Generalized anxiety disorders among the adult population in Basra during the COVID-19 pandemic

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ABSTRACT

Background: Anxiety disorders encompass conditions characterized by excessive fear and anxiety, along with related behavioral disturbances. During epidemics, many individuals experience distress due to immediate health impacts and feelings of loneliness; however, others fear infection, death, or the loss of loved ones. The COVID-19 pandemic in Iraq, part of the global coronavirus disease 2019 outbreak, may have exacerbated anxiety disorders among patients and their families. **Aim**: This study aims to assess the psychological impact of the COVID-19 pandemic on the adult population in Basra. **Methods**: A cross-sectional community-based study was conducted using an online survey with a questionnaire available via Google Forms. The questionnaire included socio-demographic and clinical data related to COVID-19, as well as the Generalized Anxiety Disorder 7-item scale to assess anxiety severity. The survey was administered randomly to adult individuals living in Basra, and data collected from 894 participants was analyzed using 22 version of the Statistical Package for the Social Sciences. Chi-square tests were performed to assess associations between variables. **Results:** Approximately 56.26% of the sample experienced varying degrees of anxiety (mild, moderate, and severe) during the COVID-19 pandemic. The highest prevalence of anxiety was observed among younger residents of Basra districts aged 18–27 years, females, married individuals, and health workers. **Conclusion**: The study found that 56.26% of participants suffered from varying degrees of anxiety during the COVID-19 pandemic, with about 22.7% experiencing moderate to severe anxiety, indicating a need for further evaluation and management.

Keywords: COVID-19 pandemic, generalized anxiety disorder, Basra adults.

INTRODUCTION

Anxiety disorders are characterized by excessive fear and related behavioral disturbances. Fear is the emotional response to real or perceived imminent threats, while anxiety involves the anticipation of future dangers, often accompanied by physical symptoms such as muscle tension and avoidant behavior.[1]

A large percentage of anxious individuals report feelings of nervousness and distress, seeking relief from their symptoms.[2]

Public health emergencies are stressful events that pose risks to the health of individuals and communities.[3] During epidemics, many people experience distress due to health impacts and physical separation, while others fear infection, loss of life, and the death of loved ones.[4]

The disease caused by the coronavirus, first identified in Wuhan, China, is referred to as COVID-19.[5] The World Health Organization classified COVID-19 as a global infectious disease in March 2020.[6] The COVID-19 pandemic in Iraq is part of the worldwide COVID-19 outbreak.[7] The first case of SARS-CoV-2 infection in Iraq was diagnosed on February 22, 2020, in Najaf.[8] By April, the number of confirmed cases rapidly increased, surpassing 100 distributed in Baghdad, Basra, Sulaymaniyah, Erbil, and Najaf.[9]

The COVID-19 infection has symptoms such as shivering, fever, cough, shortness of breath, fatigue, loss of smell or taste, congestion, muscle pain, nausea, vomiting, and diarrhea. Severe cases can lead to respiratory failure, acute kidney injury, or death.[10] COVID-19 may also adversely affect individuals' mental health.[3]

The COVID-19 pandemic has been associated with increased mental health issues, including depression, anxiety, and dementia, within three months of diagnosis. Individuals diagnosed with COVID-19 are at double the risk compared to those without the virus.[11,12] The uncertainty surrounding treatment and the isolation experienced can contribute to the massive fear and anxiety.[13] Other factors contributing to anxiety and stress include the risk of illness or death, concerns for loved ones, control measures, social isolation, mental and physical exhaustion of health care workers, job loss, financial insecurity, and excessive media consumption.[14] The overall prevalence of generalized anxiety disorder (GAD) among the Chinese (the source of COVID19 pandemic) public during the outbreak in 2020 was 35.1%.[3] While according to data from Mental Health America, over 169,000 individuals reported moderate to severe depression or anxiety by the end of June 2020, a 406% increase in anxiety screenings compared to January, and a 457% increase in depression screenings.[15] In the United States, 53% adults reported experiencing mental health disorders due to worry and stress related to COVID-19.[16] More than one in three adults exhibited clinical features of depressive disorders or anxiety during the pandemic, with one in five survivors being recorded as having a first-time diagnosis of anxiety, depression, or insomnia.[17]

A systematic review and meta-analysis conducted in Google Scholar and other databases up to May 2020 found that the prevalence of stress, anxiety, and depression in the general population was 29.6%, 31.9%, and 33.7%, respectively.[12] A web survey in Sweden indicated that 55% of the participants met the cutoff for clinical depression, while 20.5% experienced anxiety and 60.9% reported insomnia.[18] Another study found that 20% of COVID-19 survivors were diagnosed with psychological complaints within 90 days of a positive test, which was double the usual rate. The most common disorders included anxiety, depression, and insomnia, with patients being at significantly higher risks for dementia.[17] A study examining nearly 154,000 COVID-19 patients in America showed that 39% experienced depression and about 35% experienced anxiety during the months following infection, compared to individuals without COVID-19 during the same period. The study also found that COVID-19 patients were 41% more likely to experience sleep disorders and 38% more likely to experience stress than the general population.[19]

MATERIALS AND METHODS

This cross-sectional community-based study utilized an online survey with a carefully selected questionnaire, and employing a standard valid questionnaire with evident reliability to assess anxiety among the population using the Generalized Anxiety Disorder 7-item (GAD-7) scale and the questionnaire was posted online via Google Forms from July 5, 2020 to August 18, 2020. Invitations to participate were sent randomly to adult individuals living in Basra via whatsapp messages that shared and posted by the research members.

The questionnaire consisted of two parts: the first part collected socio-demographic and clinical data related to COVID-19, while the second part included the GAD-7 scoring for anxiety severity, calculated based on responses scored as 0, 1, 2, and 3 for the categories "not at all," "several days," "more than half of the days," and "nearly every day," respectively.

The data were collected from 894 participants, who completed the Google Forms questionnaire, and

downloaded into an Excel sheet and analyzed using version 22 of the Statistical Package for the Social Sciences (SPSS).

Descriptive statistics of participants' socio-demographic and clinical characteristics were presented as frequencies and percentages. The total score for all seven items on the GAD-7 scale was calculated, with scores ranging from 0 to 21 categorized into four levels of anxiety:

- 0–4: minimal anxiety
- 5–9: mild anxiety
- 10–14: moderate anxiety
- 15–21: severe anxiety

To assess associations between social and clinical variables and anxiety levels, Chi-square tests were performed, with a p-value of < 0.05 indicating statistical significance.

RESULTS

Socio-Demographic Distribution of the Participants
Approximately one-third of the participants were aged 18–27 years, while only 3% were 58 years or older. Most participants were female, married, residing in Basra city center, and employed as health workers (60.7%, 63.3%, 63.0%, and 40.3%, respectively) as shown in (Table 1).

Distribution of COVID-19 Symptoms among Participants
Approximately 71.14% of participants reported no symptoms of COVID-19, while the remaining 28.86% had either multiple symptoms (12.86%) or only one symptom (16%). The most common symptom was fatigue (4.18%), while vomiting and diarrhea were the least common (0.11%) as shown in Figure 1.

Diseases History of Participants
Table2 showed that about 14.9% of the studied sample had a positive family history of COVID-19 infection, while only 4.7% reported personal COVID-19 infection. Less than one-fifth of the studied sample (18.34%) had chronic diseases.

Table 1: Socio-demographic distribution of the participants.

Variable		Number	Percentage
Age	18–27 years	284	31.8
	28–37 years	249	27.9
	38–47 years	203	22.7
	48–57 years	131	14.7
	58 years & above	27	3.0
Gender	Male	351	39.3
	Female	543	60.7
Marital status	Married	566	63.3
	Single	310	34.7
	Divorced/ widower	18	2.0
Residence	Basra center	563	63.0
	Basra peripheries	281	31.4
	Other governorates	50	5.6
Occupation	Health worker	360	40.3
	Non-health worker	305	34.1
	Unemployed	229	25.6
Total		**894**	**100.0**
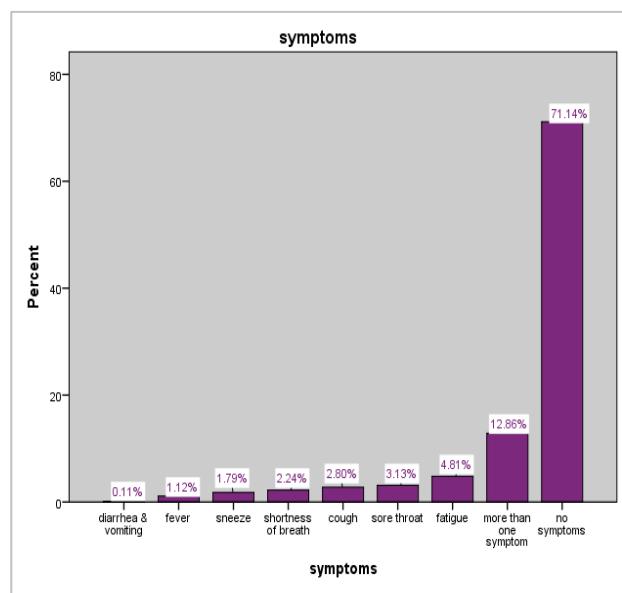
Figure 1: Distribution of COVID-19 symptoms among participants

Table 2: Diseases History of Participants			
Variable		Number	Percentage
Positive family history of COVID-19	No	760	85.01
	Yes	134	14.99
Personal infection	No	852	95.3
	Yes	42	4.7
Any chronic disease	No	730	81.66
	Yes	164	18.34
Total		894	100.0

Assessment of anxiety among the studied sample

Figure 2 revealed that more than half of the studied sample (56.26%) suffered from different degrees of anxiety (mild, moderate, and severe) during the COVID-19 pandemic, with the highest percentage reporting mild anxiety (33.56%), followed by moderate anxiety (11.41%) and severe anxiety (11.3%).
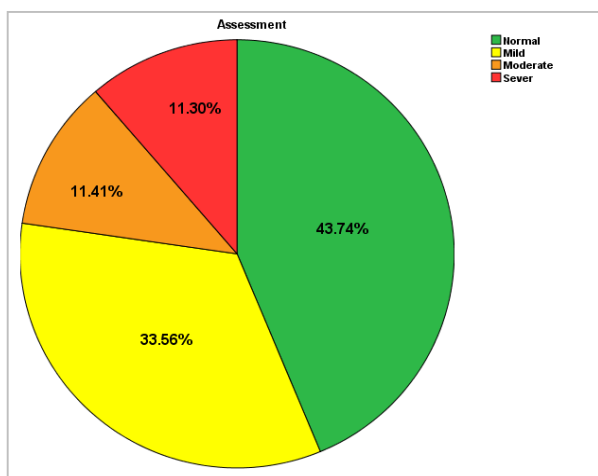

Figure 2: Assessment of anxiety among the studied sample.

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Association between socio-demographic characteristics and anxiety

Table 3 revealed the younger age group (18–27 years) exhibited the highest prevalence of anxiety (mild, moderate, and severe) at about 67.6% being affected, while the lowest prevalence was observed in the 48–57 years age group, where 42.7% experienced anxiety, demonstrating a statistically significant difference (p-value < 0.01).

Females were more affected by anxiety, with 62.6% of females reporting anxiety compared to 46.4% among males, which was statistically significant (p-value < 0.01). Regarding residence, individuals living in Basra peripheries exhibited the highest prevalence of anxiety, with 57.7% participants reporting being affected; this also showed a statistically significant difference (p-value = 0.022).

In terms of marital status, approximately half of married participants (50.9%) experienced anxiety, while about two-thirds of single participants (65.8%) and divorced/widowed participants (61.1%) reported anxiety, with these differences being statistically significant (p-value < 0.001).

Among health workers, about half (50.3%) reported anxiety, while the percentage among unemployed participants was 66.4%, indicating a statistically significant difference (p-value < 0.001).

Association of Diseases History of Participants and Anxiety

There was no significant statistical difference in the percentage of anxiety among those with personal COVID-19 infection, chronic diseases, or a family history of COVID-19 infection, with rates of 47.6%, 54.9%, and 58.2%, respectively as shown in (Table 4).

Table 3: Association between socio-demographic characteristics and anxiety.								
			Assessment				Total	p-value
			Normal	Mild	Moderate	Severe		
Age	18–27 years	No.	92	92	52	48	284	0.000
		%	32.4%	32.4%	18.3%	16.9%	100.0%	
	28–37 years	No	109	85	25	30	249	
		%	43.8%	34.1%	10.0%	12.0%	100.0%	
	38–47 years	No.	101	76	12	14	203	
		%	49.8%	37.4%	5.9%	6.9%	100.0%	
	48–57 years	No.	75	40	11	5	131	
		%	57.3%	30.5%	8.4%	3.8%	100.0%	
	58 years and above	No.	14	7	2	4	27	
		%	51.9%	25.9%	7.4%	14.8%	100.0%	
Sex	Male	No.	188	116	24	23	351	0.000
		%	53.6%	33.0%	6.8%	6.6%	100.0%	
	Female	No.	203	184	78	78	543	
		%	37.4%	33.9%	14.4%	14.4%	100.0%	
Residence	Basra center	No.	250	202	57	54	563	0.022
		%	44.4%	35.9%	10.1%	9.6%	100.0%	
	Basra peripheries	No.	119	78	40	44	281	
		%	42.3%	27.8%	14.2%	15.7%	100.0%	
	Other governorates	No.	22	20	5	3	50	
		%	44.0%	40.0%	10.0%	6.0%	100.0%	
Marital status	Married	No.	278	188	51	49	566	0.000
		%	49.1%	33.2%	9.0%	8.7%	100.0%	
	Single	No.	106	103	51	50	310	
		%	34.2%	33.2%	16.5%	16.1%	100.0%	
	Divorced/ widower	No.	7	9	0	2	18	
		%	38.9%	50.0%	0.0%	11.1%	100.0%	
Occupation	Health worker	No.	179	117	29	35	360	0.000
		%	49.7%	32.5%	8.1%	9.7%	100.0%	
	Non-health worker	No.	135	117	30	23	305	
		%	44.3%	38.4%	9.8%	7.5%	100.0%	
	Un employed	No.	77	66	43	43	229	
		%	33.6%	28.8%	18.8%	18.8%	100.0%	
Total		No.	391	300	102	101	894	
		%	43.74	33.56	11.40	11.30	100.0	

Table 4: Association of diseases history of participants and anxiety.							Total	p-value
			Assessment				Total	p-value
			Normal	Mild	Moderate	Severe		
Positive family history of COVID-19	No	No.	335	264	80	81	760	0.057
		%	44.1%	34.7%	10.5%	10.7%	100%	
	yes	No.	56	36	22	20	134	
		%	41.8%	26.9%	16.4%	14.9%	100%	
Any chronic disease	No	No.	317	255	84	74	730	0.069
		%	43.4%	34.9%	11.5%	10.1%	100 %	
	yes	No.	74	45	18	27	164	
		%	45.1%	27.4%	11.0%	16.5%	100 %	
Personal infection	No	No.	369	289	98	96	852	0.655
		%	43.3%	33.9%	11.5%	11.3%	100 %	
	Yes	No.	22	11	4	5	42	
		%	52.4%	26.2%	9.5%	11.9%	100%	
Total		No.	391	300	102	101	894	
		%	43.74	33.56	11.40	11.30	100.0	

DISCUSSION

About 56.26% of the studied sample experienced varying degrees of anxiety during the COVID-19 pandemic, with the highest percentage reporting mild anxiety (33.56%), followed by moderate (11.41%) and severe anxiety (11.3%). This prevalence is higher than that reported in a web-based cross-sectional study in China in 2020, where one-third of the 1501 participants exhibited anxiety disorders.[20]

In contrast, a web survey in Sweden found that 55% of the 507 participants reached the criteria for clinical depression, while 20.5% experienced anxiety and 60.9% reported insomnia. Regarding the prevalence of mental health disorders, mild anxiety was reported at 34.9%, moderate anxiety at 15.9%, and severe anxiety at 4.7%.[18] In our current study, the younger age group (18–27 years) exhibited the highest prevalence of anxiety, with approximately 67.6% affected, while the lowest prevalence was observed in the 48–57 years age group, demonstrating a statistically significant difference. This finding aligns with another study conducted in China in 2020, which revealed that younger participants (< 35 years) were more likely to develop anxiety and depressive symptoms (38%) during the COVID-19 outbreak compared to older participants (≥ 35 years) at

32.9%. However, the Chinese study found no significant difference in anxiety levels between males and female anxiety during COVID-19 outbreak,[3] which contrasts with the present study's findings that indicated a higher prevalence of anxiety among females (62.6%) with statistical significance.

In terms of residence, individuals living in Basra government peripheries exhibited the highest prevalence of anxiety (57.7%), which is contrary to a study in China that reported higher anxiety symptoms among urban residents compared to those participants who lived rurally.[21]

Regarding marital status, two-thirds of single participants (65.8%) reported anxiety, while half of married participants (50.9%) experienced anxiety, with these differences being statistically significant. This finding is consistent with Alsharji's study conducted in Kuwait during the COVID-19 pandemic, which reported anxiety levels of 68.7% among single individuals and 51.3% among married individuals.[22] This was different from a study in Iran during the COVID-19 outbreak, which found no significant difference in anxiety levels between married and single participants (50.5% and 51.1%, respectively).[23]

In this study, half of the health workers reported anxiety while the percentage of anxiety among unemployed participants was higher (66.4%), indicating a statistically significant difference. This finding contrasts with a study conducted by Huang and Zhao in China, which found no difference in anxiety levels among various occupations.[3]

The present study further revealed that 47.6% of individuals with personal COVID-19 infections experienced anxiety, which aligns with a study in the USA indicating that 20% of those infected with the coronavirus were diagnosed with a psychiatric disorder within 90 days.[17] This finding differs from a study with nearly 154,000 COVID-19 patients, in America which found that 35% were more likely to be diagnosed with anxiety in the months following infection compared to individuals without COVID-19 during the same period.[19]

CONCLUSIONS

This cross-sectional community-based study found that 56.26% of the participants experienced varying degrees of anxiety (mild, moderate and severe) during the COVID-19 pandemic. Socio-demographic characteristics such as age, sex, residence, marital status, and occupation were significantly associated with anxiety levels during the pandemic. In contrast, personal COVID-19 infection, chronic diseases, and family history of COVID-19 infection showed no significant association with anxiety disorders.

Ethical Considerations

The Basra Health Directorate granted consent for the study, and the purpose of the study was described in the Google form and the participants' permission was taken.

Limitations

The distribution of the electronic form to the general population in Basra and the necessity of collecting data online, necessitated by the COVID-19 pandemic, limited the study generalizability since the researchers could not disseminate the electronic questionnaire randomly and chosen randomized sample.

Recommendations

1. Further evaluation of individuals with moderate to severe anxiety is necessary for diagnosis and management.
2. An extended cross-sectional study involving the Iraqi adult population and other types of studies during any epidemic or pandemic is recommended to understand the effect of communicable diseases on mental health.
3. Provision of psychiatric consultation clinics offering phone and electronic counseling during such pandemics is advised.

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