MEDICAL SCIENCE

To Cite:
Aqeeli W, Qadah A, Zamzami W, Alhindi Y, Fairaq A, Elashmony S. Coping with the COVID-19 pandemic: Anxiety, depression and stress: Results from a cross-sectional survey. *Medical Science* 2023; 27: e319ms3171.
doi: https://doi.org/10.54905/disssi/v27i138/e319ms3171

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Peer-Review History
Received: 18 June 2023
Reviewed & Revised: 22/June/2023 to 21/July/2023
Accepted: 25 July 2023
Published: 01 August 2023

Peer-review Method
External peer-review was done through double-blind method.

Medical Science
pISSN 2321–7359; eISSN 2321–7367

Coping with the COVID-19 pandemic: Anxiety, depression and stress: Results from a cross-sectional survey

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ABSTRACT

Introduction: The global burden of coronavirus disease (COVID-19) has affected mental health in many people, including anxiety, depression, and stress. *Methods:* Google online survey was posted about the COVID-19 experience on anexiety, stress and depression assessment. *Results:* A total of 306 responses were obtained. Around (76,8%) of the respondents were female, (73.9%) were with undergraduate education, and (29.4%) were from Makkah. *Conclusion:* Our study, which was conducted after the pandemic had settled down and the lockdown had been lifted, showed that anxiety, depression, and stress were at mild to moderate levels. From our results we advice to apply psychological protocols and help that can enhance any mental health defect related the COVID-19 pandemic.

Keywords: Pandemic, Covid-19, Stress, anexity, Global, Saudi Arabia.

1. INTRODUCTION

COVID-19 (Coronavirus Disease-2019) is a global pandemic resulting from infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (Colley et al., 2020). It was first isolated and identified in patients in Wuhan City, Hubei Province, China in December 2019 (Colley et al., 2020). Common symptoms include fever, dry cough, and fatigue. However, in acute cases, the disease can lead to severe shortness of breath, hypoxia, and death (Colley et al., 2020). According to the World Health Organization (WHO), the three main routes of transmission include droplet and contact routes, airborne transmission, and fecal and oral for COVID-19 (Di-Renzo et al., 2020).

The first case of COVID-19 infection was announced in the Kingdom of Saudi Arabia on March 2, 2020, as the number of confirmed cases and contacts in various regions increased. The total number of cases recorded in the same year reached 307479 positive cases, and the total number of deaths reached 3649 cases (Evans et al., 2007). Numerous diagnostic tests and preventive measures have been performed to limit the spread of the disease, with 280,143 cured cases (Fitzpatrick et al., 2020; Evans et al., 2007).

Owing to this pandemic, many changes have been made globally and locally, such as restrictions and lockdowns. These changes had a significant effect on personal, social, and occupational lives. It is also expected that these changes would have a significant effect on the psychological and mental health of each person in the Kingdom of Saudi Arabia. Moreover, these effects may vary from one to another, may contribute to treatment, and may even affect long-term outcomes. Several studies from the UK, USA, Korea, and Australia have shown that younger adults have been suffering the most distress during the pandemic (Mc-Ginty et al., 2020; Pierce et al., 2020; Rossell et al., 2021; Jung et al., 2020).

A study was conducted in Saudi Arabia to measure the stress rate among health workers during the pandemic, which was very high (Al-Ateeq et al., 2020). Another study was conducted with nurses and university students (Alsolais et al., 2021; Alrasheedy et al., 2021). Only one study conducted a multiple country study, and Saudi Arabia included 121 participants with a rate of depression, anxiety, and stress of around 40% (Alamri et al., 2020). We reviewed the literature and did not find a single study examining psychological distress in Saudi Arabia. Therefore, we aimed to examine the effect of COVID-19 on anxiety, depression, and stress in Saudi Arabian citizens.

2. METHOD

The survey was prepared using a Google form and distributed to participants online using WhatsApp, Twitter, and Telegram; by filling out and sending the questionnaire, they agreed to participate in this study, and the results were used for scientific and research purposes only. The study included participants of different ages, nationalities, and educational levels from the Kingdom of Saudi Arabia. Responses were collected between February 12 and March 7, 2022, and all respondents were included in the study. The questionnaire covered sociodemographic data, frequency of follow-up for COVID-19 news, a direct question as to whether participants felt that intense media coverage and news about Covid-19 caused them stress or anxiety, and whether they lived alone, plus 25 other questions to assess health status.

Sample

The target population of the study was general population in Saudi Arabia.

Data collection

Data were collected using a self-completed online questionnaire that was posted and included questions regarding the COVID-19 experience, perceived impact of the pandemic on life domains (e.g., social communication and finances), and behavioral alterations (e.g., online activities, substance use).

Inclusion critria

Participants aged 18 and above.
Participants from the general population of Saudi Arabia.

Exclusion critria

Participants aged <18 years
Participants from outside Saudi Arabia.

Statistical Analysis

Data were analyzed using descriptive statistics: frequency, percentage, mean, and standard deviation. Data were analyzed using SPSS version 15 (SPSS Inc., Chicago. Ill., USA).

Ethics

Participation in the study was voluntary, and the study was conducted on the general population without any interventions, meaning it did not involve any risk. The research was approved by the Institutional Review Board (IRB), Approval number: (HAPO-02-K012-2023-04-1545).

3. RESULTS

Our results showed that approximately 306 participants participated in the study. Most were aged 18 to 29 (36.6%), 30 to 49 (38.2%), and 50 and above (25.2%). Almost all the patients (67.8%) were females. The majority of participants were undergraduates (73.9%).

Around (37.3%) were students. Participants from Makkah were (29.4%), Jeddah (9.8%), Riyadh (10.8%), Taif (3.3%) and from other citires of the kingdom around (46.7%) as in (Table 1). Moreover, in Table 2, demonstrates the statements with standard deviations.

Table 1 Demographic characteristics of the participants (n=306) with the comparison of their median scores

Parameters	Frequency (%)	Median Score (IQR)	p-Value
Number of participants=306			
Age (years)			
18-29	112 (36.6%)	3.86 (0.67)	0.985
30-49	117 (38.2%)	3.81 (0.75)	
50 or more	77 (25.2%)	3.86 (0.67)	
Gender			
Women	235 (76.8%)	3.77 (0.68)	0.003
Men	71 (32.2%)	4.06 (0.69)	
Educational level			
Basic	63 (43.5%)	3.92 (0.63)	0.002
Undergraduate	226 (73.9%)	4.76 (2.70)	
Postgraduate	17 (5.6%)	3.75 (1.14)	
Profession			
Government	68 (22.2%)	3.44 (0.78)	0.008
Private	40 (13.1%)	3.68 (0.58)	
House wife	55 (18%)	4.03 (0.64)	
Student	114 (37.3%)	3.79 (0.73)	
Other	29 (9.5%)	3.87 (0.65)	
City of Residence			
Makkah	90 (29.4%)	3.92 (0.63)	0.013
Jeddah	30 (9.8 %)	3.76 (0.70)	
Riyadh	33 (10.8%)	3.75 (1.14)	
Taif	10 (3.3%)	3.81 (0.75)	
Other	143 (46.7%)	4.03 (0.64)	

Table 2 demonstrated participants frequency of the statements. Statements were:

1. To what degree has the COVID-19 Pandemic changed your level of communication with loved ones and friends daily?
2. To what degree have your finances been affected by the COVID-19 Pandemic?
3. To what degree has the COVID-19 Pandemic changed your eating habits?
4. To what degree has the COVID-19 Pandemic altered your physical activity habits /behaviors?
5. To what degree has the COVID-19 Pandemic altered your sleep?
6. To what degree has the COVID-19 Pandemic altered your time spent reading or watching the news and other media outlets?
7. To what degree has your overall 'screen time' behavior changed?
8. To what degree has your overall entertainment and video streaming (e.g., Netflix, YouTube) changed?
9. To what degree has your overall social media use (e.g., Facebook, Twitter, Tumblr, Pinterest, Instagram) changed?
10. To what degree has your overall use of gaming changed? (e.g., Xbox Live, PlayStation Network, Minecraft)?
11. To what degree has your overall messaging (excluding work-related messaging) use changed (e.g., texting (SMS), WhatsApp,
12. Skype Messaging, Email, IMessage, Facebook Messenger, etc.)
13. To what degree has your overall video chat use (excluding work-related meeting) use changed – (eg: FaceTime, WhatsApp Video Call, Zoom, Skype, etc.)
14. To what degree has your online shopping behavior (e.g., eBay, Amazon, Kijiji, Craigslist, and Online Retailers) changed?

To what degree has your digital information-seeking behavior changed? (Examples: Wikipedia, Google for information, Buzzfeed, reading news sites online)

Table 2 Participants' frequencies (with percentages) and the median scores (with standard deviation) for the statements

Statement number*	Very much decreased (%)	Slightly decreased (%)	No change (%)	Slightly Increased (%)	Very much Increased (%)	Median (IQR)
1	56 (18.3)	112 (36.6)	77 (52.2)	42 (13.7)	19 (6.2	3.84 (1.21)
2	48 (15.7)	77 (25.2)	147 (48)	29 (9.5)	5 (1.6)	3.83 (1.13)
3	19 (6.2)	50 (16.3)	161 (52.6)	58 (19)	18 (5.6)	4.34 (1.10)
4	68 (22.2)	75 (24.5)	122 (39.9)	23 (7.5)	18 (5.9)	4.32 (1.12)
5	18 (5.9)	48 (15.7)	191 (62.4)	30 (9.8)	19 (6.2)	4.25 (1.12)
6	12 (3.9)	20 (6.5)	139 (45.4)	90 (29.4)	45 (14.7)	3.26 (1.20)
7	7 (2.3)	19 (6.2)	96 (31.4)	81 (26.5)	83 (27.1)	1.5 (1.1)
8	8 (2.6)	18 (5.9)	106 (34.6)	77 (25.2)	78 (25.5)	3.57 (1.16)
9	7 (2.3)	78 (25.5)	25 (8.2)	25 (8.3)	26 (8.5)	3.66 (1.10)
10	15 (4.9)	19 (6.2)	136 (44.4)	56 (18.3)	53 (17.2)	3.67 (1.09)
11	8 (2.6)	7 (2.3)	103 (33.7)	72 (23.5)	43 (14.1)	4.21 (0.96)
12	8 (2.6)	12 (3.9)	74 (24.2)	92 (30.1)	80 (26.1)	3.84 (1.17)
13	4 (1.3)	10 (3.3)	140 (45.8)	85 (27.8)	52 (17)	3.99 (1.15)
14	8 (4.9)	13 (7.9)	44 (26.8)	37 (22.6)	62 (37.8)	3.8 (1.17)

Figure 1 shows that the overall satisfaction after the pandemic was very poor (29.40%), poor (9.20%), good (28.10%), and very good (29.40%). Figure 2 shows that the sleeping habits changed by approximately 19% and slightly increased their sleeping hours, while 52.6% did not change. Figure 3 and 4 demonstrate eating, physical, and activity behaviors; for eating habits, around 63% of them did not notice any changes, while for physical activity, around 39% did.

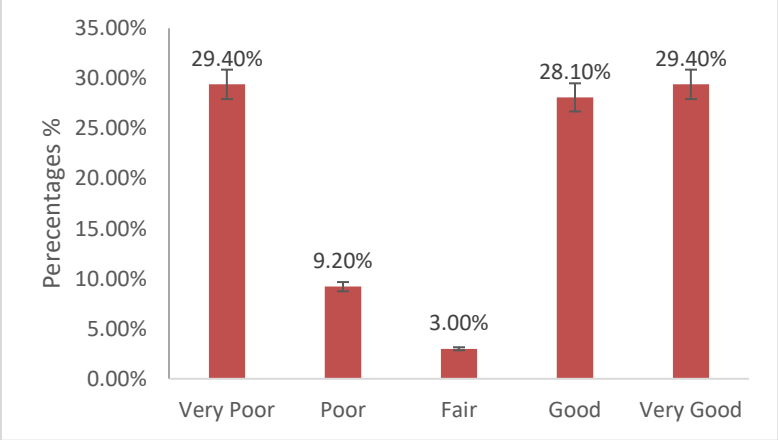

Figure 1 How would you rate your over all satisfaction about your life After Covid-19

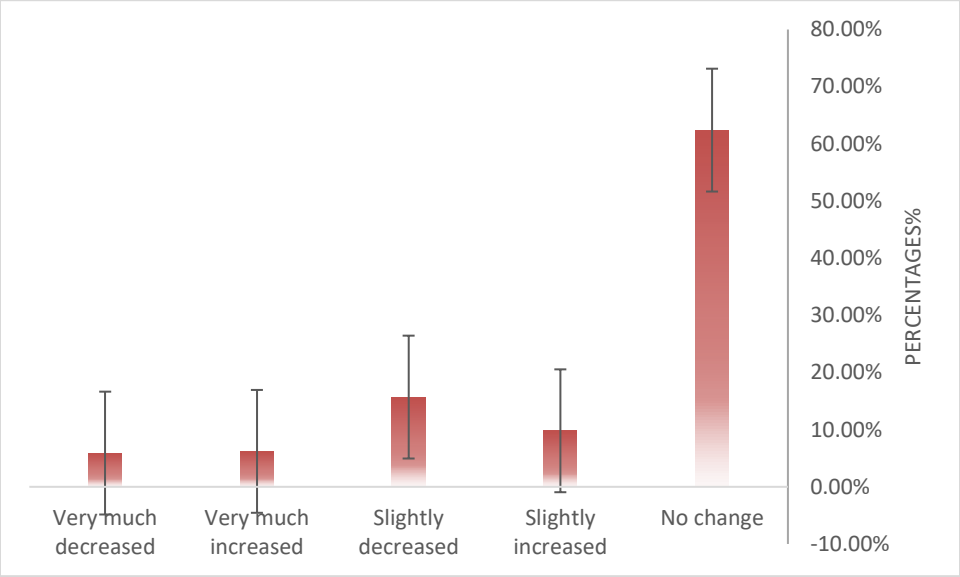

Figure 2 How COVID-19 affected sleep

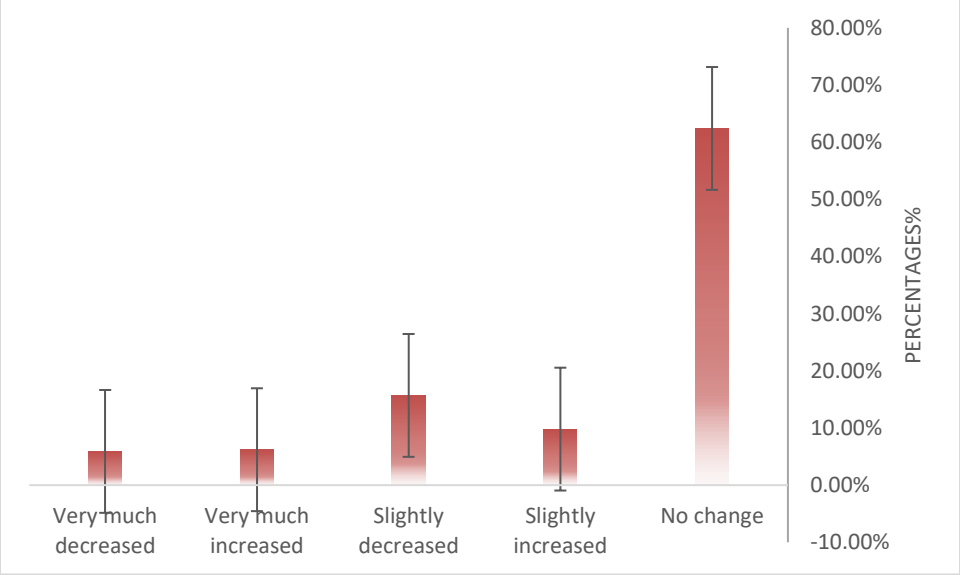

Figure 3 How COVID-19 affected eating habits

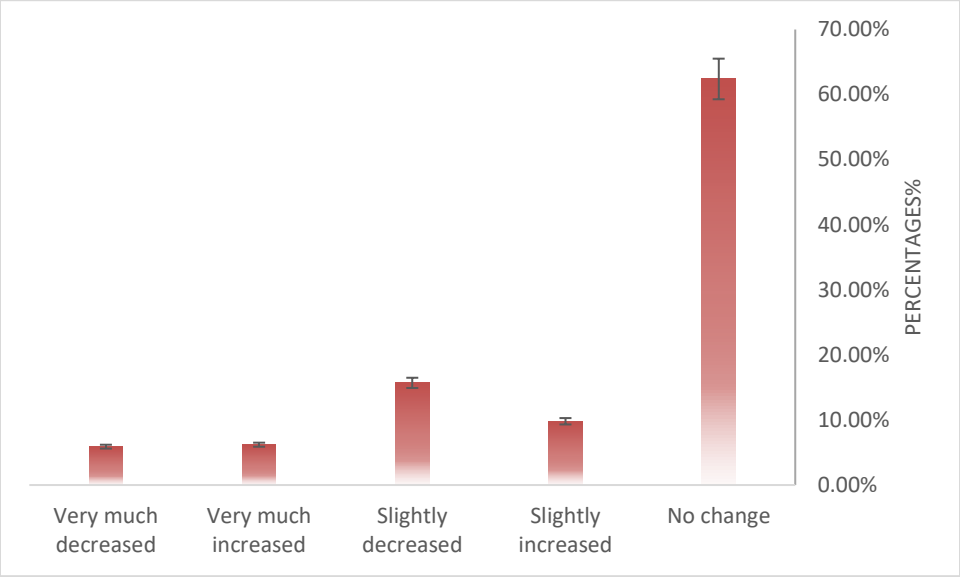

Figure 4 How COVID-19 affected physical activity habits/behaviour

4. DISCUSSION

This study aimed to assess the impact of the COVID-19 pandemic on the mental health of the general Saudi Arabian population. Our survey of 306 respondents across Saudi Arabia showd (76.8%) of the respondents were female, (73.9%) were undergraduate education, (37.3%) were students, and (29.4%) were from Makkah. Based on our results indicated that 63.1% of the participants were living with their family/relatives, and 66.3% knows someone who has passed away as a result of complications from COVID-19 as shown in our study, while our results showed that 34.3% of the responses were mildly anxious worried about family members and loved ones catching Covid-19 and 30.1% were very anxious-worried, also 34.3% were fairly often nervous and stressed in the last month and about 33% were very often stressed from our data.

However, we also showed that 29.5%-28% would rate their overall satisfaction and contentment as very good fair during the past week, and also our results indicated that after the lockdown was lifted, COVID-19 had no effect on sleep, with a percentage of 62.4% and 52.6% having no effect on eating habits, and 24.5%-39.9% had no change or slightly decreased physical activity habits/behaviors. One study was published in 2020 by the University of Hail, Saudi Arabia showed that the less exposure to pandemic media coverage, the less individuals experienced anxiety, stress, and depression (Alyami et al., 2021).

While another study that was also published in 2020 in King Khalid University, Abha, Saudi Arabia conducted during the pandemic and lockdown showed that the results of depression and stress were from moderate to severe, and another study done in Najran University Saudi Arabia concluded that during the initial phase of the COVID-19 pandemic in Saudi Arabia, respondents had moderate-to-severe depression, and moderate-to- severe anxiety (Zakout et al., 2020).

Thus, the timing of the study was an influential factor, whereas the psychological impact was expected to be more severe at different times. Our survey provides only a snapshot of psychological responses at a particular time after the lockdown was lifted, and a long-term study is needed to provide more information about subgroups that are most vulnerable to depression and stress, such as women, health practitioners, and adolescents.

Limitations

The small sample size and short study duration may have influenced the accuracy of the results.

5. CONCLUSION

Our study was conducted after the pandemic had settled down and the lockdown had lifted, and the results of anxiety, depression, and stress were from mild to moderate. Based on our findings, we suggest offering psychological measures and interventions to boost mental health problems after the COVID-19 pandemic.

Recommendations

Further review of studies with a longer period of time comparing the results of depression, anxiety, and stress before, during, and after the COVID-19 pandemic.

List of abbreviation

IRB: Institutional Review Board
UK: United Kingdom
USA: United States of America

Author Contribution

All Authors contributed to the literature review and writing/manuscript preparation; writing the initial draft, data collection, formal analysis and data presentation, data collection.

Funding

This study has not received any external funding.

Conflict of interest

The authors declare that there is no conflict of interests.

Data and materials availability

All data sets collected during this study are available upon reasonable request from the corresponding author.

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