Prevalence of Stress and its Associated with Body Weight among Patients Attending the Primary Health Care during Covid-19 in Makkah Al-Mukarramah, 2022

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Abstract

Background

Lockdown measures have a profound effect on many aspects of daily life relevant for stress and its associated with Body weight among patients whether lockdown measures in the context of the COVID-19 pandemic, differentially affect perceived stress, body weight, exercise. The World Health Organization declared coronavirus disease-19 (COVID-19) a pandemic. The pandemic has affected more than 100 countries since it started. Within about a year and half of this declaration, the COVID-19 pandemic has resulted in more than 4.3 million fatalities worldwide and a vast economic crisis with millions of people losing their job, stress and its associated with Body weight among patients is emerging as a serious problem throughout the world, not only among adults, but also health care worker and children, teenagers and young adults. Of the factors contributing to change of the body weight among patients , stress seems to be particularly important as stressful condition leads to irregularity in patients in work, lack of exercise.

Aim of the study: To Prevalence of stress and its associated with Body weight among patients attending the primary health care during Covid-19 in Makkah Al-Mukarramah ,2022.

Method: Cross-sectional analytical study has been conducted patients attending the primary health care during Covid-19 among at Primary Health Care Centers in Makkah city, that included all patients attending the primary health care during Covid-19 during data collection period 2022 the perceived stress scale-10 questionnaire used to measure the stress score. Weight and height were collected based on self-reported value. The total sample has been (200) patients.

Result: the age majority of the study groups were in the age range of (25-35) years were (32.0%), weight changes during the quarantine in Covid-19 the majority of the respondents didn't know were (45.0%), the BMI the majority of the respondents in Normal weight were (44.0%) they Continue Working During Covid-19 the majority of the respondents answer Yes were (66.0%).

Conclusion: Stress is prevalent and its associated with Body weight among patients attending the primary health care during Covid-19 in Makkah we found a positive correlation between BMI and stress but and concomitant effects on eating, need for interventions to minimize the stress and Body weight among patients, preventive measures should be implanted to reduce the level of stress and interventional studies are needed among patients at Primary Health Care Centers.

Key words: Associated, Stress, Prevalence, Body mass index, patient, Saudi Arabia.

Introduction

For more than tow year throughout the world, there have been social and economic disturbances among families, businesses, and national economies due to many problems related to COVID-19, as of July 13, 2021, 96.3% of those who contracted COVID-19 in the Kingdom of Saudi Arabia had recovered and its numbers are dynamic.[1] Adopting simple, healthy lifestyle practices in daily routines reduces the stress and mortality and morbidity patterns and improves quality of life. Unhealthy lifestyle behaviors such as poor diet quality, lack of exercise, smoking, and stress can lead to an increased burden on the community and country.[2]

The COVID-19 pandemic has affected many individuals in the past two year through prevalence of stress, increased body weight among patients and increased mortality, morbidity, and economic disturbances while also affecting individual lifestyles. Healthy lifestyle practices can reduce mortality and morbidity and improve quality of life [3]

Prolonged lockdown and staying at home for longer periods affect daily wages, which may affect livelihoods. During this crisis management, people may experience psychological disturbances, such as anxiety or depression and stress and increase body weight among patients. For individuals to take care of their own health and also take care of their dependents, they need to adopt good

lifestyle changes around the house that will help them overcome the uncertainty of the COVID-19 pandemic.[4,5]

Chronic stress during the COVID-19 pandemic this is stress that lasts for a longer period of time. Any type of stress that goes on for weeks or months is chronic stress. You can become so used to chronic stress that you don't realize it is a problem. If you don't find ways to manage stress, it may lead to health problems.[6] Acute stress this is short-term stress that goes away quickly. You feel it when you have a fight with your partner. It helps you manage dangerous situations. It also occurs during the COVID-19 pandemic when you do something new or exciting like prolonged lockdown and staying at home for longer periods all people have acute stress at one time or another[7]. Also Stress is defined as a state of uncontrolled emotional changes caused by different stressors. It is characterized by non-specific body reactions to disturbing situations in the surroundings [8] the patients attending the primary health care during Covid-19 long duration of time that a well-known source of stress to patients [9]

Ongoing outbreak of the novel coronavirus infectious disease 2019 (COVID- 19) constitutes a major global pandemic health care system challenge.[10] Shortly following the disease outbreak, like SARSCoV virus, all affected countries are implementing various preventive and control measures to mitigate the spread of the disease. Optimizing public health system during COVID-19 pandemic requires not only advanced medical and biological sciences knowledge, but also all human sciences related to social, as well as nutritional behavior, and lifestyle practices.[11] The COVID-19 quarantine has caused significant changes in everyday life.   The effect of the quarantine on dietary, physical activity and stress in Saudi Arabia and the association between health behaviors and weight changes.[12] No published study was conducted KSA to look into the association between stress and body weight among patients.

Literature Review

  A study conducted among 3533 participants in Italy on lifestyle changes during the COVID-19 lockdown found that increased prevalence of stress and its associated with increased body weight among patients weight gain was observed in 48.6% of the study population.[13] Balanzá, et al(2020) Another study done on lifestyle behaviors and stress during the COVID-19 pandemic [14], at the University of Valencia stated that lifestyle changes such as excessive diet, lack of exercise, increased tobacco use, and mental disorders were associated with increased COVID-19 mortality.[15]

   In recent years, the increase in the prevalence of stress and its Association with Body Weight

among patients attending the primary health care during Covid-19 obesity, overweight and their physical and mental health problems has attracted much attention.[16]

Studies in different parts of Iran have reported overall prevalence of overweight (16.34%) and obesity (3.04%) [17]. Also, in another study has been reported that the prevalence of obesity and overweight was 3.5% and 16.6%, respectively, that the prevalence of stress and its association with Body Weight Among health care worker was similar to other study's; however, the prevalence of overweight was highest. [18] In the Rahimi Bashar and Motahari study on the other city of Iran, the prevalence of obesity association stress with overweight among the 370 nurses females was 20.8% and 3.4% [19], also similar a study in Egypt (43.7%),[20] or a Malaysian study (41.9%)[21] and a British study (31.2%).[22] This could be either due to the different instruments used in other studies or it could be a real difference.

Both stress and an unhealthy body weight can cause major psychological and physical health issues that will have bad impacts on population [23]. Other studies done in Jizan, KSA (p-value= 0.001) [24] and Egypt (p-value =0.001) [20] A prior study done in Taibah university recommended a continuous supervision of students by their academic supervisors and to dissolve any barriers between the students and staff by strengthening the bonds and trust between them and minimize the stressful environment at the college of medicine [25].

Kiadaliri et al found specific c stress symptoms and overall prevalence or mean scores of stress were scarce and did not turn out to be a significant factor in reporting of stress.[26]

Salehi et al reported several studies have demonstrated heterogeneity in eating behaviors in response to stress; some people eat more when stressed while others eat less.[27] , However, we have found a strong correlation between psychological stress and body weight, greater the psychosocial stress more is the body weight[28]

Previous studies have revealed that obesity is among the major cause of Stress, cardiovascular diseases, diabetes, cancers, and the related issues that may lead to morbidity and mortality. In most of the countries, the high total obesity and overweight cost represents a relative economic burden on the GDP. Over the last decade, the prevalence of obesity has increased significantly in several developed and developing countries [23]. The current research paper focuses on obesity in Saudi Arabia, which has now one of the highest obesity and overweight prevalence rates and association with stress [10].

Rationale

Studies had an alarming high prevalence rate Prevalence of stress, depressive symptoms psychological functions depression, Anxiety, and associated with Body weight among patients

attending the primary health care during Covid-19 increased. During the COVID-19 pandemic, many people subconsciously may have had some symptoms of depression based on the news, the gravity of presentation, and the long duration of the pandemic. Because of multiple dependent lifestyle factors in our study, we could not assess exactly the anxiety and stress levels in the population. As there is no study in the literature about it in Makkah , 2019. Thus investing in this topic well fulfills the.

Aim of the study

To Prevalence of stress and its associated with Body weight among patients attending the primary health care during Covid-19 in Makkah Al-Mukarramah ,2022**.**

Objectives:

The current study to Prevalence of stress and its associated with Body weight among patients attending the primary health care during Covid-19 in Makkah Al-Mukarramah ,2022**.**

Methodology
Study design and setting:

A cross sectional study was conducted at primary health care centers in makkah 2022

Study setting:

This study was conducted at in Primary Health Care Centers in makkah 2022

Study population and sampling:

The study has be carried out in the city of Makkah Al-Mokarramah Makkah is the holiest spot on Earth. It is the birthplace of the Prophet Mohammad and the principal place of the pilgrims to perform Umrah and Hajj. It is located in the western area in Kingdom of Saudi Arabia and called the Holy Capital. Contains a population around 2 million. This study was conducted in Makkah primary health–care centers at Saudi Arabia, and it reflects a diversified demographic profile with a considerable portion of the population comes from rural descent, while others come from an urban one. This difference translates into biological, socioeconomic and lifestyle differences in the Makkah population

Inclusions and Exclusions criteria:

Inclusion: patients attending the primary health care during Covid-19.

Exclusion criteria : There are no exclusion criteria.

Sample Size :

The researcher has used 50%, moreover, based upon a confidence level 95% and margin of error of 5%. The sample size calculated using the Raosoft calculator has be 200 of the agreed to participate in the study

Sampling technique:

The researcher has used simple randomization between all the patients attending the primary health care during Covid-19 agreed to participate in the study .

Has been contacted during the study duration between the students agreed to participate in the study to cover the sample size

Data collecting tools:

A stress score questionnaire (perceived stress scale-10) by Sheldon Cohen used to measure the stress level. It consists of 10 scale questions and ranges from 0 to 4. The higher the score index, the higher the level of stress.

- Score ranging from 0-13 considered low stress.
- Score ranging from 14-26 considered moderate stress.
- Score ranging from 27-40 considered high stress.

Height and weight data were collected from participant based on their self-reported values. The Body Mass index was calculated by using the equation weight/ height (m2). Participants considered underweight if BMI <18.5, normal if BMI <25, overweight if BMI ranged from 25-29.9 and obese if BMI more than or equal 30.

Data analysis:

For the data entry and statistical analysis, the statistical package for the social sciences (SPSS) version 24.0 was used. Appropriate statistical tests were used in the analysis based on the types and distribution of the study data. Categorical data were analyzed using chi square test while Chi-square was used for numerical data. The results will be statistically significant if the P value is <0.05.

Data Collection technique:

The researcher has been distributed the questionnaire personally to all patients attending in Primary Health Care Centers. After approval from higher authorities acquired, during the working hours, specifically between the break times . Where a short introduction about the research and its

importance were presented . The response rate was high.

Data Entry and Analysis :

The researcher has used the statistical program for social sciences SPSS software 24.0 for data entry and analysis. Necessary statistical tests such as Chi- square and other appropriate tests had been used. A p- value of less than 0.05 has been adopted for statistical significance.

Pilot study/pretesting :

The questionnaire has been applied to 10% of the sample size over the patients in Primary Health Care Centers

Ethical considerations:

Permission from the Makkah joint program Family Medicine program has be obtained. Permission from the Directorate of health , verbal consents from all participants in the questionnaire were obtained. All information was kept confidential, and results has be submitted to the department as feedback

10. Budget: Self-funded

3. Result

Table (1) Distribution of socio-demographic data among participant patients during Covid-19 in the study. (n=200)

	N	%
Age		
<25	32	16
25-35	64	32
35-45	44	22
>45	60	30
Gender		
Female	114	57
Male	86	43
Marital status		
Single	38	19
Married	124	62

Other	38	19
Education level		
High school	90	45
University	110	55
Weight changes during the quarantine in Covid-19		
Gained	50	25
No changes	60	30
didn't know	90	45
Nationality		
Saudi	74	37
Non -Saudi	126	63
BMI		
Underweight	24	12
Normal weight	88	44
Overweight	64	32
Obese	24	12
Smoking		
Current	70	35
Non-Current	130	65
Continue Working During Covid-19		
Yes	132	66
No	66	33

Regarding the age majority of the study groups were in the age range of (25-35) years were (32.0%) while followed by age range of (>45) were (30.0%). Regarding the gender many of the respondents were female (57.0%) while male were (43.0%). Regarding the Marital status, the majority of the respondents were married status were (62.0%) while single and other were (19.0%). Regarding the Education level the majority of them had University were (55.0%) while high school was (45.0%). Regarding Weight changes during the quarantine in Covid-19 the majority of the respondents didn't know were (45.0%) while No changes were (30.0%). Regarding Nationality the majority of the respondents Non -Saudi were (63.0%) while Saudi were (37.0%). Regarding the BMI the majority of the respondents in Normal weight were (44.0%) while Overweight were (32.0%). Regarding the Smoking the majority of the respondents in Non-Current were (65.0%)

while Current were (35.0%), Regarding the Continue Working During Covid-19 the majority of the respondents answer Yes were (66.0%) while No were (33.0%).

Table (2) Description of stress and it's associated with Body weight among patients attending the primary health care during Covid-19 according to the stress score

	N	%
Changed after Covid-19 starting.		
Yes	134	67
No	66	33
If yes, the change was around:		
More	75	55.97
Less	30	22.39
I don't know	29	21.64
Current GPA during Covid-19		
<2	10	5
2 – 2.74	16	8
2.75 – 3.74	38	19
3.75 – 4.49	58	29
4.5 – 5	78	39
How much time do you spend work per day during Covid-19		
Less than 1 hour	22	11
1 - 2 hour	46	23
3 - 5 hour	62	31
More than 5	70	35
The numbers of meal per day during Covid-19		
1 meal	24	12
2 meals	96	48
3 meals	52	26
More than 3	28	14
Frequency of snacks between meals (chips, chocolate, sweets)		

Never	30	15
Always	68	34
Sometimes	70	35
Rarely	32	16
Fast food per week during Covid-19		
Never	24	12
1-3.	112	56
4-7.	42	21
More than 7	22	11
How often do you have stimulants (tea, coffee) in a week during Covid-19		
Never	30	15
1-3.	44	22
4-7.	32	16
More than 7	94	47

Regarding the Changed after Covid-19 starting the majority of participant answer yes were (67.0%) while followed by not changed were constitutes (33.0%) according to answer yes the change was around most of study answer More were (55.97%) while answer less were (22.39%) followed by I don't know constitutes (21.64%), regarding the Current GPA during Covid-19 the majority of participant between the (4.5 – 5) were constitutes (39.0%) followed by between the (3.75 – 4.49) were constitutes (29.0%) while participant (<2) were constitutes (5.0%), regarding the how much time do you spend studying per day during Covid-19 the majority of participant more than 5 hour were constitutes (35.0%) followed by (3–5) hour were constitutes (31.0%) while less than (1 hour) were constitutes (11.0%), regarding the numbers of meal per day during Covid-19 the majority of participant between the (2 meals) were constitutes (48.0%) followed by (3 meals) were constitutes (26.0%) while more than 3 were constitutes (14.0%), regarding the frequency of snacks between meals (chips, chocolate, sweets) the majority of participant between the sometimes were constitutes (35.0%) followed by always were constitutes (34.0%) but Rarely were(16.0%) while never were constitutes (15.0%), regarding The Fast food per week during Covid-19 the majority of participant between the (1-3) were constitutes (56.0%) followed by between the(4-7) were constitutes (21.0%) while never were constitutes (12.0%), regarding How often do you have stimulants (tea, coffee) in a week during Covid-19 the majority of participant more than 7 were

constitutes (47.0%) followed by between the(1-3) were constitutes (22.0%) while never were constitutes (15.0%)

Table (3) Description the Occurrence of Chronic Diseases among various weight groups during COVID-19 .

	N	%
Chronic diseases	150	75
Diabetes Mellitus	130	65
Hypertension	132	66
Liver Diseases	68	34
Thyroid Dysfunction	50	25
Cardiovascular diseases	64	32
Respiratory Diseases	90	45
Kidney Diseases	24	12
Medical nutrition effect	44	22
Medical effect	16	8

Regarding the Chronic diseases the majority of participant heave Chronic diseases were (75.0%), regarding the Hypertension the majority of participant were constitutes (66.0%) followed by Diabetes Mellitus were constitutes (65.0%) while Respiratory Diseases were constitutes (45.0%) also followed by Liver Diseases were constitutes (34.0%) followed by 3.75 – 4.49 hour were constitutes (39.0%) while Cardiovascular diseases were constitutes (32)

Table (4) Description of the Stress Score associated with Body weight among patients during Covid-19

Stress		
	N	%
Low Stress	38	19
Moderate Stress	56	28
Severe Stress	106	53
Total	200	100

Chi-square	X^2	37.24
	P-value	<0.001*

Regarding The association between the Stress Score associated with Body weight among patients during Covid-19 most of the participant Severe Stress were constitutes (53.0%) followed by Moderate stress were constitutes (28.0%) while a significant relation (P-value =0.001)and Chi-square (37.24).

Figure (1) Description of the Stress Score associated with Body weight among patients during Covid-19
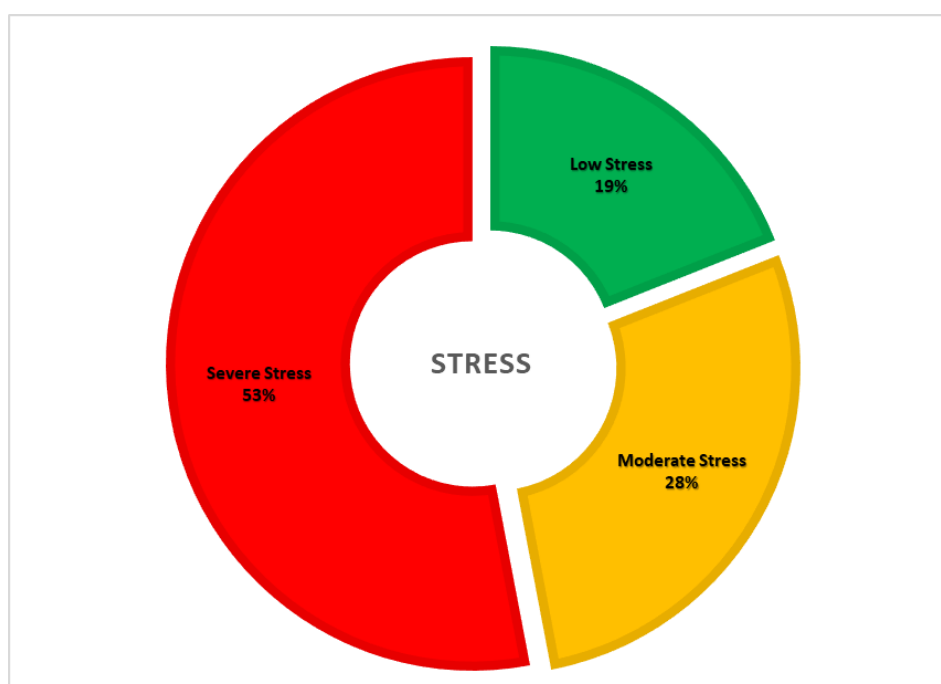
Table (5) Description of the Correlation between BMI and stress level during Covid-19 .

	Total	Low Stress		Moderate Stress		Severe Stress	
		N	%	N	%	N	%
Underweight	24	5	13.16	10	17.86	9	8.49
Normal weight	88	25	65.79	16	28.57	47	44.34
Overweight	64	6	15.79	24	42.86	34	32.08

Obese	24	2	5.26	6	10.71	16	15.09
Total	200	38	100.00	56	100.00	106	100.00
Chi-Square	X^2	17.408					
	P-value	0.007*					

Regarding the association between the BMI and stress level during Covid-19 most of the participants a significant relation were (P-value =0.007) and X^2 17.408 .

Regarding Underweight the most of participant heave moderates Stress were (17.0%) followed by low stress were(13.16%) while severe stress were(8.49%), regarding the Normal weight the most of participant heave low stress were (65.79%) followed by severe stress were (44.34%), while moderate stress were (82.57%), regarding the Overweight the most of participant heave moderate stress were (42.86%) followed by severe stress were (32.08%), while low stress were (15.79%), regarding the Obese the most of participant heave severe stress were (15.86%) followed by moderate stress were (10.71%), while low stress were (5.26%)

Figure (2) Description of the Correlation between BMI and stress level during Covid-19 .
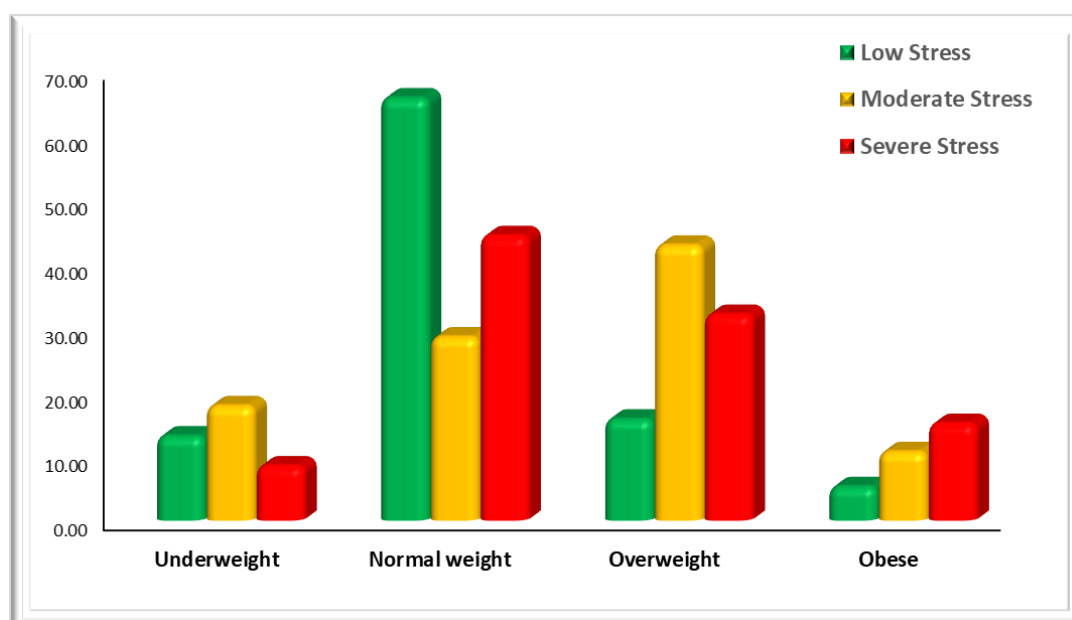
5. Discussion .

This study was conducted Prevalence of stress and its associated with Body weight among patients attending the primary health care during Covid-19 in Makkah Al-Mukarramah ,2022. Both stress and an unhealthy body weight can cause major psychological and physical health issues that

will have bad impacts on patients [10]

This study showed a significant association between BMI and stress which is in agreement to other studies done in Jizan, KSA (p-value= 0.001) [24] and Egypt (p-value =0.001) [20]

Most of the respondents were female, they accounted for participant and patients were . The perceived prevalence of stressed respondents . The prevalence of stress in this study is lower than the ones from Malaysia (48.6%) [24], Dammam (71.7%) [29], Jizan (71.9), and United Kingdom (31.2%) [21] but higher than Swedish study (12.9%). [17] In 2014, the College of Medicine at Taibah University started a new curriculum that implemented these recommendations which might have helped in decreasing the stress among medical students.

Regarding the age majority of the study groups were in the age range of (25-35) years were (32.0%). Regarding the gender many of the respondents were female (57.0%). Regarding the Marital status, the majority of the respondents were married status were (62.0%). Regarding the Education level the majority of them had University were (55.0%). Regarding Weight changes during the quarantine in Covid-19 the majority of the respondents didn't know were (45.0%). Regarding Nationality the majority of the respondents Non -Saudi were (63.0%). Regarding the BMI the majority of the respondents in Normal weight were (44.0%). Regarding the Smoking the majority of the respondents in Non-Current were (65.0%). Regarding the Continue Working During Covid-19 the majority of the respondents answer Yes were (66.0%) . (See table 1)

Studies have shown that as smoking increases, the risk of developing severe symptoms of COVID-19 increases along with the risk of an admitted patient's mortality.[30] A study done by Zhao et al. showed that there was a significant relationship between smoking and the severity of COVID-19, (OR: 2.0; 95% CI = 1.3–3.1) and stated that mortality increased twofold with increased smoking. Other studies mentioned that as smoking increases, the increased cardiovascular risk also affects COVID-19 mortality.[31]

In the current study, the participants reported stress and it's associated with Body weight among patients attending the primary health care during Covid-19 according to the stress score

Regarding the Changed after Covid-19 starting the majority of participant answer yes were (67.0%), while answer less were (22.39%), regarding the Current GPA during Covid-19 the majority of participant between the (4.5 – 5) were constitutes (39.0%),regarding the how much time do you spend studying per day during Covid-19 the majority of participant more than 5 hour were constitutes (35.0%), regarding the numbers of meal per day during Covid-19 the majority of participant between the (2 meals) were constitutes (48.0%), regarding the frequency of snacks between meals (chips, chocolate, sweets) the majority of participant between the sometimes were

constitutes (35.0%), regarding The Fast food per week during Covid-19 the majority of participant between the (1-3) were constitutes (56.0%), regarding How often do you have stimulants (tea, coffee) in a week during Covid-19 the majority of participant more than 7 were constitutes (47.0%). (See tabal2)

In the anther study, approximately 29% of participants expressed financial difficulties during the COVID-19 pandemic. Nurunnabi et al.[32] conducted a study in April 2020 that revealed that many of the businesses located in Riyadh (27%) and Qassim province (30%) were negatively affected by the pandemic. During this period, the Saudi government took great initiatives to help private employees overcome the COVID-19 crisis, and some financial stimulus packages were provided to private companies to safeguard their workers.[33]

Conclusion

We can conclude that Prevalence of stress and its associated with Body weight among patients attending the primary health care during Covid-19 in Makkah Al-Mukarramah ,2022 but without any significant difference between male and female during Covid-19 . The prevalence rate of obese and overweight is not very high but there is a strong correlation between stress and BMI. Obesity is regarded as one of the most common health issue in different parts of the world during Covid-19 . In Saudi Arabia, there is an increasing trend in the prevalence of obesity and overweight during Covid-19 , which are also the sources of various diseases including hypertension, diabetes, obstructive sleep apnea, CVD etc. The research paper evaluates prevalence of obesity during Covid-19 in Saudi Arabia by reviewing previous literature. According to the findings, the rate of obesity is significantly high in the country during Covid-19and expected to increase in future. There is a dire need to raise the issue at the national level, and design efforts and strategies to combat obesity in the country, through involvement of all stakeholders, including policy makers, educators, healthcare providers, and individual citizens.

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