

# Psychosocial Impact of the COVID-19 Pandemic on People with Mental Health Disorders

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**Abstract— Introduction:** The 2019 corona virus disease pandemic is reported to have an adverse psychological impact. There is paucity of data concerning the psychosocial effect of the COVID-19 pandemic on individuals with mental health diseases. Research into the subject is needed to guide interventions to alleviate the psychological toll of the pandemic. **Objective:** This study aims to investigate the psychological impact of COVID-19 among the general population compared to individuals who have been diagnosed with a mental health disease. **Methods:** A cross-sectional study was conducted in early 2021 using a self-administered questionnaire. Respondents completed a modified and translated form of the COVID-19 Pandemic Mental Health Questionnaire (CoPaQ) that assessed the psychosocial impact of the COVID-19 pandemic. **Results and Discussion:** A total of 287 respondents (160 males and 127 females) completed the survey. Of the 287 respondents, 74 reported having been diagnosed with a mental health disease. Nearly a quarter of respondents (24%) reported that a family member had died due to COVID-19. On the impact of the COVID-19 scale, the items were rated as extremely distressing by 10.8% to 33.4%. Female gender, low monthly income, mental health diagnosis, and a high number of risk factors for a severe COVID-19 infection negatively influenced the respondents' rated distress scores. **Conclusions:** The burden of mental health disease increases during an isolating time such as a pandemic. Online psychological interventions to improve the mental health of susceptible groups during pandemics should be designed.

## Introduction

The 2019 corona virus disease (COVID-19) was announced a pandemic in the early months of 2020. The virus is spread through aerosolized droplets or contact with a contaminated surface. The clinical manifestations of COVID-19 are variable. They may range from no symptoms at all to acute respiratory distress syndrome and life-threatening multi-organ dysfunction<sup>[1-4]</sup>. People with chronic diseases are at increased risk of a severe COVID-19 infection. The infection risk by individuals who may be asymptomatic added stress to the institutions and the public alike. While vaccines were still under development, multiple countries responded by enforcing restrictions to control the spread of the virus. These government-enforced restrictions may have added more psychological stress on the public. Studies reported negative mental health outcomes such as post-traumatic stress symptoms, insomnia, anxiety, and depression during the pandemic<sup>[5-13]</sup>. In Saudi Arabia, the first affected case was reported following extensive media coverage of the escalating situation

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worldwide<sup>[14-16]</sup>. Coverage of the pandemic by the mainstream media and social media is thought to have negatively impacted the mental health of affected and unaffected individuals<sup>[8-13 & 24]</sup>.

Multiple studies have investigated the psychological outcomes of the COVID-19 pandemic<sup>[17-20]</sup>. However, there is paucity of data on the psychological impact of the pandemic on people with mental health diseases<sup>[21]</sup>. To address this gap, the current study aims to evaluate the psychological impact of the COVID-19 pandemic on people with mental health diseases compared to controls. The study aims to use “the COVID-19 Pandemic Mental Health Questionnaire (CoPaQ)” to investigate the psychosocial impact of the COVID-19 pandemic on the population and individuals with mental health diseases after over a year of restrictive measures in Saudi Arabia.

## **Methods**

### **Study Design**

The study is a cross-sectional, hospital-based survey conducted from January 2021 to April 2021 during the COVID-19 pandemic. The study used an anonymous electronic self-administered questionnaire to collect data. Informed consent was obtained from all respondents before enrollment. The informed consent page of the survey presented respondents with the choice to participate or decline. Confidentiality of data was assured. At any time during the process, subjects were free to quit the survey. Adults aged eighteen years or more that are able to read Arabic and provide electronic consent were able to access the survey. The study protocol was approved by the Ethics Committee of King Abdulaziz University ([ref number](#)). No monetary rewards were given for enrollment in the study.

### **Questionnaire**

The questionnaire used in the study was adapted from the “COVID-19 pandemic mental health questionnaire (CoPaQ)”. The CoPaQ is a reliable and valid self-report measure used to assess the impact of the COVID-19 pandemic<sup>[22]</sup>. The CoPaQ questionnaire was translated into Arabic by the study team and tested in a pilot study of 10 volunteers. Recommendations from the pilot study led to the omission of some items and the modification of others for clarity. The adapted questionnaire in the current study has a total of 25 items and took nearly five minutes to complete. The questionnaire consists of two main sections. The first section included the independent variables of the study (sociodemographic data, self-reported mental health profile, risk factors for a severe COVID-19 infection<sup>[23]</sup>, and personal experience with COVID-19). In the second section, respondents were required to rate the degree of the psychological impact the pandemic had on them on a five-point Likert scale.

Basic demographic data include gender, age, area of residence, household size, occupation, and monthly income. Items on the psychological impact of the COVID-19 pandemic

included stress over infection, stress over infecting others, sleep disturbances, and financial stress.

**Statistical Analysis**

Firstly, descriptive analysis was used to explore data normality. Categorical variables were expressed as frequency and percentage, while continuous variables were described as mean ± standard deviation. The Independent T-test was used to compare the means of two groups. One-way ANOVA was used to compare the means of 3 or more groups. The significance level was set at  $\alpha = .05$  (two-sided tests). Data analysis was performed using IBM SPSS Statistics (Version 20.0).

**Results**

**Sociodemographic Characteristics**

The overall number of responses was 291. Four responses were excluded due to missing data. Of the 287 responses, over half were male (55%) and over half (59.2%) were under thirty years old. Most respondents (96.5%) lived in urban areas. Most respondents (77.4%) reported family members of four or more living in the same household. Over half of the respondents (69.7%) were public-sector employees while only (5.25) of respondents were private-sector employees and only (2.8%) were self-employed. Unemployed respondents represented (5.2%) of the sample size. Regarding monthly income, (19.5%) reported a family income of less than 5000 SAR, and (32.1%) reported a monthly income between 5000 and 11000 SAR. A monthly income between 11000 and 18000 SAR was reported by (26.1%) and an income of more than 18000 SAR was reported by (22.3%), as shown in Table 1.

**Table 1: Sociodemographic Characteristics of Respondents.**

Demographics	N=287 Frequency	%
Gender	Male.	160 55.7%
	Female.	127 44.3%
Age	<30.	170 59.2%
	≥30.	117 40.8%
Area of residence	Urban	277 96.5%
	Rural-urban	10 3.5%
Household size	<4.	65 22.6%
	≥4.	222 77.4%
Monthly income	< 11000 SAR.	148 51.6%
	≥11000 SAR.	139 48.4%

**Table 2: Mental Health Profile of Respondents**

<b>Mental Health Diagnosis</b>
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Yes, 74 (16.4%).  
 No 240 (83.6%).

**Types of mental health diagnose<sup>a</sup>**

Depression 30 (40.5 %)  
 Anxiety disorder 23 (31%)  
 Eating disorder 17 (23%)  
 Obsessive-compulsive disorder 6 (8.1%)  
 Posttraumatic stress disorder 4 (5.4%)  
 Other 4 (5.4%)

**Currently receiving psychological therapy**

Yes 2 (0.7%)  
 No 285 (99.3%)

<sup>a</sup> Some respondents have more than one diagnosis.

Table 2 illustrates that 74 respondents (16.4%) reported having been diagnosed with a mental health disease. Depression and anxiety disorder were the most reported diagnoses at (40.5%) and (31%), respectively. Eating disorders were the third most commonly reported diagnoses (23%) followed by obsessive-compulsive disorder (8.1%) and posttraumatic stress disorder (5.4%).

**Table 3: Respondents' Experience with COVID-19.**

<b>Have you ever tested positive for COVID-19?</b>	Yes 75 (26.1%). No 212 (73.9%).
<b>Has a family member tested positive for COVID-19?</b>	Yes 215 (74.9%). No 51 (17.8%). I don't know 21 (7.3%).
<b>Has a family member died due to COVID-19?</b>	Yes 69 (24%). No 218 (76%).
<b>Number of risk factors to a sever COVID-19.<sup>a</sup></b>	No risk factors 94 (32.8%). 1 risk factor 83 (28.9%). 2 risk factors 110 (38.3%).

<sup>a</sup> The CDC's list of risk factors for sever COVID-19 infection.

Table 3 illustrates that (26.1%) reported having tested positive for COVID-19 in the past. Additionally, (74.9%) reported a family member has tested positive for COVID-19. Nearly a quarter of respondents (24%) reported that a family member had died due to COVID-19.

Concerning the risk factors for severe COVID-19, (32.8%) reported having none of the risk factors listed by the CDC (m2). Additionally, 28.9%) and (12.5%) reported having one and two risk factors, respectively. Having three risk factors for a severe COVID-19 infection was reported by (8.7%). Meanwhile, (17.1%) reported having four or more risk factors for a severe COVID-19 infection.

**Table 4: Impact of COVID-19 on respondents' lives.**

	0 Not distressing N (%)	1 N (%)	2 somewhat distressing N (%)	3 N (%)	4 Extremely distressing N (%)	Mean distress score ± SD*
Lack of control over the pandemic.	49 (17.1%)	49 (17.1%)	79 (27.5%)	59 (20.6%)	51 (17.8%)	2 ± 1.3
People close to me being infected with COVID-19.	71 (24.7%)	49 (17.1%)	65 (22.6%)	45 (15.7%)	57 (19.9%)	1.8± 1.4
Infecting others with COVID-19.	52 (18.1%)	36 (12.5%)	48 (16.7%)	55 (19.2%)	96 (33.4%)	2.4± 1.4
The consequences of COVID-19 infection on my health.	41 (14.3%)	57 (19.9%)	71 (24.7%)	48 (16.7%)	70 (24.4%)	2.1± 1.3
Dying due to COVID-19.	83 (28.9%)	52 (18.1%)	55 (19.2)	37 (12.9%)	60 (20.9%)	1.8± 1.5
People close to me dying due to COVID-19.	69 (24%)	50 (17.4%)	50 (17.4%)	38 (13.2%)	80 (27.9%)	2± 1.5
Psychological stress due to the pandemic.	85 (29.6%)	50 (17.4%)	43 (15%)	47 (16.4%)	62 (21.6%)	1.9± 1.5
Stress over health due to the pandemic.	74 (25.8%)	50 (17.4%)	54 (18.8%)	45 (15.7%)	64 (22.3%)	1.9± 1.5
Stress over the health of my children due to the pandemic.	68 (23.7%)	31 (10.8%)	50 (17.4%)	44 (15.3%)	94 (32.8%)	2.2± 1.5
Financial stress due to the pandemic.	74 (25.8%)	52 (18.1%)	62 (21.6%)	33 (11.5%)	66 (23%)	1.9± 1.4

Sleep disturbances due to the pandemic.	160 (55.7%)	42 (14.6%)	35 (12.2%)	19 (6.6%)	31 (10.8%)	1 ± 1.3
Fear of the future because of the pandemic.	87 (30.3%)	41 (14.3%)	60 (20.9%)	32 (11.1%)	67 (23.3%)	1.8 ± 1.5

\* Data was normally distributed.

Table 4 illustrates respondents' ratings on various items related to the COVID-19 psychological impact on a five-point Likert scale. The scale ranged from zero which indicated the item was not distressing to four which indicated the item was extremely distressing. On whether the lack of control over the pandemic was distressing, (17.8%) thought this was extremely distressing while (17.1%) thought this was not distressing. Nearly a fifth of respondents (19.9%) thought the idea of people close to them being infected with COVID-19 was extremely distressing while (24.6%) did not find this distressing. Nearly a quarter of respondents were not troubled by the idea of people close to them dying of COVID-19 while (27.9%) were extremely troubled by this. Additionally, (18.1%) were not troubled by the idea of infecting others with COVID-19 while (33.4%) found this extremely distressing. Dying due to COVID-19 was not distressing to (28.9%) but extremely distressing to (20.9%) of respondents. Nearly a quarter of respondents (24.4%) were extremely troubled by the consequences COVID-19 might have on their health. On the other hand, (14.3%) did not find this distressing. Regarding stress imposed by the pandemic, (22.3%) reported that pandemic stress was extremely distressing while (25.8%) did not find this distressing. Nearly a quarter of respondents (25.8%) were not stressed over their health and (23.7%) were not troubled over the health of their children. On the other hand, (22.3%) were extremely troubled by stress over their health, and (32.8%) were extremely troubled by stress over the health of their children. Financial stress caused by the pandemic was not distressing to (25.8%) but extremely distressing to (23%). Over half of the respondents (55.7%) had had no trouble sleeping over the pandemic while (10.8%) were extremely troubled by sleep disturbances due to the pandemic. Lastly, fear of the future because of the pandemic was not distressing to (30.3%) of respondents but extremely distressing to (23.3%) of respondents.

**Table 5: Level of impact as per the respondents' variables.**

Variable	Mean score*	Standard deviation	P-value
Gender			
Male.	<b>1.7</b>	<b>1</b>	<b>0.003</b>
Female.	<b>2.1</b>	<b>1</b>	
Household size			

<4.	1.9	1.1	0.6
≥4.	1.9	0.9	
Monthly income			
<11000.	<b>2.1</b>	<b>1</b>	<b>0.01</b>
≥11000.	<b>1.7</b>	<b>0.9</b>	
Mental health diagnosis			
Yes.	<b>2.4</b>	<b>0.8</b>	<b>0.001</b>
No.	<b>1.8</b>	<b>0.9</b>	
Number of risk factors to a sever COVID-19			
No risk factors	<b>1.7</b>	<b>0.9</b>	
1 risk factor.	<b>1.8</b>	<b>1</b>	<b>0.005</b>
2 or more risk factors.	<b>2.2</b>	<b>0.9</b>	
Previous infection with COVID-19			
Yes.	1.9	1	0.8
No.	1.9	0.9	
Death of a family member due to COVID-19			
Yes.	1.9	0.9	0.8
No.	1.8	0.8	

Statistically significant values are in **bold**.

\* Data was normally distributed.

Table 5 illustrates the level of impact according to different respondents' variables. Of the sociodemographic variables, gender and monthly income had statistical significance. Females had higher mean impact scores compared to males with values equal to 2.1(1) and 1.7 (1), respectively. Similarly, people with a monthly income of less than 11000 SAR had higher mean impact scores than people with a monthly income greater than or equal to 11000 with values equal to 2.1 (1) and 1.7 (0.9), respectively. In addition, physical and mental health had statistical significance. People who have been diagnosed with a mental health disease had a higher mean impact score of 2.4 (0.8) than people who have not been diagnosed with a mental health disease with a mean of 1.8 (0.9). Similarly, people with two or more risk factors for a severe COVID-19 infection had a higher mean impact score of 2.2 (0.9) than those with fewer risk factors.

### Discussion

In an attempt to control the spread of COVID-19, governments enforced public precautions such as online learning and a ban on air fights. This has been linked to negative psychological outcomes during the pandemic <sup>[20]</sup>. To the best of our knowledge, this is the first regional study to use “the novel CoPaQ questionnaire” to assess the psychosocial impact of the COVID-19 pandemic on people with mental health diseases compared to the general population.

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Of the 287 respondents in the study, 74 reported being diagnosed with a mental health disease. Depression and anxiety were the most common mental health diseases. Additionally, mental health disease diagnosis was found to have a negative psychological impact as there was a statistically significant difference in the mean of distress scores between respondents with a mental health diagnosis and those without ( $P=0.001$ ). Surprisingly, only two respondents reported psychological therapy at the time the study was conducted. This highlights the deficiency of mental healthcare during the pandemic as suggested by previous studies<sup>[18,21, 27 & 28]</sup>. Mental health care is a modern age necessity especially when coping with a pandemic<sup>[24]</sup>. More flexible methods of intervention such as internet-based counseling have been integrated into China<sup>[19&25]</sup>. This is expected to help individuals who might find it difficult to come forward and seek mental health consultations as mental health disease remains stigmatized by some cultures<sup>[17&26]</sup>.

Gender is another factor that was shown to have a negative psychological impact during the pandemic. The mean distress scores for females were significantly higher than for males ( $P=0.003$ ). This finding is supported by literature that suggests that females are more impacted by the pandemic<sup>[25,26, 29&30]</sup>. Physiological explanations were offered by some researchers<sup>[30]</sup> while others linked this to family structure<sup>[17]</sup>. As seen in Table 4, the two items that were scored the highest by many respondents were infecting others with COVID-19 and stress over the health of children. Concern for the health of family members, especially children, has been suggested to negatively affect the psychological health during the pandemic<sup>[26]</sup>. Females tend to take on the role of protectors of their families. During a pandemic, this might put more pressure on them than on males<sup>[17]</sup>.

Several studies supported our results, a study done in Saudi Arabia reported that the female gender was associated with higher psychological impact with higher scores in the Impact of Event Scale-Revised (IES-R)<sup>[15]</sup>. Another study was done to assess the psychological impact of COVID-19 on adults and children and found that mothers and their girls had higher stress rates than fathers and boys<sup>[31]</sup>. Also, a study was performed in Bahrain on the Psychological Impact of COVID-19, Isolation, and Quarantine and reported that Depression and post-traumatic stress scores were significantly higher in females<sup>[32]</sup>.

Low monthly income and a high number of risk factors for severe COVID-19 infection were also linked to a negative psychological impact during the pandemic. The mean distress scores for people with a monthly income of  $< 11000$  SAR were significantly higher than those with a monthly income of  $\geq 11000$  SAR ( $P=0.01$ ). This is in keeping with previous studies<sup>[33& 34]</sup>. Financial strain has been linked to isolating lifestyle which might negatively affect mental health<sup>[33]</sup>. Several published studies report similar results<sup>[15&27]</sup>. A previous study done in Saudi Arabia reported that participants with income less than 11,000 SR were more liable for stress and anxiety<sup>[15]</sup>.

The mean distress scores for people with two more risk factors were significantly higher than those with a lower number of risk factors ( $P=0.005$ ). This finding is in line with previous studies that report that chronic diseases are risk factors for a negative psychological outcome during the pandemic<sup>[19,20&26]</sup>. This may be exacerbated by self-isolation because of reports of high COVID-19 morbidity and mortality associated with chronic diseases<sup>[25&26]</sup>. In the

current study, (38.3%) of respondents reported having more than two risk factors for a severe COVID-19 infection as per the list by the CDC. This high prevalence of chronic diseases in our study population might be explained by the study design. The study was hospital-based. People who need to visit the hospital during a pandemic are more likely to have health problems<sup>[19]</sup>.

In contradiction to our anticipation, there was no statically significant difference in mean distress scores between respondents who had been infected with COVID-19 and those who did not. Additionally, there was nostatically significant difference in mean distress scores between respondents who attributed a family member's death to COVID-19 and those that did not. This could be attributed to the notion of family in Saudi Arabia. Several relatives may be included in what is considered a family. This is highlighted by the unusually high mortality rate reported by respondents in our study (24%). At the time of data collection, national mortality rates were reported to be 2%<sup>[35]</sup>.

## **Limitations**

The current study has several limitations. The study is cross-sectional which limits the assessment of causation. In addition, the small sample size limits the generalization of our findings. A possible cause for the lack of initiative to enroll in mental health research might be the stigma around it in some cultures<sup>[19]</sup>. Selection bias might have also skewed our data in either direction. Excessive psychological distress or lack thereof might refrain people from enrolling in mental health studies. Additionally, the study was self-reported which might affect the accuracy of mental health diagnoses, the risk factors for a severe COVID-19 infection, and the attribution of death to COVID-19.

## **Conclusions**

Female gender, mental health diagnosis, low monthly income, and a high number of risk factors for a severe COVID-19 infection were associated with a bigger psychological impact of the pandemic. Our findings indicate that mental health disease is neglected during the pandemic. Our study can be the start of future studies to guide early psychological interventions for vulnerable groups. Online platforms could be used for psychological interventions as they had been used for teaching. Additionally, governmental and community support should be offered to people with low income. Larger longitudinal studies are needed to assess the quality of mental health services. This is a crucial step in coping with the COVID-19 pandemic which is still a global reality at the time of writing this manuscript and any future infectious outbreaks.

## **Recommendations**

Early detection of psychological burdens throughout infectious outbreaks should be done. Psychological support should be flexible to conform with pandemic demands to help patients with mental health disease.

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