

## **Prevalence of Depression and Anxiety Symptoms of primary School Students during the COVID-19 Epidemic attending primary health care center in Makkah Al-Mukarramah at Saudi Arabia 2022**

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### **Abstract:**

#### **Background:**

The outbreak of the 2019 coronavirus disease (COVID-19) began in Wuhan City, China, in December 2019. The outbreak was sudden and unexpected in most countries. It has spread globally between January and March 2020. The World Health Organization (WHO) first declared the outbreak as a global pandemic on March 11, 2020. The COVID-19 outbreak has resulted in governments implementing disease containment measures such as school closures, social distancing, and home quarantine. To date, only a few studies have drawn attention to the psychological impact of lockdown on Saudi Arabia children's depression and Anxiety, home quarantine may lead to families developing a variety of psychological distress, the psychological status of children and their parent during 2019 coronavirus disease (COVID-19) outbreak in Saudi Arabia, also the coronavirus disease 2019 (covid-19) has brought physical risks as well as psychological challenges to the whole world, school students are a special group suffering from both the academic pressure and the threat of the epidemic.

**Aim of the study:** To assessment the Prevalence of Depression and Anxiety Symptoms of primary School Students during the COVID-19 Epidemic attending primary health care center in Makkah at Saudi Arabia 2022.

**Method:** cross sectional study conducted at outpatient clinics who registered in the chronic disease clinic attended primary health care center in Makkah 2022. Sample primary School Students number of students attending in primary health care center . Our total participants were (200 ).

**Results:** show regarding the age majority of the study groups were in the age 41-50 were (44.0%) the education status, the majority of the respondents had Diploma were (31.0%) regarding the Relatives/neighbors infected with Corona the majority of the respondents answer Yes were (55.0%) regarding the Number of children the majority of the respondents three to five children were (40.0%)

**Conclusion:** Quite a number of primary School Students suffered from depression and anxiety symptoms during the COVID-19 epidemic. Sufficient attentions should be paid, and necessary supports should be provided, to protect the mental health of this special group.COVID-19 has caused increased stress on families, especially children and adolescents who are vulnerable populations. Our results show that the COVID-19 pandemic can affect the mental health of children and adolescents in Saudi Arabia.

**Keywords:** Prevalence, depression, anxiety, primary, School, Students, primary health care center , Makkah Al-Mukarramah.

## **Introduction :**

### **Background**

COVID-19 outbreak was sudden and unexpected in most countries. It has spread globally between January and March 2020. The World Health Organization (WHO) first declared the outbreak as a global pandemic on 11 March 2020. (1) While this lockdown has proven to be an important and successful method of social distancing to counter the growing spread of the highly contagious COVID-19 virus, it has also created a degree of psychological impact on the public.(2) Children may be strongly exposed to pandemic-generated bio psychosocial stressors, and once the containment measures of the population are needed to minimize the spread of viruses, they may be negatively impacted by the disturbance of everyday life as a result of social isolation.(3) During school closures, children's routines may change, depression and Anxiety and healthy behaviors, such as physical activity, adequate diet, or good sleeping habits, may be less likely to happen The current COVID-19 pandemic has become a challenge to psychological health as previous studies revealed a deep and wide spectrum of psychosocial effects, depression and Anxiety during past

outbreaks of infectious diseases on human, community, and international levels.(4) Since then, regional isolation measures or lockdowns have begun to be enforced in Saudi Arabia, among other countries. Children may be strongly exposed to pandemic-generated bio psychosocial stressors, and once the containment measures of the population are needed to minimize the spread of viruses, they may be negatively impacted by the disturbance of everyday life as a result of social isolation (5). In this context, school closures, social distancing, and home quarantine were some of the key steps taken during the lockdown to prevent the transmission of this infection (6)

This pandemic has resulted in governments implementing disease containment measures such as school closures, social distancing, and home quarantine.(7) In Saudi Arabia, the most affected in Saudi region, the first school closure began the 21st of February 2020, and, on 5 March 2020, all schools in Saudi Arabia were closed and students isolated at home for the rest of the academic year, with schooling shifted to home based distance-learning models.(8) The closure of schools was the first mass intervention taken towards a target population. School activity was the first to be suspended and the last to be resumed, by not considering how to mitigate the negative impacts of lockdown.(9) There is still significant controversy about the role of children in spreading the virus, also at school: evidence is emerging that children may be significantly less likely to become infected than adults, and do not appear to be super spreaders (10). On the one side, it is suggested that children may play an attenuating role both with respect to epidemiological and clinical dynamics. On the other side, some of these effects may be age dependent, with younger children more likely candidates for a lesser role in transmission (11). According to the United Nations Educational, Scientific and Cultural Organization (12)

Children may be strongly exposed to pandemic-generated bio psychosocial stressors, and once the containment measures of the population are needed to minimize the spread of viruses, they may be negatively impacted by the disturbance of everyday life as a result of social isolation (13). While this lockdown has proven to be an important and successful method of social distancing to counter the growing spread of the highly contagious COVID-19 virus, it has also created a degree of the depression and Anxiety of psychological impact on the public especially children of school age (14). Everything changes among children; they cannot play outside as they did before. When a child walks outside, they must wear a face mask. It is difficult for youngsters to understand the rationale for wearing a face mask, or some children may understand the reason but still only wear it because their parents urge them to. It has been demonstrated that this pandemic may appear to have more long-term negative consequences on children than on adolescents and adults (15)

Generally, children and adolescents are healthy and do not require much health care outside of regular checkups and immunizations (16). However, a healthy mental state is very important for

children and adolescents. Globally, depression and anxiety is the fourth leading cause of disease and disability among adolescents aged 15–19 years, and the 15th for those aged 10–14 years (17)

### **Literature Review:**

A recent review highlighted that children and adolescents are probably more likely to experience high rates of depression and anxiety during and after enforced isolation ends (18). The authors found a clear association between anxiety and mental health problems, mostly depression, in children and adolescents. Loneliness was associated with future mental health problems up to 9 years later(19).

A meta-analysis of the prevalence of depressive symptoms in children and adolescents in China indicated that the reported point prevalence of depressive symptoms ranged between 4 and 41%, the pooled prevalence of depressive symptoms was 19.85% (20). In the meantime, anxiety is the ninth leading cause of disease and disability for adolescents aged 15–19 years and sixth for those aged 10–14 years globally (21). Previous Chinese studies have shown that the incidence of anxiety symptoms among Chinese adolescents ranges from 13.7 to 24.5% (22)

To date, only a few studies have drawn attention to the psychological impact of lockdown on Italian children's mental health. A recent study has examined the psychological effects of the quarantine in youth from Italy and Spain. Data were collected through a survey completed by parents and found that their children had different symptoms such as: difficulty concentrating (76.6 %), boredom (52 %), irritability (39 %), restlessness (38.8 %), nervousness (38 %), feelings of loneliness (31.3 %), uneasiness (30.4 %), and worries (30.1 %). Moreover, the results show that children of both countries used monitors more frequently, spent less time doing physical activity, and slept more hours during the quarantine (23)

A Chinese survey conducted during COVID-19 directly involved primary school students and reported higher rates of depressive (22.6 %) and anxiety (18.9 %) symptoms compared with the prevalence in other surveys.(24)

High school students (usually aged 15–18 years old) in China are a special group. The Chinese National College Entrance Exam, known as “GaoKao,” is the most important and the only criterion for entrance to Chinese universities, generating many depressive and anxious feelings to high school students, especially those grade three students (who are about to undergo this important test). The COVID-19 pandemic may worsen existing mental health problems among children and adolescents because of the unique combination of the public health crisis, social isolation, and economic recession (22)

Italy was the first European country to implement a national lockdown to contain the spread of severe coronavirus disease 19 (COVID-19) and related strict domestic quarantine policies.(25)

Another Italian study [13] suggested that during the lockdown children exhibited a marked delay in sleep timing and a mild worsening in sleep quality. They were less prone to respect daily routines or to keep track of the passage of time. An increase in emotional, conduct and hyperactive symptoms in children, together with regressive behaviours was reported, which was predicted by the change in sleep quality, boredom, and mothers' psychological difficulties.(26)

Compared to previous research conducted before the pandemic, this study found high levels of self-reported anxiety. The worldwide prevalence of any anxiety and depressive disorder among children according to Diagnostic and Statistical Manual (DSM) and International Statistical Classification of Diseases and Related Health Problems (ICD) was shown to be 6.5 and 2.6 % respectively.(22)

Spinelli , et al.(2020) reported an association between parents' perception of COVID-19 and their children's psychiatric symptoms during the quarantine. Their results showed that parents who reported high levels of stress were more likely to report more emotional problems in their children (23)

These findings are similar to what was reported in the current study where families whose income was affected by the pandemic reported higher change in the mental state of their children. Moreover, the study showed that higher levels of parental stress were related to more use of screens, less time of physical activity, and fewer hours of children's sleep. (19) These results were also replicated in the current study as we showed that punishment threats and child hitting, usually markers of parents' stress, were associated with a higher degree of restlessness as well as anxiety, as well as a higher number of hours spent watching TV by the children. Our results are also consistent with the results from a Chinese study which showed that one-quarter of school-age Chinese children reported depressive symptoms. The results also showed that 19% of them reported anxiety symptoms 34 days after the quarantine was imposed as a preventive measure against COVID-19 (21).

## **Rationale**

Many studies have found that children are more likely to experience depressive and anxiety symptoms than the other populations studied, as children and adolescent's people are more likely to fall behind on social activities and become socially isolated and depressed. Another study confirmed that COVID-19 has caused increased stress on families, especially children and adolescents who are vulnerable populations. Our findings show that the COVID-19 pandemic can

affect the mental health of children and adolescents in Saudi Arabia. We showed that parental stress is a predictor of psychiatric problems, which, if unaddressed, can cause child maltreatment and depressive and anxiety. Training parents and community healthcare providers to evaluate and address mental health problems in children and adolescents can act as the first line of support for parents and their children. As the battle continues against COVID-19, identifying and responding to mental health in children and adolescents is more important than before. By identifying mental health needs and possible interventions, the harmful medium-and long-term outcomes for individuals, families can be mitigated depressive and anxiety and the mental health issues that the COVID-19 pandemic has caused.

### **Aim of the study**

To assessment the Prevalence of Depression and Anxiety Symptoms of primary School Students during the COVID-19 Epidemic attending primary health care center in Makkah at Saudi Arabia 2022

### **Objectives**

- To assessment the Prevalence of Depression and Anxiety Symptoms of primary School Students during the COVID-19 Epidemic attending primary health care center in Makkah at Saudi Arabia 2022.

### **Methodology**

#### **Study area :**

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. Makkah has many hospitals in addition to King Abdullah Medical city which is tertiary center. 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, with 12 primary healthcare centers and Al-Zahir with 14 primary healthcare centers.

### **Study population:**

Primary School Students during the COVID-19 Epidemic attending primary health care center (3 or less years children) attending to primary health care center in Makkah Al-Mukarramah, throughout the period of the study and accept to participate in the study.

### **Study design :**

Cross-sectional, descriptive study .

### **Inclusion criteria:**

- All Saudi children have depression and anxiety Symptoms (males and females) attending in primary health care center in Makkah Al-Mukarramah.
- Parental who can write and read in Arabic Language.

### **Exclusion criteria:**

- Parental who refuse to participate in the study
- Persons who have reported severe mental disabilities.

### **Sample size:**

The total number of primary School Students attending the primary health care center in one month . Based on this information sample size was calculated using a website (raosoft.com). The resulted estimated sample size is 200 primary School Students. The confidence interval is 95% and margin of error is 5%. The estimated prevalence used is 50% to calculate maximum sample size.

### **Sampling technique**

Regarding health care center selection, there are three health care sectors inside Makkah Al-Mukarramah which are Al-Ka'akya, Al-Zahir and Al-Adl. By using simple random sample technique (by using randomizer.org), Al-Adl health care sector was selected. There are 12 primary health care centers under health care sector which was enumerated from 1 to 12. Again, by using simple random sample technique in primary health care center was selected (by using randomizer.org website). Regarding patients' selection, the total number visiting the clinic in PHC is 1900 per month and the sample size is 200. The data collection period is 30 days (four weeks minus weekends). Every day there are nearly 75 children attending in PHC in both section (male and female sections). To collect data from sample size, the researcher needs nearly 18 children per day to collect desired sample size. The researcher has been selecting every 4th patient to cover the sample size during data collection period .

**Data collection tool :**

The researcher has been use Students depression scale which is tool designed first to study the depression among geriatrics. The researcher was use the Arabic version of this tool since there is study conducted to validate the Arabic version. There are two types from this tool the long version with 30 questions and short form with 15 questions. The researcher has been use the short form with the 15 questions. The questionnaire has been having three parts. The first part has been containing questions about socio-demographic data. The second part has been the short-translated form. The third part has been about possible risk factors .

**Data collection technique:**

The researcher has been use Arabic version of the questionnaire since the target populations are Saudi children. The questionnaire has been distributed to all patients attending in primary health care center during the data collection period (which is 30 days initially). The questionnaire has been distributed equally between male and female section because it is separate departments. The researcher was train 2 nurses in order to optimize the inter rater reliability. The researcher has been select the patients in the waiting area and give them the questionnaire in the waiting area in male section then waiting them to complete it and after that I has been collecting it from them while in female section, has been trained nurse was do the same in female waiting area. After that, the researcher was collecting the paper daily from the nurse for data entry and analysis after thanking the participants for their precious time and effort .

**Data entry and analysis**

Statistical analysis has been performed using SPSS software program (Statistical Package for Social Sciences), version 24.0. Descriptive using listing and frequency and analytic statistics using chi-square test and t-test to analyse the association and the difference between two categorical variables or using other statistical tests if needed. P value less than 0.05 as level of significance.

**Pilot Study**

A pilot study on 25 participants representing 10% of study sample size (out of study area) has been conducted to explore methodology tool and environment and plan to overcome these problems.

**Ethical considerations**

- Permission from research committee in the joint program of family medicine in Makkah Al-Mukarramah has been obtained
- Permission from the Makkah joint program of family medicine has been obtained.



- Permission from the Directorate of Health Affairs of the Holy Capital Primary Health Care has been obtained.
- Permission from administration of public health in Makkah Al-Mukarramah has been obtained.
- Written consents from all participants in the questionnaire have been obtained.
- All information will be confidential, and a result has been submitted to the department.

## Budget

The research has been self-funded

**Table 1.** Distribution of the demographic characteristics of the Parental participants (n=200)

	N	%
<b>Parental age</b>		
19-30	30	15.00
31-40	40	20.00
41-50	88	44.00
>50	42	21.00
<b>Sex</b>		
Male	136	68.00
Female	64	32.00
<b>Education</b>		
Secondary school	56	28.00
Diploma	62	31.00
Bachelor's degree	40	20.00
University	42	21.00
<b>Relatives/neighbors infected with Corona</b>		
Yes	110	55.00
No	90	45.00
<b>Marital status</b>		
Married	68	34.00
Divorced	40	20.00
Widow	92	46.00
<b>Family income</b>		
Low	42	21.00

Middle	68	34.00
High	90	45.00
<b>Occupation</b>		
Unemployed	54	27.00
Student	16	8.00
Part-time	62	31.00
Full-time	44	22.00
Retired	24	12.00
<b>Number of children</b>		
One child	24	12.00
Two children	56	28.00
Three to five children	80	40.00
More than five	40	20.00
<b>Economic status (Riyals)</b>		
Less than 5000	80	40.00
From 5000 to 10000	76	38.00
From 10000 to 15000	30	15.00
More than 15000	14	7.00

Table 1 show regarding the age majority of the study groups were in the age 41-50 were (44.0%) followed by age >50 years were (21.0%) but the 31-40 years were (20.0%), regarding the sex many of the respondents were male (68.0 %) while female were (32.0%). Regarding the education status, the majority of the respondents had Diploma were (31.0%) followed by Secondary school were (28.0%) but university were (21.0%), regarding the Relatives/neighbors infected with Corona the majority of the respondents answer Yes were (55.0%) followed by No were (45.0%), regarding the Marital status the majority of the respondents widow were (46.0%) followed by married were (34.0%), regarding the Family income the majority of the respondents high were (45.0%) followed by middle were (34.0%), regarding the Occupation the majority of the respondents Part-time were (31.0%) followed by Unemployed were (27.0%), but Full-time were (22.0%), regarding the Number of children the majority of the respondents three to five children were (40.0%) followed by two children were (28.0%), regarding the Economic status (Riyals) the majority of the respondents Less than 5000 were (40.0%) followed by From 5000 to 10000 were (38.0%).

**Table 2 . Distribution of the demographic characteristics of the children participants**

	N	%
<b>Age of child</b>		
3 or less years	64	32.00
4–5 years	88	44.00
6–11 years	48	24.00
<b>Family took any action to keep the child busy during Corona lockdown</b>		
Yes	50	25.00
No	150	75.00
<b>Child acting normal as before lockdown</b>		
Yes	90	45.00
No	110	55.00
<b>Family is busy with work during lockdown</b>		
Yes	144	72.00
No	56	28.00
<b>Threatened child with punishment for improbity during lockdown</b>		
Yes	90	45.00
No	110	55.00
<b>Family member screamed at a child during lockdown</b>		
Yes	86	43.00
No	114	57.00
<b>Family member hit a child during the lockdown</b>		
Yes	150	75.00
No	50	25.00

Table 2 show regarding age of child majority of the study groups were in the age 4-5 were (44.0%) followed by age 3 or less years were( 32.0% ) but the 6-11 years were (24.0%), regarding Family took any action to keep the child busy during Corona lockdown many of the respondents were answer No were (75.0 %) while Yes were (25.0%). Regarding Child acting normal as before lockdown the majority of the respondents answer Yes were (45.0%) followed by No were(55.0%) , regarding the Threatened child with punishment for improbity during lockdown majority of the

respondents answer No were (55.0%) followed by Yes were (45.0%), regarding the Family member screamed at a child during lockdown the majority of the respondents answer No were (57.0%) followed by Yes were (43.0%), regarding the Family member hit a child during the lockdown majority of the respondents answer Yes were (75.0%) followed by answer No were (25.0%).

**Table 3: Distribution of depression and anxious symptoms in the children participants during the pandemic**

	N	%
My child cries easily	134	67.00
My child is angry	74	37.00
My child asks about death	44	22.00
My child feels frustrated	66	33.00
My child is bored	80	40.00
My child is irritable	70	35.00
My child has sleeping difficulties	120	60.00
My child has no appetite	98	49.00
My child is easily alarmed	70	35.00
My child has difficulty concentrating	68	34.00
My child is afraid of COVID-19 infection	82	41.00
My child is very dependent on us	98	49.00
My child has physical complaints (headache, stomach ache .)	68	34.00
My child has behavioral problems	46	23.00
My child eats a lot	90	45.00
My child worries when one of us leaves the house	44	22.00

Table 3 show depression and anxious symptoms in the children participants during the pandemic regarding My child cries easily of child majority of the study were (67.0%) but My child is angry were (37.0%), regarding My child asks about death many of the respondents were (22.0 %) while My child feels frustrated were (33.0%). Regarding My child is bored the majority of the respondents were (40.0%) followed by My child is irritable were(35.0%) , regarding the My child

has sleeping difficulties majority of the respondents were (60.0%) followed by My child has no appetite were (49.0%), regarding the My child is easily alarmed the majority of the respondents were (35.0%) followed by My child has difficulty concentrating were (34.0%), regarding My child is afraid of COVID-19 infection majority of the respondents were (41.0%) followed My child is very dependent on us were (49.0%). Regarding the child has physical complaints (headache, stomach ache.) the majority of the respondents were (34.0%) followed by My child has behavioral problems were (23.0%), regarding My child eats a lot the majority of the respondents were (45.0%) followed by My child worries when one of us leaves the house were (22.0%).

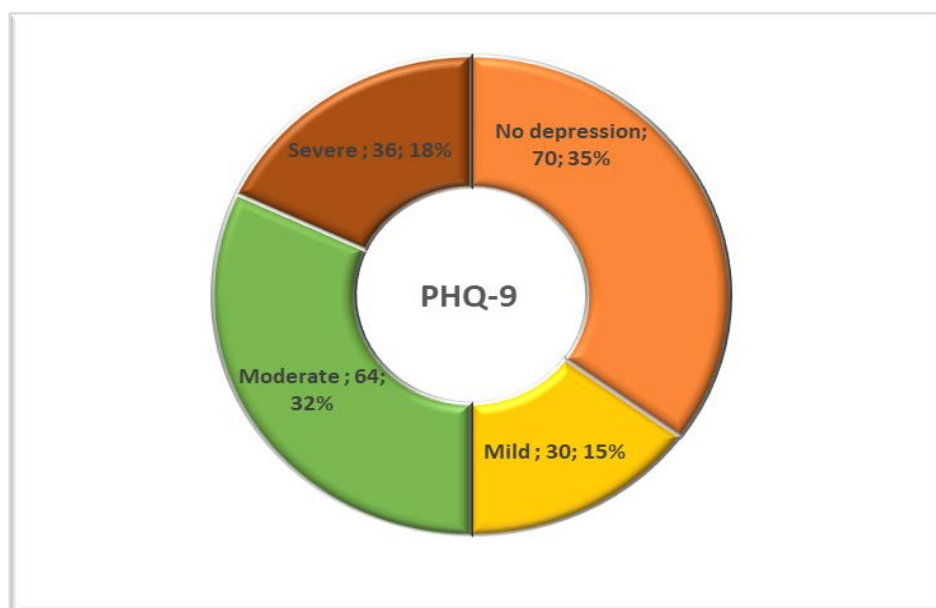
**Table 4: Distribution of depression and anxiety Symptoms of primary School Students during the COVID-19 Epidemic .**

Variables	N	%	Chi-square	
PHQ-9			X <sup>2</sup>	P-value
No depression	70	35.00	23.84	<0.001*
Mild	30	15.00		
Moderate	64	32.00		
Severe	36	18.00		
Anxious symptoms				
No anxious	82	41.00	50.08	<0.001*
Mild	56	28.00		
Moderate	50	25.00		
Severe	12	6.00		

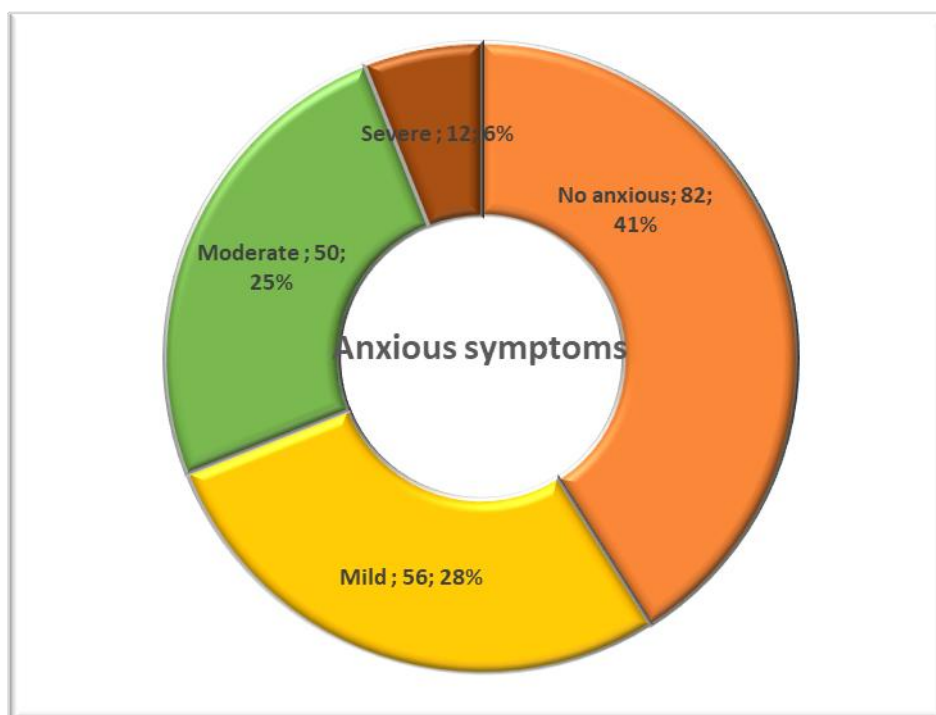
Table 4 show that regarding the depression by PHQ-9 the majority of participants have No depression were (35.0%) while Moderate depression were (32.0%) also Severe depression were (18.0%) while mild depression(15.0) while is a significant relation in the depression were P-value=0.001and X<sup>2</sup> 23.84.

Regarding the anxious the majority of participants have No anxious were (41.0%) while Mild anxious were (28.0%) also Moderate anxious were (25.0%) while severe anxious (6.0) while is a significant relation in the anxious were P-value=0.001and X<sup>2</sup> 50.08.

**Figure (1) Distribution of depression of primary School Students during the COVID-19 Epidemic .**



**Figure (2) Distribution of anxiety Symptoms of primary School Students during the COVID-19 Epidemic .**



## Discussion

This is the first study to directly investigate, to assessment the Prevalence of depression and anxiety Symptoms of primary School Students during the COVID-19 Epidemic attending primary health care center in Makkah at Saudi Arabia 2022. Saudi Arabia was, also Makkah the most highly affected ceity at the time, with the pandemic spreading very fast around word, one of the

most involved cities. In our study there were 200 participants show regarding the age majority of the study groups were in the age 41-50 were (44.0%), the sex many of the respondents were male (68.0 %) while female were (32.0%), the education status majority of the respondents had Diploma were (31.0%), regarding the Relatives/neighbors infected with Corona the majority of the respondents answer Yes were (55.0%). Marital status the majority of the respondents widow were (46.0%), the Family income the majority of the respondents high were (45.0%), majority of the respondents Part-time were (31.0%), regarding the Number of children the majority of the respondents three to five children were (40.0%) (See table 1)

Findings in the current study suggested that children and in severe area suffer from major Depression and Anxiety Symptoms distress during the outbreak . in our result show that regarding the depression by PHQ-9 the majority of participants have No depression were (35.0%) while Moderate depression were (32.0%) also Severe depression were (18.0%) while mild depression(15.0) while is a significant relation in the depression were P value=0.001and X2 23.84. Regarding the anxious the majority of participants have No anxious were (41.0%) while Mild anxious were (28.0%) also Moderate anxious were (25.0%) while severe anxious (6.0) while is a significant relation in the anxious were P-value=0.001and X2 50.08.(See table 4)

This finding is not consistent with findings in previous studies on the psychological impact of health-related pandemic disasters where 30% of quarantined children and 25% of their quarantined parents experienced severe psychological trauma (27). During the time of the data collection, the COVID-19 outbreak is gradually under control. Thus, it is possible that people's psychological distress was gradually alleviated as sense of stability was restored. Moreover, with more and more online mental health services made available

to help people quarantined at home, it may also help them better maintain their psychological status and provide strategies to promote positive family interactions (28). Besides, home quarantine could provide a good opportunity to foster positive interactions between children and their parent, and such mutual companionship may also to some extent help relieve their psychological distress (29)

In addition, Imran et al. (2020) some obvious differences were found in the levels of psychological distress between children and their parent. Specifically, children experienced significantly higher levels of anxiety than their parent, but significantly lower levels of depression and PTSD. First, these differences may be because of the differences in children and their parent's levels of cognitive development. As children's cognitive ability are still developing, they may be more anxious because they have limited understanding of the outbreak and access to coping strategies. Moreover, they may not be able to process all the information they have access to and communicate their feelings like their parents (27). Depression and Anxiety of children and their parent, demographic variables and media exposure in relation to the psychological status of families in Saudi Arabia

were further explored, our results the same effects were not found for children. The differences in social roles and resource allocation may explain the effect of gender. Parents need to balance their responsibilities for family and work. School closures have undoubtedly increased the needs for childcare to a great extent and the social norms around the gendered division of housework and childcare may explain why the psychological impacts were larger for women than men (30). Consistently, in another study conducted during the COVID-19 outbreak, women were also found to be at a higher risk of depression and higher levels of psychological stress than men. Children were equally stressed and anxious as a result of social isolation, as resources normally available to them through schools were no longer accessible due to school closures with little difference across child gender.(31) Moreover, the psychological impact on children did not differ across age. This is not consistent with a recent study where younger adults were found to have higher rates of anxiety and depression during outbreaks , or other previous studies with similar findings (21)

Children in the current study were all from primary schools. Thus, the distribution of age is relatively concentrated. To better understand the influence of age on people's psychological Status during a pandemic, future study should include children from a wide age range.

## Conclusions

During the COVID-19 outbreak, children and their parents in no severely impacted areas did not suffer major psychological distress, although there were differences between children and their parents in their levels of psychological distress Recent studies suggested that effective communication and positive family interaction provide basis for family members to take care of each other and protect from the depression and anxiety Symptoms and their mental health. Our findings also identified risk and positive factors for depression and anxiety Symptoms also mental health that can be used to inform psychological interventions to improve the mental health of vulnerable groups during the pandemic .

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