




# Research Paper

## Psychological Impacts of COVID-19 on the General Population of Iran



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### ABSTRACT

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**Background:** During the COVID-19 pandemic, the main focus of studies was on physical impact of the disease, while psychological impacts were mainly neglected. Identifying the psychological impacts of the COVID-19 pandemic on the general population can help in planning and preparing for future pandemics. The current study aims to investigate the psychological impacts of the COVID-19 pandemic on the general population of Iran.

**Materials and Methods:** This cross-sectional survey study that was conducted online on 1735 Iranian people from April 21 to June 21, 2021. Perceived feelings during the COVID-19 pandemic were measured by Reynolds's self-report tool. The collected data were analyzed using descriptive statistics (frequency and percentage) and inferential statistics including chi-square test and independent t-test in SPSS software, version 22. The significance level was set at 0.05.

**Results:** The mean age of the respondents was 34.62±11.86 years. The most frequent perceived feelings were boredom (n=764, 44.0%), nostalgia (n=704, 40.6%), worry (n=613, 35.3%), and nervousness (n=591, 34.1%). Females, younger people, unemployed people, unmarried people, and those living in the urban areas experienced significantly higher levels of negative feelings.

**Conclusion:** The psychological impact of the COVID-19 pandemic on Iranian people is high, particularly among female, unmarried, and unemployed people. Therefore, supportive and psychological interventions during the pandemic and psychological rehabilitations after the pandemic are needed.

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## Introduction

**A** pneumonia-like disease with unknown etiology was identified on December 31, 2019, in Wuhan, China, which infected many people. A novel coronavirus (2019-nCoV) was introduced as the causing agent for this type of pneumonia [1]. The infection rate of the disease was high, creating many concerns, especially for the vulnerable people, since the first case of death due to this disease was a 61-year-old Chinese person [2]. On March 11, 2020, the COVID-19 virus spread globally, infecting many people in the world such that the [World Health Organization \(WHO\)](#) declared it as a pandemic [3]. The symptoms of COVID-19 were variable, ranging from mild symptoms to acute sickness [4]. At the time of writing this article (March 5, 2023), three years after the first wave, 680,610,521 people around the world had contracted the virus, and 6,805,012 people died. Multiple waves of this pandemic were later experienced in different countries, and new cases are still being diagnosed in some countries [5].

With the spread of the COVID-19, the [WHO](#) emphasized the importance of home quarantine and social distancing, which led to a significant reduction in social activities. These changes affected all age groups [6]. It also affected the access to food, occupational activities, and financial security [7]. Many behavioral changes had positive impact in different countries. Although these preventive measures were useful for physical health, they were not able to mitigate the negative effect of COVID-19 on mental health of people. The prolongation of the pandemic and the measures such as home quarantine caused mental health problems which can lead to more significant psychological problems, if neglected [8, 9]. The mental health consequences of COVID-19 have been reported in different countries [10-12]. These consequences included depression, anxiety, loneliness, isolation, post-traumatic stress disorder, boredom, obsession, anger, prolonged grief disorder, and sleeping problems [10-16]. The findings of a meta-analysis study showed that the global prevalence of depression and anxiety among adults and children during the COVID-19 pandemic were 25.2% and 20.5%, respectively. These symptoms were more prevalent among women and older adults [17]. In another study, the symptoms of anxiety were more frequent among COVID-19 patients (39.6%) than the general population. Furthermore, the prevalence of anxiety were more in the general population of countries in Africa (61.8%) than America (34.9%), European (30.7%), and Asian (24.5%) coun-

tries [18]. In addition to depression and anxiety, irritability and anger were also highly prevalent during the COVID-19 pandemic [19]. Demographic variables, such as gender, age, ethnicity, educational level, marital status, and occupational status, can affect the mental health consequences of COVID-19 [20].

Iran was also one of the countries affected by COVID-19. At the time of writing this article, 7,569,769 infection cases and 144,878 deaths had been reported in Iran. Identifying the mental health consequences of the COVID-19 pandemic in Iran can help with planning for controlling negative impact of future pandemics in the country. Therefore, current study aims to examine the mental health consequences of the COVID-19 pandemic for the general population of Iran.

## Materials and Methods

### Study design and samples

This is a cross-sectional survey that was conducted on Iranian people from all 31 provinces (Table 1). A convenience sampling method was used for sampling. The inclusion criteria were being Iranian citizen, and willingness to complete the questionnaires. Exclusion criteria were the return of incomplete questionnaire, or duplicate questionnaires. To determine the sample size, Cochran's formula was utilized. Considering the diversity in the prevalence of psychological disorders caused by COVID-19, a prevalence rate of 50% was determined. At a confidence level of 95% and considering a precision of 97%, the sample size was obtained as 1067. Since the sampling process was not randomized, the obtained value was multiplied by 1.5. Then, considering a share of 10% for non-completed questionnaires, the final sample size was set at 1760.

### Data collection tool

To collect data, an online questionnaire was prepared on the Cafe Pardazesh website. It included two sections measuring demographic characteristics and perceived feelings during the COVID-19 pandemic. The demographic characteristics included gender, age, place of residence, level of education, marital status, and employment status. The perceived feelings during the COVID-19 pandemic were measured using the self-report scale designed based on Reynolds et al.'s study [21]. This scale was translated from English to Persian. Then, a panel of experts including five psychologists and psychiatrists evaluated the content validity and the relevancy of translated scale for the Iranian samples during

**Table 1.** Geographical distribution of the participants

Province	No. (%)
Alborz	53(3.1)
Ardabil	46(2.7)
Bushehr	92(5.3)
Chaharmahal & Bakhtiari	63(3.6)
East Azerbaijan	35(2)
Fars	62(3.6)
Guilan	43(2.5)
Golestan	137(7.9)
Hamadan	62(3.6)
Hormozgan	17(1)
Ilam	19(1.1)
Isfahan	63(3.6)
Kerman	26(1.5)
Kermanshah	21(1.2)
Khuzestan	56(3.2)
Kohgiluyeh & Boyer-Ahmad	34(2)
Kurdistan	24(1.4)
Lorestan	22(1.3)
Markazi	61(3.5)
Mazandaran	36(2.1)
North Khorasan	13(0.7)
Qazvin	21(1.2)
Qom	92(5.3)
Razavi Khorasan	94(5.4)
Semnan	12(0.7)
Sistan & Baluchestan	33(1.9)
South Khorasan	28(1.6)
Tehran	332(19.1)
West Azerbaijan	41(2.4)
Yazd	37(2.1)
Zanjan	60(3.5)
Total	1735(100)

**Table 2.** Demographic characteristics of the respondents

Variables	Group	No. (%)
Sex	Female	1337(77.1)
	Male	398(22.9)
Place of residence	Urban	1629(93.9)
	Rural	106(6.1)
Educational level	Primary school	27(1.6)
	Secondary school	37(2.1)
	High school	64(3.7)
	Diploma	433(25)
	Bachelor’s degree	660(38)
	Master’s degree	327(18.8)
Marital status	PhD	187(10.8)
	Single	653(37.6)
	Married	1031(59.4)
	Divorced	30(1.7)
Employment status	Widow	21(1.3)
	Employed	871(50.2)
	Unemployed	864(49.8)

the COVID-19 pandemic. Also, the tool was sent to 10 people from of general population to confirm the clarity of items. These feelings included anger, annoyance, fear, guilt, happiness, helplessness, loneliness, nervousness, sadness, frustration, agitation, boredom, nostalgia (wistful affection for the past), worry, and relief.

The online questionnaire distributed throughout the country with the help of a representative selected from each province. The representative shared the link of the questionnaire on social networks. The data collection started from April 21 to June 21, 2021. About 1041(57%) of the questionnaires were completed during the first half of this period, while 639(35%) were completed during the second half.

**Statistical analysis**

Of 1827 questionnaires. 92 were excluded due to being incomplete. Finally, the data of 1735 questionnaires were

analyzed. The descriptive statistics (frequency and percentage) and inferential statistics (chi-square test and independent t-test) were used for data analysis in SPSS software, version 22. The significance level was set at 0.05.

**Results**

The mean age of the respondents was 34.62±11.86 years. Among participants, 1337(77.1%) were female, 660(38%) had a bachelor’s degree, and 1031(59.4) were married. The demographic characteristics of the respondents are presented in [Table 2](#).

The most frequent feeling experienced by the respondents during the COVID-19 pandemic was boredom (44.0%), followed by nostalgia (40.6%), worry (35.3%), nervousness (34.1%), and fear (33.3%). Moreover, 8.2% of the participants had experienced relief and 9.3% happiness ([Table 3](#)).

**Table 3.** Perceived feelings during the COVID-19 pandemic

Feelings	No. (%)
Boredom	764(44)
Nostalgia	704(40.6)
Worry	613(35.3)
Nervousness	591(34.1)
Fear	577(33.3)
Sadness	509(29.3)
Frustration	508(29.3)
Agitation	447(25.8)
Loneliness	416(24)
Anger	363(20.9)
Helplessness	360(20.7)
Annoyance	238(13.7)
Happiness	162(9.3)
Relief	143(8.2)
Guilt	105(6.1)

Table 4 presents the frequency of feelings based on gender. The results from the chi-square test showed a significant difference in the perceived feelings in terms of gender, where women experienced significantly more fear, sadness, nostalgia, nervousness, helplessness, and frustration compared to men.

Table 5 shows the frequency of feelings based on age. As can be seen, people with a higher mean age experienced significantly lower levels of anger, annoyance, fear, guilt, happiness, helplessness, loneliness, nervousness, sadness, frustration, agitation, boredom, and nostalgia.

Table 6 presents the frequency of feelings based on educational level. The results revealed a significant difference in the feelings of annoyance, guilt, happiness, helplessness, agitation, and worry in terms of educational level.

Table 7 shows the frequency of feelings based on employment status. The results from chi-square test showed that employed people experienced significantly lower levels of perceived feelings compared to unemployed people.

According to the results in Table 8, those living in the city experienced significantly higher levels of anger, helplessness, sadness, frustration, agitation, nostalgia, worry, and relief, compared to those living in rural areas.

Table 9 shows the frequency of feelings based on marital status. As can be seen, married people experienced significantly lower levels of perceived feelings compared to unmarried people.

## Discussion

At the global level, the focus of studies related to COVID-19 has been on clinical symptoms and physical effects of the disease as well as the development of different vaccines. The psychological effects of this disease are also important, since psychological disorders may remain for a long time and create changes in the lifestyle. As a result, the main objective of the current study was to evaluate and explore the mental health consequences of COVID-19 for Iranian people.

Based on the findings, the most frequent feelings experienced by the respondents during the COVID-19 pan-

**Table 4.** Perceived feelings during the COVID-19 pandemic based on gender

Feelings	No. (%)		X <sup>2</sup>	P
	Female	Male		
Anger	286(21.4)	77(19.3)	0.78	0.379
Annoyance	179(13.4)	59(14.8)	0.53	0.465
Fear	476(35.6)	101(25.4)	14.45	0.001*
Guilt	84(6.3)	21(5.3)	0.55	0.46
Happiness	116(8.7)	46(11.6)	3.01	0.083
Helplessness	295(22.1)	65(16.3)	6.13	0.013*
Loneliness	344(25.7)	72(18.1)	9.82	0.002*
Nervousness	478(35.8)	113(28.4)	7.4	0.007*
Sadness	420(31.4)	89(22.4)	12.12	0.001*
Frustration	410(30.7)	98(24.6)	5.41	0.002*
Agitation	345(25.8)	102(25.6)	0.01	0.944
Boredom	605(45.3)	159(39.9)	3.5	0.061
Nostalgia	581(43.5)	123(30.9)	20.04	0.001*
Worry	497(37.2)	116(29.1)	8.65	0.003*
Relief	110(8.2)	33(8.3)	0.01	0.967

\*Significant (P<0.05) (chi-square test).

**Table 5.** Perceived feelings during the COVID-19 pandemic based on age

Feelings	Group With No Perceived Feelings		Group With Perceived Feelings		t	P
	No.	Mean±SD	No.	Mean±SD		
Anger	1357	35.80±11.92	361	30.26±10.52	8.64	0.001*
Annoyance	1481	35.16±11.70	237	31.39±12.33	4.56	0.001*
Fear	1144	35.35±12.26	574	33.21±10.88	3.55	0.001*
Guilt	1614	35.07±11.82	104	27.96±10.39	5.99	0.001*
Happiness	1556	35.17±11.73	162	29.53±11.90	5.82	0.001*
Helplessness	1361	35.65±12.22	357	30.77±9.43	7.02	0.001*
Loneliness	1304	35.49±11.58	414	31.94±12.32	5.35	0.001*
Nervousness	1130	36.24±12.14	588	31.56±10.65	8.22	0.001*
Sadness	1209	35.74±11.96	509	32.01±11.17	6.03	0.001*
Frustration	1211	36.30±11.89	507	30.67±10.79	9.55	0.001*
Agitation	1272	35.78±11.91	446	31.37±11.06	6.84	0.001*
Boredom	957	36.78±12.20	761	31.94±10.82	8.70	0.001*
Nostalgia	1018	35.46±11.71	700	33.43±11.97	3.50	0.001*
Worry	1110	34.94±12.27	608	34.08±11.05	1.49	0.137
Relief	1575	34.68±11.83	143	34.11±12.15	0.55	0.580

\*Significant (P<0.05) (independent t-test). SD: Standard deviation.

**Table 6.** Perceived feelings during the COVID-19 pandemic based on the educational level

Feelings	No. (%)				X <sup>2</sup>	P
	Low Education	Diploma	Bachelor's Degree	Master's Degree/PhD		
Anger	24(18.8)	96(22.2)	122(18.5)	121(23.5)	5.27	0.153
Annoyance	20(15.6)	68(15.7)	71(10.8)	79(15.4)	7.91	0.048*
Fear	38(29.7)	128(29.6)	225(34.1)	186(36.2)	5.59	0.133
Guilt	10(7.8)	36(8.3)	29(4.4)	30(5.8)	7.83	0.050*
Happiness	17(13.3)	49(11.3)	46(7)	50(9.7)	8.82	0.032*
Helplessness	11(8.6)	83(19.2)	130(19.7)	136(26.5)	22.8	0.001*
Loneliness	33(25.8)	114(26.3)	156(23.6)	113(22)	2.7	0.440
Nervousness	37(28.9)	155(35.8)	210(31.8)	189(36.8)	5.25	0.154
Sadness	31(24.2)	140(32.3)	178(27)	160(31.1)	6.07	0.108
Frustration	41(32)	134(30.9)	186(28.2)	147(28.6)	1.55	0.671
Agitation	31(24.2)	134(30.9)	148(22.4)	134(26.1)	10.12	0.018
Boredom	48(37.5)	200(46.2)	288(43.6)	228(44.4)	3.1	0.377
Nostalgia	42(32.8)	175(40.4)	290(43.9)	197(38.3)	7.38	0.061
Worry	25(19.5)	140(32.3)	251(38)	197(38.3)	19.81	0.000*
Relief	7(5.5)	35(8.1)	46(7)	55(10.7)	6.84	0.077

\*Significant (P<0.05) (chi-square test).

**Table 7.** Perceived feelings during the COVID-19 pandemic based on employment status

Feelings	No. (%)		X <sup>2</sup>	P
	Employed	Unemployed		
Anger	151(17.3)	212(24.5)	13.59	0.001*
Annoyance	99(11.4)	139(16.1)	8.17	0.004*
Fear	296(34)	281(32.5)	0.42	0.518
Guilt	38(4.4)	67(7.8)	8.78	0.003*
Happiness	65(7.5)	97(11.2)	7.26	0.007*
Helplessness	166(19.1)	194(22.5)	3.04	0.081
Loneliness	170(19.5)	246(28.5)	19.08	0.001*
Nervousness	257(29.5)	334(38.7)	16.17	0.001*
Sadness	232(26.6)	277(32.1)	6.16	0.013
Frustration	213(24.5)	295(34.1)	19.66	0.001*
Agitation	190(21.8)	257(29.7)	14.27	0.001*
Boredom	357(41)	407(47.1)	6.59	0.001*
Nostalgia	311(35.7)	393(45.5)	17.21	0.001*
Worry	315(36.2)	298(34.5)	0.53	0.466
Relief	74(8.5)	69(8)	0.15	0.699

\*Significant (P<0.05) (chi-square test).

**Table 8.** Perceived feelings during the COVID-19 pandemic based on place of residence

Feelings	No. (%)		X <sup>2</sup>	P
	Urban Areas	Rural Areas		
Anger	352(21.6)	11(10.4)	7.59	0.006*
Annoyance	228(14)	10(9.4)	1.75	0.186
Fear	541(33.2)	36(34)	0.03	0.874
Guilt	100(6.1)	5(4.7)	0.35	0.552
Happiness	151(9.3)	11(10.4)	0.14	0.704
Helplessness	349(21.4)	11(10.4)	7.39	0.007*
Loneliness	398(24.4)	18(17)	3.03	0.082
Nervousness	563(34.6)	28(26.4)	2.94	0.086
Sadness	489(30)	20(18.9)	5.97	0.015*
Frustration	487(29.9)	21(19.8)	4.89	0.027*
Agitation	430(26.4)	17(16)	5.58	0.018*
Boredom	727(44.6)	37(34.9)	3.82	0.050*
Nostalgia	676(41.5)	28(26.4)	9.39	0.002*
Worry	589(36.2)	24(22.6)	7.96	0.005*
Relief	141(8.7)	2(1.9)	6.03	0.014*

\*Significant (P<0.05) (chi-square test).

demic included boredom, nostalgia, and worry. Other studies performed in Asian countries, including India [22], Philippines [23], China [24], and Saudi Arabia [25], have reported different prevalence rates of psychological disorders. In these studies, the prevalence of depression were reported as about 10, 13, 27, and 22%, respectively, while the prevalence of anxiety were about 29, 8, 22, and 20%, respectively. Also a study in Iran showed that 15% and 20% of the general population had depressive and anxiety symptoms during the COVID-19 pandemic, respectively [26]. Despite the difference in the prevalence rate, the type of measurement tools, and psychological disorders, the majority of studies has indicated the increase in the level of negative feelings and emotions during the pandemic. Although depression and anxiety were not evaluated in the current study, the reported perceived feelings such as helplessness and sadness can be a symptom of depression and anxiety. Therefore, it can be consistent with the findings of the studies conducted in China and Saudi Arabia. In addition to the fatal nature of the disease and the fear of the infection, the prevalence of negative feelings can be due to the restrictions in social

gatherings and the spread of numerous false news about the virus in mass media and online social networks [27].

A study in India [22] reported that some people experienced positive emotions as well during the quarantine, resulting in better relationships with family members. In the current study, the feeling of happiness was not prevalent; however, it was reported more significantly among individuals with lower educational levels. This may be because of spending more time with family. Nonetheless, the individuals with lower levels of education reported higher levels of annoyance. While spending more time with family can bring happiness, the lower capacity for resolving family issues can result in higher levels of annoyance among family members including spouses, parents or children.

Moreover, the findings showed that the employed people had lower levels of negative feelings during the pandemic, while people who were not working (due to the business closure) perceived higher level of negative feelings, which can have long-term effects on them since



**Table 9.** Perceived feelings during the COVID-19 pandemic based on marital status

Feelings	No. (%)		X <sup>2</sup>	P
	Unmarried	Married		
Anger	194(27.6)	169(16.4)	31.52	0.001*
Annoyance	130(18.5)	108(10.5)	22.57	0.001*
Fear	245(34.8)	332(32.2)	1.27	0.259
Guilt	69(9.8)	36(3.5)	29.29	0.001*
Happiness	92(13.1)	70(6.8)	19.48	0.001*
Helplessness	198(28.1)	162(15.7)	47.53	0.001*
Loneliness	229(32.5)	187(18.1)	47.53	0.001*
Nervousness	275(39.1)	316(30.6)	13.18	0.001*
Sadness	252(35.8)	257(24.9)	23.84	0.001*
Frustration	255(36.2)	253(24.5)	27.57	0.001*
Agitation	225(32)	222(21.5)	23.78	0.001*
Boredom	367(52.1)	397(38.5)	31.51	0.001*
Nostalgia	308(43.8)	396(38.4)	4.95	0.026*
Worry	257(36.5)	356(34.5)	0.72	0.398
Relief	64(9.1)	79(7.7)	1.13	0.288

\*Significant (P<0.05) (chi-square test).

they need welfare support from the government during this period until returning to their jobs [28]. In the current study, women had significantly higher levels of fear, sadness, and helplessness compared to men, which consistent with other studies [23, 27] and can be due to the reduced level of social interactions and emotional support during the pandemic. Some studies in Iran which investigated the psychological impact of COVID-19 in the general population or infected patients, reported that the anxiety level was higher in men while depression level was higher in women [29, 30]. Consistent with some studies [23, 26] and in disagreement with some other studies [31], the reported levels of perceived negative feelings decreased with the increase of age. This can be because ageing is accompanied by the increased experience of different adverse events and having financial security and lower fear of death by COVID-19.

The findings also showed that married people had lower levels of negative feelings compared to unmarried people, indicating the buffering effect of social support from the spouse during crises [26, 32]. The pandemic had more

significant negative psychological impact on unmarried people, which requires psychological interventions after the pandemic to prevent the continuation of these effects. Furthermore, people living in cities perceived more negative feelings compared to those living in rural areas, may be because COVID-19 spread more in cities.

The prevalence of mental health problems has been more significant during the COVID-19 pandemic compared to previous pandemics, such as severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS). This necessitates a more serious focus on psychological interventions and rehabilitation. Some studies claimed that people with better health literacy or health status had lower anxiety during the COVID-19 pandemic [33, 34]. This can be recommended in policymaking for future pandemics, especially for vulnerable groups such as female, unmarried, or unemployed people.

Considering the limitations of the current study including cross-sectional design and the use of an online self-report questionnaire, longitudinal studies are recommended

using specific screening tools to analyze the long-term mental health problems during the COVID-19 pandemic. Moreover, most of participants were female, since women are more likely to participate in online surveys [35]. This bias of response and sampling can affect the results.

## Conclusion

Considering the prevalence of perceived negative feelings among Iranian people during the COVID-19 pandemic, particularly among female, unmarried, and unemployed people, there is a need to provide more support and psychological interventions to people during and after the pandemics in Iran which is suffering from shortage of medicines and equipment due to economic sanctions which highlights the need for social support and interventions to increase resilience of people in future pandemics.

## Ethical Considerations

### Compliance with ethical guidelines

After explaining the study objectives to the participants and ensuring the confidentiality of their information, informed consent was obtained from them. The study was approved by the Research Ethics Committee of the [University of Social Welfare and Rehabilitation Sciences](#) (Code: IR.USWR.REC.1400.145).

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### Authors' contributions

Conceptualization: Yadollah Abolfathi Momtaz and Nasibeh Zanjari; Methodology and formal analysis: Yadollah Abolfathi Momtaz; Writing and final approval: All authors.

### Conflict of interest

The authors declared no conflict of interest.

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