.

Data collection tool:

The questionnaire is designed based on previous studies and frameworks to Impact of COVID-19 virus on the depression on Population at Saudi Arabia during Covid-19 Pandemic . The questionnaire was developed in English and was then translated into Arabic. The questions were first pre-tested and were revised and finalized after it was pilot tested. Before completing the survey, participants were required to indicate their consent using a forced response question followed by the survey questionnaires. The survey is estimated to take ~10 min to complete .

To collect the information, a set of questions were constructed and developed. All questions were closed-ended, with tick boxes provided for responses, participants answered the questionnaires from between 1/8/2021 to 1/9/2021

The questionnaire consisted of questions that

First part General and Socio demographic Information

These variables included contact data (email or mobile phone number), age, education level, income, marital status, Chronic Medical conditions, Working/studying from home.

Second part the questionnaire collected socio-demographic characteristics, depression Symptoms in participants before and during the COVID-19 Pandemic (via the PHQ-9 patient depression questionnaire). This study used the Arabic version that has been validated and extensively used in the Arabian population.

A Pilot study

Was carried out at the questions were first pre-tested and were revised and finalized after it was pilot tested. Before completing the survey, participants were required to indicate their

consent using a forced response question followed by the survey questionnaires. This study has been conducted and all suggestions taken into consideration. **Statistical Analyses**

Data were analyzed using SPSS version 24.0. Continuous variables were presented as the mean \pm SD, while categorical variables were presented as n (%). Differences in means and percentages were calculated using independent sample t-test, **Chi-square**, independence to analyses the association and the difference between two categorical variables or using other statistical tests if needed. A p-value < 0.05 was considered statistically significant.

Ethical consideration :

- Permission from family medicine program was obtained .
- Permission from the regional Research and Ethical Committee has been given to conduct our study.
- All the subjects have been participating voluntarily in the study .
- Privacy of information and confidentiality has been maintained .
- Full explanation about the study and its purpose was carried out to obtain their participation.

Budget: Self-funded

4. Results:

Impact of COVID-19 virus on the obesity and depression on Population at Saudi Arabia in Makkah Al-Mukarramah in 2021, total of 200 participants completed the survey for a completion rate of 100%.

Table 1 distribution of demographic characteristics of the research COVID-19 patients .

(n=200)

	N	%
Age		
30-40	74	37
40-60	44	22
>60	82	41
Gender		
Female	144	72
Male	56	28
Marital status		
Single	68	34
Married.	88	44
Divorced.	44	22
level of education		

Primary/ Intermediate	70	35
Secondary school	54	27
university	62	31
Postgraduate Studies	14	7
Chronic Medical conditions		
Asthma	42	21
Diabetes	84	42
Heart disease	64	32
High blood pressure	66	33
High cholesterol/Hyperlipidemia	30	15
Working/studying from home		
Yes	52	26
No	148	74

Table 1 shows that most of the participants (41.0%) were in the age group more than 60 years follow by the (37.0%) were in the age 30-40 years, the majority of them were female (27.0%) while male (28.0%), regarding the marital status most of participants married were (44.0%), regarding level of education the majority of participant are Primary/ Intermediate were (35.0%), regarding Chronic Medical conditions the majority of participant are Diabetes were (42.0%) while High blood pressure were (33.0%), regarding the Working/studying from home most of participants answer No were (74.0%) while answer Yes were (15.33%).

Table 2 distribution the prevalence of Depression Symptoms in participants Before and During the COVID-19 Pandemic

	PHQ-9				Paired T-test	
	Before		During		t	P-value
	Mean	± SD	Mean	± SD		
1. Little interest or pleasure in doing things	1.460	± 0.800	2.300	± 0.474	13.877	<0.001*
2. Feeling down, depressed, or hopeless	1.460	± 0.816	2.240	± 0.459	25.111	<0.001*
3. Trouble falling or staying asleep, or sleeping too much	1.607	± 0.802	2.340	± 0.503	19.188	<0.001*
4. Feeling tired or having little energy	1.540	± 0.856	2.273	± 0.476	21.37	<0.001*
5. Poor appetite or overeating	1.653	± 0.843	2.247	± 0.448	22.788	<0.001*
6. Feeling bad about yourself or that you are a failure or have let yourself or your family down	1.420	± 0.838	2.260	± 0.484	31.255	<0.001*
7. Trouble concentrating on things, such as reading the newspaper or watching television	1.513	± 0.766	2.287	± 0.496	35.1155	<0.001*

8.Moving or speaking so slowly that other people could have noticed. Or the opposite being so fidgety or restless that you have been moving around a lot more than usual	1.580 ± 0.813	2.260 ± 0.455	29.445	<0.001*
9.Thoughts that you would be better off dead, or of hurting yourself	1.460 ± 0.832	2.233 ± 0.469	30.114	<0.001*

Table 2 shows a significant positive higher levels of depression symptoms were observed during COVID-19 compared with before COVID-19 patients for each items in the before and during were P-value=0.001 were and t test respectively (items 13.877%, 25.111%, 30.7%, 19.188% , 21.37%, 22.788, item3 31.255%, 35.1155%, item4. 70.0%, 28.7%a item5.74.0%,25.3%,item6.70.0%, 28.0%, item7. 67.3%,30.7%, item8. 29.445%, 30.114% ,)

Table 3 distribution of the PHQ-9 during and before the COVID-19 pandemic in participants

	PHQ-9			Paired T-test	
	Range	Mean ± SD	T	P-value	
Before	5.000 - 25.000	16.511 ± 3.111	37.155	<0.001*	
During	19.000 - 27.000	23.204 ± 2.250			

Table 3 show the (during COVID-19 and before COVID-19) a significant relation were P-value=0.001 and T= 37.155 increase of changed in during COVID-19 the Range(19.000-27000) While (Mean ±SD) were (23.204±2.250). regarding before COVID-19 the range (5.000-25.000) . While (Mean ±SD) were (16.511±3.111).

Figure (1) distribution of the PHQ-9 during and before the COVID-19 pandemic in participants

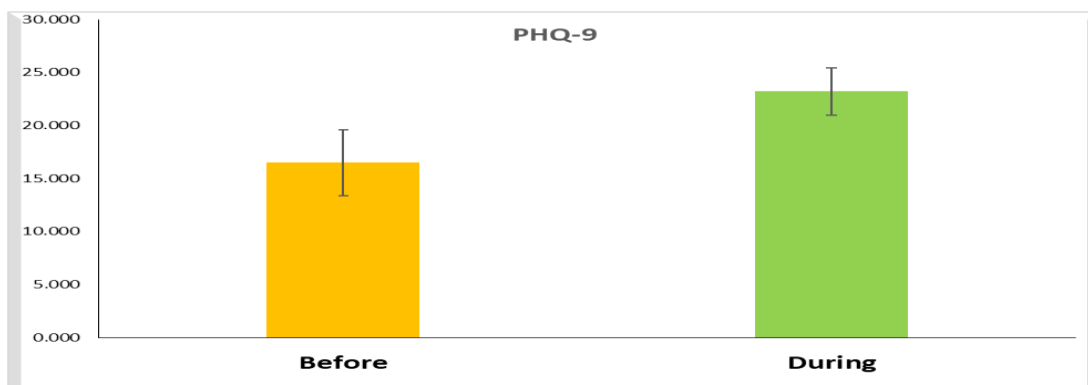


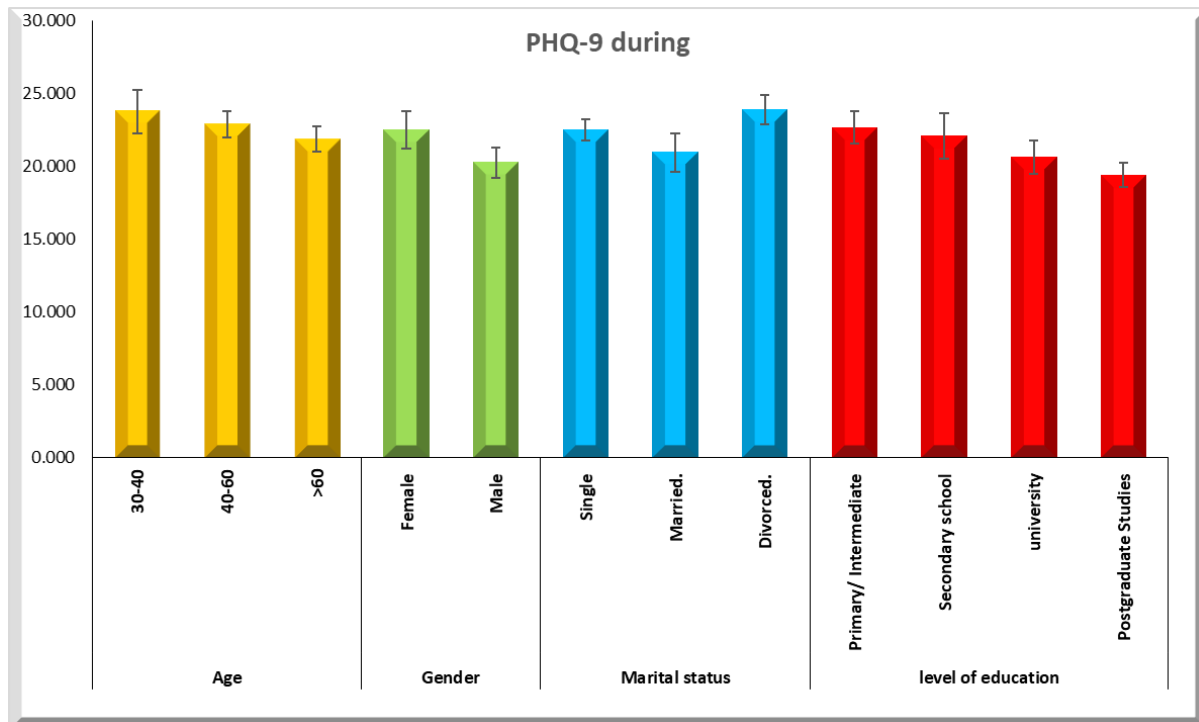
Table 4 Distribution the relation of socio-demographic data (Age, gender, marital status, level of education) and PHQ-9 about depression symptoms COVID-19 among

	N	PHQ-9 during		F or T	ANOVA or T-test	
		Mean	± SD		Test value	P-value
Age	30-40	74	23.778 ± 1.498	F	47.28	<0.001*
	40-60	44	22.879 ± 0.914			
	>60	82	21.867 ± 0.857			
Gender	Female	144	22.523 ± 1.304	T	11.596	<0.001*
	Male	56	20.252 ± 1.070			
Marital status	Single	68	22.505 ± 0.713	F	33.157	<0.001*
	Married.	88	20.964 ± 1.319			
	Divorced.	44	23.894 ± 1.028			
level of education	Primary/ Intermediate	70	22.678 ± 1.134	F	42.155	<0.001*
	Secondary school	54	22.073 ± 1.557			
	university	62	20.617 ± 1.133			
	Postgraduate Studies	14	19.394 ± 0.826			

Table 4 and figure(2) Regarding age, results show a significant relation between the PHQ-9 about depression and age were $F=47.28$ and $P\text{-value}=0.001$, increase(30-40 years old the mean +SD were (23.778 ± 1.498)), regarding gender show a significant relation between the PHQ-9 about depression and gender were $T=11.596$ and $P\text{-value}=0.001$, increase(female), the mean +SD were (22.523 ± 1.304) .

Regarding marital status show a significant relation between the PHQ-9 about depression and marital status were $F=33.157$ and $P\text{-value}=0.001$, increase(Divorced), the mean +SD were (23.894 ± 1.028) , regarding level of education show a significant relation between the PHQ-9 about depression and level of education were $F=42.155$ and $P\text{-value}=0.001$, increase(Primary/ Intermediate), the mean +SD were (22.678 ± 1.134) .

Figure (2) Distribution the relation of socio-demographic data (Age, gender, marital status, level of education) and PHQ-9 about depression symptoms



5. Discussion

The purpose of this study was to assess the Impact of COVID-19 virus on the depression on Population at Saudi Arabia in Makkah Al-Mukarramah.

shows that most of the participants (41.0%) were in the age group more than 60 years follow by the (37.0%) were in the age 30-40 years, the majority of them were female (27.0%) while male (28.0%), regarding the marital status most of participants married were (44.0%), regarding level of education the majority of participant are Primary/ Intermediate were (35.0%), regarding Chronic Medical conditions the majority of participant are Diabetes were (42.0%) while High blood pressure were (33.0%), regarding the Working/studying from home most of participants answer No were (74.0%) while answer Yes were (15.33%). (See Table 1)

Since the initial outbreak of COVID-19 disease in China, it has spread widely to various countries. According to the MOH update on the 20th of April 2020, the number of COVID-19 cases raised to 10,484 in Saudi Arabia [26]

This study found of depression symptoms in the in Saudi Arabia increased more than during the COVID-19 pandemic, from before COVID-19. To our knowledge, this is the first

nationally representative study that assessed depression symptoms using the Patient Health Questionnaire-9 in Saudi Arabia in Makkah Population before and during the COVID-19 pandemic. We found a shift in depression symptoms, with fewer people with no symptoms and more people with more symptoms during COVID-19 than before COVID-19. A significant positive higher levels of depression symptoms were observed during COVID-19 compared with before COVID-19 patients for each item in the score 2 and 3 were P -value=0.001 and also the total PHQ-9 (During COVID-19) a significant positive increase of depression symptoms were observed were P -value=0.001. (see table 2)

We found similarly a 2020 study by Ni et al [8] analyzed depression symptoms before and after political unrest in Hong Kong using the same measure of depression symptoms we deployed in this study [27]. They reported national depression symptoms prevalence before the unrest to be 6.5% (compared with 8.5% in our pre-COVID-19 US sample) and 11.2% in 2019 during unrest (compared with 27.8% in our during-COVID-19 sample). This suggests that the impact of COVID-19 on the US population may be substantially larger than that after other large-scale events. This may reflect the greater ubiquity of COVID-19 and its effects on the US population than prior recorded large-scale traumatic events. Our findings are consistent with studies in Asia showing a substantial burden of psychological distress following COVID-19. [28]

Also found similarly study confirms our results, as many of the participants (78.4%) reported changes in their sleep patterns. Female students were reported to be affected more severely with regards to their sleeping patterns and their psycho-emotional symptoms compared to males during the COVID-19 pandemic [29]

We found similarly in another study's the weight loss established in positively associated with healthy eating changes. The vegetable intake is inversely related to the weight change over time and reduces the likelihood of abdominal obesity [30] another study weight loss. The decrease in body weight was positively correlated with the decrease in consumption of the so-called discretionary foods: confectionery, salty snacks, commercial pastry, fast food, and sugar-sweetened beverages. is a confirmed phenomenon, that reducing the consumption of those types of foods and replacing them, even partially, with healthy products leads to weight loss in people of all ages [31]. Similar findings were obtained by [32], although their interventional study concerned obese adults that had undergone the educational program of body weight reduction with the Mediterranean diet implementation. Even though it seems that our finding is positive for public health, we noted, that many women who were underweight further decreased their body weight during the pandemic, which should be

considered as a disadvantage. It should be underlined that underweight adults with influenza may be five times more likely to develop severe disease, and have an increased risk of hospitalization, regardless of viral pathogen status[33]

Conclusion

stressful life events such as the Covid-19 Pandemic, isolation activities and community support and predispose to depression and may be a factor should emphasize on continuity of health services and ways of implementing innovative interventions to meet the health and socioeconomic needs of the population people to minimize the long-term consequences of the pandemic. Strategies to sustain behaviors positively adopted among population people has been critical to reduce the Obesity during spread of COVID-19.

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