



## Research article

## The psychological distress and COVID-19 pandemic during lockdown: A cross-sectional study from United Arab Emirates (UAE)

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## ABSTRACT

**Background:** The pandemic resulted in the societal changes as conflicts and instability were the common concerns experienced by families because of the lockdown. However, the psychological impact of the COVID-19 on the United Arab Emirates (UAE) population is not studied extensively.

**Objective:** The study evaluates the psychological impact of lockdown during the pandemic on the people in the UAE.

**Material and methods:** This study was cross-sectional in nature and was conducted using a questionnaire consisting of 35-items. The questions were related to social, psychological, and personal aspects. Multivariate Linear regression was used to find the outcomes between independent variables.

**Results:** The mean value of social phobia was  $2.56 \pm .620$ , followed by the mean score of anxiety ( $2.47 \pm .666$ ), stress ( $2.44 \pm .631$ ), and depression ( $2.42 \pm .682$ ). The higher the respondents experienced the scores, the more depression, anxiety, and stress. Demographics such as marital status, age, and occupation and education level have a statistically significant association with social phobia, anxiety, depression, and stress.

**Conclusion:** The study concludes that the lockdown more psychologically impacted males, older people, and unemployed individuals during the pandemic.

## 1. Introduction

The COVID-19 pandemic has caused unparalleled damage to mental health globally, with high rates of reported anxiety, psychological distress, depression, stress, and post-traumatic stress disorder among the population [1]. Different levels of anxiety, stress and depression, linked with COVID-19 were reported in multi-national populations across North America, Europe, and Asia [2]. In developing countries, adverse effects of mental health due to COVID-19 were significantly high among people below thirty years old, in women, either single or separated, people with high educational background, having contact with other COVID-19 patients, and discrimination faced by other countries [3, 4]. However, the government's prompt and stringent actions to decrease the spread of COVID-19 significantly reduced the adverse impact on mental health, especially depression among the residents [5]. At the same time, the worst outcomes due to depression during COVID-19 caused higher

hospital admission and mortality [6]. Countries that enacted immediate action plans and provided security to the people experienced reduced suicide rates [7].

These lockdown and quarantine outcomes, regardless of physical woes, are many bending on the mental health and well-being at individual levels. However, at the community level, the using of a face mask during COVID-19 can safeguard better mental and physical health [8]. Also, national social distancing also harmed the household income, as in Vietnam, around 70% of households reported reduced income, and overall health-related quality of life decreased [4, 9]. Other healthcare issues due to this pandemic include an increase in back pain [10], decreased physical exercise [11], a decrease in the quality of life [12], and a sense of chaos [13]. Due to loss of control and a sense of getting cornered, countrywide lockdown programs can generate anxiety, distress, and mass hysteria. These consequences can upsurge if individuals and families need isolation due to financial losses, increased

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risk perception, inadequate supply of essential goods and services, and uncertainty of disease development, often overwhelmed by insufficient evidence and imprecise communications via media [14, 15, 16].

Earlier pandemics have highlighted the psychological effects of quarantine that can differ from instant results such as spreading the infection to family members, denial, anxiety, despair, irritability, fear of contracting, anger, frustration, confusion, loneliness, and depression [17, 18]. Anticipated confinement cases may experience anxiety because of uncertainty regarding their health status and develop obsessive-compulsive symptoms, including sterilization and repeated temperature checks [19]. Previous studies have reported the effects, including post-traumatic stress disorder, of which symptoms were positively correlated with the quarantine duration [16]. Psychological symptoms and socioeconomic distress might be encompassed within post-quarantine psychological effects [14]. Some of the studies have focused on some common psychological problems like stress, irritability, depression, emotional disturbance, and post-traumatic stress symptoms during the outbreak of Severe Acute Respiratory Syndrome (SARS) in 2003 and the Middle East respiratory syndrome coronavirus in 2012 [20, 21]. However, the psychological effect of the COVID-19 is considered profound compared to SARS and MERS-CoV because of increased global connectivity, social media exposure, long quarantine durations, and increased transmission rates [22].

The first positive COVID-19 case in the United Arab Emirates (UAE) was reported on 23rd January 2020 [23]. As of Sept 2020, 94,190 confirmed cases and 419 deaths were reported in the UAE [24]. High occurrence of anxiety and depression has been indicated among primary health care attendees [25]. A program was launched by the Ministry of Health and Prevention in the UAE during the pandemic outbreak, given the occurrence of mental health disorders for facilitating those with psychological anxiety or issues [26]. Due to the pandemic, the UAE government closed all educational institutes from 2<sup>nd</sup> March 2020, and the churches and mosques proclaimed temporary closure in the mid of March [27]. A ban on public gatherings followed this. Therefore parks, tourist spots, and beaches were closed as well. At the end of March, the government suspended flights, shut down malls, unblocked communication apps such as Google hangout and Skype, and imposed a night curfew; all of this was done to make people stay at home [27].

Most people in the community conceal their illness and fail to seek psychological treatment promptly because of the fear and social stigma associated with the pandemic [28]. COVID-19 patients have reported adverse and high psychological impact compared to psychiatric patients and healthy individuals, with the majority having clinical symptoms of post-traumatic stress disorder (PTSD) [29]. At community level, psychological symptoms linked with COVID-19 emerge as anxiety-driven panic purchasing, culminating in-market resource depletion [30] due to the lack of vital protective equipment, notably masks and sanitizers [31]. As a result, mental health problems are likely to increase among the inhabitants of the community.

Few of the previous studies have also reported a decrease in the psychological well-being of children due to the adverse impact of the perceived problem of lockdown on parental stress [32, 33, 34]. Spinelli et al. [33] stated that parents were experiencing increased stress due to difficulties dealing with quarantine, which resulted in increased behavioral and emotional problems among children. A study reported 28.3% of adolescents with anxiety and 30% with depression due to sleep disorder during the pandemic [35]. Similarly, students with infected relatives or pessimistic attitudes towards pandemics also reported high psychological issues [36].

A program titled as Hayat (life) program was launched by the ministry of health and prevention in the UAE to provide support to individuals experiencing mental health problems therefore, a helpline was dedicated for counseling to help those individuals having psychological concerns knowing the prevalence of mental health problems in the country in the light of the on-going pandemic [26]. Quarantine and home-confinement strategies have triggered psycho-social impact majorly on the UAE

population during COVID-19 [37]. Alternatively, some have sought this to benefit from developing bonds and better support between family members [38]. Extended family, in the UAE, is termed a pillar of society and, thus, has the competence to deteriorate the adverse effects of such a health crisis. Nevertheless, there lacks evidence regarding the impact of the COVID-19 outbreak on the psychological circumstances of the UAE population. Therefore, the study aims to evaluate the effect of the COVID-19 lockdown on the psychological states of the population in the UAE.

## 2. Material and methods

### 2.1. Design and study participants

This study is cross-sectional in nature and was conducted from July 2020 to September 2020. The active COVID-19 cases from 1<sup>st</sup> July 2020 to 30<sup>th</sup> September 2020 decreased from 10,593 to 10,047 [25]. All the 7 emirates in the UAE were targeted to recruit participants in this study. Participants included met the following criteria: (1)  $\geq 18$  years; (2) residents of the UAE; and (3) undergone isolation or quarantine. Those participants were excluded who submitted incomplete questionnaires. They were unpaid and voluntary. Participants had to provide their informed consent before the commencement of the study. A convenience sampling method was used to electronically invite the participants to participate in the study. This method confirms large-scale recruitment and distribution of participants. Based on this invitation, a total of 1002 participants who were eligible responded to the web-based survey. 618 (61.7%) participants responded and provided consent to participate, while 384 (38.3%) participants refused to participate. All study procedures followed the ethical standards and were approved by the Ethics Committee of Ajman University, Ajman, United Arab Emirates.

### 2.2. Instrument

This study has reviewed multiple validated and pre-defined scales to measure the psychological impact of COVID-19 on the UAE population. These scales include the Generalised Anxiety Disorder Scale (GAD-7) [39], General Health Questionnaire by the WHO [40], and Depression Anxiety Stress Scale (DASS-21) [41]. The DASS-21 was validated in different countries and ethnic groups during the pandemic, for example, China [41, 42], Spain [41], the US [43], Poland [8], Iran [44], Philippines [45], and Vietnam [46]. A new scale was developed to measure the study objective based on these scales. At the same time, the GAD-7 has shown good psychometric properties, which includes sensitivity and specificity for diagnosing GAD [39]. In an earlier study [39], the optimal balance between sensitivity and specificity for the GAD diagnosis was found to be a cut-off point of  $\geq 10$ . The GAD-7 has an excellent internal consistency, and the one-factor structure in a heterogeneous clinical population is also well-supported [47].

The questionnaire was given in two languages, Arabic and English and was prepared on Google Forms. A pilot study was conducted to test for further clarification on a sample of 30 participants before conducting the actual survey. Minimal adjustments were made to the items of the questionnaire to confirm understandability. The survey was retrieved through a uniform resource locator (URL) to distribute it formally and informally using email invitations and social media platforms. An information sheet was also included on the first page of the questionnaire, and the participants were asked to give their consent before completing the questionnaire. They were also informed that if they wanted, they could leave the survey at any point without any need for explanation. Furthermore, they were also told that no personal information was required to maintain confidential information. After receiving the responses from the Google Forms the response rate was calculated which was 61.7%. Finally, all the responses were downloaded as an Excel file and secured using a password-protected laptop.

### 2.3. Questionnaire survey

The questionnaire was divided into five different sections (35 items):

- Section 1 presents socio-demographic information such as gender (male, female), educational status (less than secondary, secondary, university level, and masters or Ph.D.), marital status (married, single, divorced, and widow), and occupation (government employee, private employee, student, businessperson, unemployed, and retired).
- Section 2 consists of items related to social phobia. Social phobia is a kind of anxiety disorder that results in extreme fear of social events. This factor is covered with eight items (1, 2, 3, 6, 14, 18, 28, 29).
- Section 3 consists of items related to anxiety. Generally, anxiety is defined as a normal emotion that increases physical signs, alertness, and fear. In the COVID-19 context, anxiety is represented as anger, fear, worry, numbness, sadness, or frustration. This factor is covered with ten items (4, 5, 7, 8, 10, 11, 12, 15, 25, 30).
- Section 4 consists of items related to stress. Stress is a feeling of physical or emotional tension. This factor is also covered with ten items (13, 16, 19, 20, 21, 23, 24, 26, 31, 33).
- Section 5 comprises of depression factor, covering seven items (9, 17, 22, 27, 32, 34, 35).

Sections 2-5 were measured on a 4-point Likert scale where 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. The scores for social phobia, anxiety, and stress were added; the higher the score, the higher social phobia, anxiety, and stress were considered.

### 2.4. Validity and reliability

The questionnaire validation was made by sending it to 10 different arbitrators educational experts specializing in psychology, language, and measurement. The questionnaire consisted of 39 items. Based on the experts' suggestions, four items were deleted. Therefore, the final form of the questionnaire consisted of 35 items. Using data from the pilot study, consistency validity was tested by the correlation coefficients ranging from social phobia (0.645–0.758), anxiety (0.734–0.821), depression (0.743–0.823), and stress (0.710–0.790), which were all statistically significant. Similarly, the questionnaire reliability was calculated using Cronbach alpha. The Cronbach coefficient for social phobia was (0.743), for anxiety (0.783) for stress (0.805), and depression (0.753) which makes it highly reliable.

### 2.5. Statistical analysis

The distribution of socio-demographic characteristics of participants was calculated using frequency and percentage. To assess the reliability of the items in the survey, Cronbach's Alpha was used. Pearson correlation coefficients were calculated to examine construct validity between the psychological factors (depression, anxiety, social phobia, and stress). Construct validity was measured on the basis of the strength of correlation coefficient values:  $r > 0.60$  "strong",  $r = 0.30$ – $0.59$  "moderate", and  $r < 0.30$  "weak" [48].

Later on, a Statistical Package for Social Sciences (SPSS) version 26.0 was used to carry out the descriptive and inferential analyses; continuous data were presented through means  $\pm$  SD while categorical data were presented through n (%) for all responses. Overall, scores for depression, anxiety, stress, and social phobia were reported as means  $\pm$  SD for all participants. Normality tests were conducted using Shapiro–Wilk test to identify whether the data set was well-modeled based on a normal distribution. As the data were normally distributed, parametric tests were used. Also, independent t-tests and ANOVA were used to compare the means where required. Multivariate linear regression analysis was used to assess the determinants of depression, anxiety, social phobia, and stress scores.  $P < 0.05$  was considered to indicate statistically significant outcomes.

## 3. Results

### 3.1. Socio-demographic details of the participants

Out of a total of 618 participants, most were females (61.3%), and 38.7% of the participants were males. Most of the participants were 18–25 years old (45.6%), married (49.0%), had completed a university degree (74.9%), and were students (36.7%) (Table 1).

The means of social phobia, depression, anxiety, and stress scores for all the study participants are shown in Table 2. The mean score of social phobia was  $2.56 \pm 0.620$ , followed by the mean score of anxiety ( $2.47 \pm 0.666$ ), stress ( $2.44 \pm 0.631$ ), and depression ( $2.42 \pm 0.682$ ). The higher the respondents experienced the scores, the more depression, anxiety, and stress. Demographic characteristics with statistically significant associations with social phobia scale were marital status, age, occupation and education level ( $p < 0.001$ ). Similarly, the depression items were statistically significantly associated with marital status, education level, age and occupation ( $p < 0.001$ ) (Table 3).

Multivariate linear regression analysis was utilized for testing whether demographics significantly predicted social phobia, anxiety, stress, and depression scores (Table 4). Parallel to the previous scales, the other two scales such as anxiety and stress were significantly related with the said demographic characteristics (Table 3). A more significant variability of 9% was shown in anxiety and depression scores, while social phobia scores showed a minor variance (2%). Significant predictors were marital status for stress and depression scores. Other demographics failed to show any considerable prediction on any of the scales.

## 4. Discussion

A new tool to measure the social phobias, anxiety, depression and stress related to the pandemic outbreak has been designed and prepared by this study. This prospective cross-sectional study involved 618 participants selected conveniently to explore the psychological effects of

**Table 1.** Socio-demographic details (n = 618).

Variables	Items	n (%)
<b>Gender</b>	Male	239 (38.7)
	Female	379 (61.3)
<b>Age</b>	18–25	282 (45.6)
	26–35	162 (26.2)
	36–45	92 (14.9)
	46–55	58 (9.4)
	>55	24 (3.9)
<b>Marital status</b>	Married	303 (49.0)
	Single	289 (46.8)
	Divorce	19 (3.1)
	Widow	7 (1.1)
<b>Education level</b>	Master or PhD	99 (16.0)
	University level	463 (74.9)
	Secondary	47 (7.6)
	less than Secondary	9 (1.5)
<b>Occupation</b>	Government employee	194 (31.4)
	Private employee	71 (11.5)
	Student	227 (36.7)
	Business	25 (4.1)
	Unemployed	101 (16.3)
	Retired	0 (0)

**Table 2.** Mean of Social phobia, depression, anxiety, and stress scores for all participants.

	N	Mean	Std. Deviation
Social Phobia	618	2.56	0.620
Anxiety	618	2.47	0.666
Stress	618	2.44	0.631
Depression	618	2.42	0.682

COVID-19 on population of UAE during the lockdown. Social phobia (2.56 ± 0.620) was the most occurred psychological factor among the UAE population based on the mean score. Anxiety came in second place with (2.47 ± 0.666) and stress with (2.44 ± 0.631), and depression with (2.42 ± 0.682). Precisely, social phobia was more dominant among those quarantined or isolated compared to those with anxiety, stress, and depression. Similar findings were also reported in the previous studies conducted in Middle Eastern countries [49, 50]. Social phobia has been explained in previous infectious respiratory diseases, including MERS-CoV and SARS [51]. Phobia towards those who have been recovered from the virus, presumed to be affected, or perhaps undergoing

treatment, has been thoroughly explained in the extant literature, specifically in underdeveloped countries [52].

Similarly, an online survey carried out among Saudi individuals during the pandemic showed mild to moderate anxiety and stress levels, with married respondents reporting a considerably high degree of anxiety [53]. In line with this, another online Depression Anxiety and Stress Scale-21 (DASS-21) survey in Bahrain revealed that one-third of the population experienced depression and stress symptoms [49]. Other studies also reported depression and anxiety related to COVID-19 (using DASS-21) in Poland [8], China [41], the US [43], Iran [44], Philippines [45], Vietnam [46], and Spain [54].

Similarly, during the 4<sup>th</sup> week of the quarantine, Lebanese people reported an increase in Post-Traumatic Stress Disorder (PTSD) symptomatology [55]. The level of stress, anxiety, social phobia, and depression reported in the current study were less than those reported in China, where more than half of the population experienced moderate-to-severe psychological effects during the outbreak of the virus [41]. A similar study in Egypt also reported moderate to severe adverse psychological effects among more than half of the Egyptian population [56]. Different levels of fear are experienced by diverse people worldwide, depending on the intensity of disease spread, government regulations, and previous

**Table 3.** Link between demographics and questionnaire factors.

Variables	Social Phobia Mean (SD)	p	Depression Mean (SD)	p	Anxiety Mean (SD)	p	Stress Mean (SD)	P
<b>Gender</b>		0.091		0.355		0.056		0.367
Male	2.62 (0.601)		2.45 (0.664)		2.53 (0.630)		2.47 (0.585)	
Female	2.53 (0.630)		2.40 (0.694)		2.43 (0.680)		2.42 (0.659)	
<b>Age</b>		<0.001		<0.001		<0.001		<0.001
18–25	2.62 (0.628)		2.45 (0.687)		2.53 (0.666)		2.50 (0.635)	
26–35	2.49 (0.602)		2.36 (0.669)		2.33 (0.687)		2.37 (0.629)	
36–45	2.49 (0.655)		2.38 (0.711)		2.48 (0.651)		2.37 (0.652)	
46–55	2.60 (0.511)		2.44 (0.629)		2.53 (0.587)		2.45 (0.501)	
>55	2.57 (0.706)		2.45 (0.746)		2.56 (0.666)		2.48 (0.771)	
<b>Marital status</b>		<0.001		<0.001		<0.001		<0.001
Married	2.55 (0.614)		2.34 (0.653)		2.43 (0.660)		2.37 (0.612)	
Single	2.58 (0.631)		2.50 (0.711)		2.52 (0.667)		2.51 (0.652)	
Divorced	2.57 (0.565)		2.38 (0.594)		2.49 (0.757)		2.48 (0.516)	
Widow	2.46 (0.648)		2.20 (0.621)		2.17 (0.581)		2.38 (0.686)	
<b>Education level</b>		<0.001		<0.001		<0.001		<0.001
Master or PhD	2.54 (0.619)		2.42 (0.647)		2.47 (0.598)		2.44 (0.544)	
University level	2.56 (0.604)		2.42 (0.681)		2.47 (0.673)		2.44 (0.635)	
Secondary	2.55 (0.687)		2.24 (0.659)		2.32 (0.634)		2.32 (0.647)	
less than Secondary	3.30 (0.690)		3.07 (0.923)		3.13 (0.869)		3.15 (0.877)	
<b>Occupation</b>		<0.001		<0.001		<0.001		<0.001
Government employee	2.60 (0.606)		2.44 (0.660)		2.52 (0.662)		2.45 (0.623)	
Private employee	2.48 (0.629)		2.21 (0.715)		2.33 (0.637)		2.24 (0.619)	
Student	2.55 (0.635)		2.42 (0.705)		2.47 (0.687)		2.43 (0.628)	
Business	2.54 (0.468)		2.62 (0.636)		2.48 (0.573)		2.54 (0.573)	
Unemployed	2.59 (0.642)		2.44 (0.642)		2.47 (0.661)		2.54 (0.658)	

**Table 4.** Effect of Socio-demographic characteristics on indices of psychological status for all participants.

	Social phobia (Adjusted R <sup>2</sup> = 0.002)		Anxiety (Adjusted R <sup>2</sup> = 0.009)		Stress (Adjusted R <sup>2</sup> = 0.006)		Depression (Adjusted R <sup>2</sup> = 0.009)	
	Coefficient (95% CI)	p	Coefficient (95% CI)	p	Coefficient (95% CI)	P	Coefficient (95% CI)	P
Gender	-0.094 (-0.199 to 0.022)	0.082	-0.115 (-0.228 to -0.002)	0.046	-0.086 (-0.193 to -0.021)	0.115	-0.081 (-0.197 to 0.035)	0.169
Age	-0.002 (-0.006 to 0.003)	0.498	0.006 (-0.004 to 0.005)	0.887	-0.002 (-0.006 to 0.003)	0.498	0.003 (-0.005 to 0.004)	0.864
Marital status	0.017 (-0.065 to 0.100)	0.682	0.056 (-0.033 to 0.145)	0.215	0.084 (0.000–0.168)	<0.001	0.090 (-0.001 to 0.181)	<0.001
Education level	-0.011 (-0.045 to 0.024)	0.535	0.005 (-0.032 to 0.042)	0.796	-0.012 (-0.047 to 0.023)	0.500	-0.012 (-0.050 to 0.026)	0.531
Occupation	0.004 (-0.033 to 0.041)	0.819	-0.004 (-0.044 to 0.036)	0.832	0.027 (-0.011 to 0.064)	0.166	0.010 (-0.030 to 0.051)	0.617

outbreaks like SARS, MERS CoV, and Ebola. These factors could strengthen the impact of the Pandemic [40]. In the current study, most of the participants experienced social phobia, depression, anxiety, and stress due to the pandemic. The evidence from the previous research has also indicated a relationship between despair and depression and the importance of depressed people's particular sensory processing processes in deciding adverse outcomes [57].

There lacks significant evidence toward the process underlying gender differences in the vulnerability to the psychological disorders. On the contrary, some evidence suggests that variations in greater brainstem activation and ovarian hormone levels may contribute to more extraordinary PTSD among women [58, 59]. Furthermore, the literature suggests that greater access to information via social media can produce anxiety and stress amongst the younger population [60]. The literature has reported contrasting evidence regarding the possible association between PTSD and education level. Some evidence recommends that individuals use better-coping tactics with a higher education level and get less affected by the environmental disaster [61, 62]. Others recommend that highly educated individuals might be more stressed about the pandemic extremeness [63].

Males and the elderly were more concerned about the COVID-19 pandemic and were interested in gaining the statistics associated to the incidence of COV-19 cases and mortality rate. The majority of the participants were married (49%), which is somewhat comparable to another study conducted in UAE in which 68% were married. Married personnel was found to have a fear of losing their job. This is probably due to the reason that they have to run the whole family. Unemployed individuals were found depressed on finding news about death. Roy et al. [28] from India observed that 80 percent of the people were anxious with the thoughts of COVID-19, and 72 percent reported the strict use of preventive measures because of fears which are dissimilar to the study findings.

Studies revealed the gender disparities and observed the males compared to females at risk. One of the suggested mechanisms of such inequality is the reluctant behavior of men to seek medical advice for any health problem [59]. A similar trend was observed for the COVID-19 diagnostic test. The majority of the males were more afraid to go for the test than females, and they were more concerned about vaccine development.

The study findings have shown that one-third of the study participants developed increased stress from work, financial matters, and home during the pandemic. The results were in line with a previous study on the Egyptian population [57]. The contributing factors were the lockdowns on work-family balance, daily life and routine, lack of financial support, and effects of the pandemic [64]. Furthermore, many working parents have gone full-time from home and looked after their families at the same time due to the lockdown. Moreover, both genders were entirely dissatisfied with their increased stress from home matters and work-family balance during the COVID-19 outbreak. In addition, prolonged school closure, uncertainty about examination and enrollment, and online education support negatively affected families [65]. Workplace policies and governments could encourage work-family life balance by enabling the right to request feasible working hours, the option to work from home, and request part-time work [66].

Based on previous studies, psychotherapy helped to improve psychological symptoms [67, 68, 69]. The most evidence-based treatment is cognitive behavior therapy (CBT), especially Internet CBT that can stop the spread of infection during the pandemic [67]. Internet CBT is a cost-effective and less risky method during the pandemic and is effective in insomnia which was highly reported during the pandemic [68, 69].

The mean age of participants was 31 years. However, a study reported contrary findings, and the mean age in their study was 51 years [70]. Females were the majority in the number who responded to the survey questionnaire (61%) in our research, which is in line with the findings of Cheikh Ismail et al. [71], comparable to the results of Baloch et al. [72], and more significant than the study by Schäfer et al. [70]. The majority of

the participants were graduates (75%). This is greater than the percentage reported by studies conducted in UAE [71], in which 20% and 65% [72] participants were graduates, respectively. While, in that study, most of the responders were professionals (75%), this is contrary to what is reported in this study. There is uncertainty in the results that describes the link between education and the psychological impact of COV-19. This study cannot find significant results between education levels and the psychological implications of lockdown due to COVID-19. Few studies suggested that the stress rate is inversely proportional to education; as the level of education increased, the stress level decreased [62]. However, some studies suggested that highly educated people might be well aware of the situations, and thus it causes them to acquire added stress [63].

One of the strengths of this study was using a newly designed tool for measuring social phobia, anxiety, depression and stress among the UAE population. The four scales showed high internal consistency and reliability. Several limitations were also noted. Firstly, this study had not compared psychological findings after isolation or quarantine and months later among the same population because of the rising cases. Furthermore, few studies evaluate the psychological impact of COVID-19 during the lockdown.

The government of UAE aims at handling the financial crisis and the occurrence of domestic violence before they create devastating impacts. Although awareness of the illness is essential, a constant flood of information and updates might harm people's psychological health. Efforts to prevent such mental anguish should be promoted. People feel compelled to leave their homes when the lockdown is lifted. The UAE government has requested people to stay at home, advised them not to become sedentary, and engage in some form of physical activity. With such strategies in place, this moment may be productive and enjoyable rather than negatively impacted by the circumstances. Interventions must be carried out immediately to help individuals who have already been mentally damaged. Furthermore, due to a decrease in physical activity and an increase in the sedentary lifestyle, obesity was observed, which further caused psychological stress [73]. The affected individuals, healthcare workers, and the general public need psychological support, for which telemedicine and mindfulness have shown promising results as psychological interventions during the pandemic [74].

This study offers a number of advantages, which includes a large sample size and the use of validated questionnaires that allowed the comparisons with earlier studies. Furthermore, an online survey permitted data collected from many places while maintaining participant anonymity. However, some of the limitations were observed in this study. The COVID-19 pandemic was found to cause hemodynamic changes in the brain [75] and impairment in olfactory function [76]. This study used self-reported questionnaires to measure the psychiatric symptoms but did not make any clinical diagnosis. Therefore, the gold standard for establishing psychiatric diagnosis involves a structured clinical interview and functional neuroimaging [69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79].

Furthermore, the online survey was restricted to non-social media users resulting in less generalizable results. A longitudinal study in China interpreted a significant reduction in depression and stress after four weeks of the pandemic [65]. Therefore, future studies need to conduct longitudinal research on the psychological impact of COVID-19 in the UAE since the cross-sectional study design restricts causal interpretation. Nevertheless, the study recommends developing intervention programs to mitigate the negative effects of COVID-19 among families in the UAE.

## 5. Conclusion

The current study results have concluded that males, older people, and unemployed individuals were more likely to be psychologically impacted by lockdown during the pandemic. Although previous data supporting the findings on psycho-social impact has been evident, still; it might be early to discuss the psychological implications for specific age

groups, occupation, education, and gender. Only a year has passed since the pandemic. Therefore, future studies need further longitudinal studies to authenticate the findings of this study.

## Declarations

### Author contribution statement

Rasha.M. Abdelrahman: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Mohamed Emurri Ismail: Conceived and designed the experiments; Wrote the paper.

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### Data availability statement

Data will be made available on request.

### Declaration of interests statement

The authors declare no conflict of interest.

### Additional information

Supplementary content related to this article has been published online at <https://doi.org/10.1016/j.heliyon.2022.e09422>.

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