Original Article

Mental health of the people of northern Iran during the quarantine time of 2020 following the coronavirus epidemic

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Abstract:

BACKGROUND: Coronavirus (COVID-19) is an infectious respiratory disease. Quarantine is often accompanied by unpleasant experiences for those who go through it. The aim of this study was to determine the mental health status of people during quarantine in northern Iran.

MATERIALS AND METHODS: This cross-sectional study was conducted during the quarantine period of coronavirus. Conventional sampling was done from March 6 to April 6. Six hundred and forty-two individuals were included. Inclusion criteria were living in Sari and being home quarantined during the corona outbreak. Exclusion criteria included hospitalization history due to corona and unwillingness to participate in the study. In this study, the General Health Questionnaire-28 was used online to collect the required data. To analyze the data, descriptive and inferential statistics (*t*-test, analysis of variance, and correlation coefficient) were used.

RESULTS: In this study, individuals were included in the investigation with a mean age of 38.74 ± 11.89 (ranged from 15 to 73). Most of the participants were female (72.85%) and married (71.34%). According to the results, 21.5% of the participants had poor mental health. Mean mental health scores have a statistically significant relationship with gender, marital status, education, occupation, quarantine period, patients with corona, and exposure to a patient with corona ($P \leq 0.05$). Furthermore, a negative correlation coefficient was observed between age and mental health score (correlation coefficient = −0.31, significance >0.001).

CONCLUSION: The average score of mental health has a significant relationship with gender, marital status, education, occupation, quarantine period, corona, and exposure to a patient with corona. Given the high prevalence of mental disorders in people during the COVID-19 epidemic, educating people and planning to reduce the psychological effects of the epidemic can be helpful.

Keywords:

COVID-19, Iran, mental health, persons, quarantine

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Introduction

Coronavirus (COVID-19) is an infectious respiratory disease that first appeared in Wuhan, China, in December 2019.[1] The disease spread rapidly in many countries of the world in a short time (<4 months) and infected all countries around the world.[2-4]

The implementation of health policies, despite the positive consequences, has led to negative psychological effects at the community level. Fear of illness, fear of death, spreading false news and rumors, interfering with daily activities, rules prohibiting or restricting travel and traffic, reducing social relationships (colleagues, friends, and family), occupational and

financial problems, and other several consequences, threaten the mental health of community members.[5]

Quarantine is the isolation and restriction of movement and commuting of people who are potentially exposed to an infectious disease to ensure that they are not ill to reduce their risk of contracting the disease.[6]

Quarantine is often accompanied by unpleasant experiences for those who go through it. Separation from loved ones, loss of freedom, uncertainty about the state of illness, and boredom can have significant effects and consequences. Cases of suicide,[7] unbridled anger, and create litigation[8] have been reported following past quarantine.

In the United States, thousands were subject to legal quarantine or "self-quarantine."[9] Findings from a survey conducted among ordinary people in China in early 2020 after the release of COVID-19, show that out of about 2019 participants in this study online, about 4.6% of people with high levels of symptoms of posttraumatic stress have been reported.[10] The findings of a meta-analysis of 96 articles that examined the effects of quarantine on medical staff and members of the community during the occurrence of infectious diseases indicate the negative psychological effects of quarantine, indicating symptoms of posttraumatic stress disorder (PTSD), including confusion and anger. It also revealed psychological stressors such as fears of prolonged quarantine, uncertainty in the future, fear of illness, boredom and inadequacy, inappropriate facilities, false and inadequate information, as well as financial and economic losses as a result of being in long-term quarantine.[11]

Considering the epidemic of COVID-19 disease, which affects almost all important economic, political, social, and even military aspects of all countries in the world, it is important to discuss the psychological effects of this viral disease at different levels of society. Since information on the mental health status of people during epidemics and quarantine is essential for health planning. To the best of our knowledge, there has not been any study conducted in northern Iran, since the north of Iran is one of the red and high-risk areas of COVID-19 disease, and many travelers choose these areas for their travel during the holidays. The present study aims to determine the mental health status of people during quarantine time in northern Iran.

Materials and Methods

This cross-sectional study was conducted by convenient sampling on the people of Sari (northern Iran) in 2020 during the quarantine time due to the coronavirus from March 6 to May 6. The study population included all people who had access to social networks and could connect to the Internet to answer the questions. For this purpose, the questionnaire was prepared online and the questionnaire link was sent to individuals in public and in persons (on social networks). By giving explanations about the questionnaire and the importance of the study results in future planning, individuals were asked to complete the questionnaire.

In this study, 642 people were included. Inclusion criteria were living in Sari and being home quarantined during the corona outbreak. All individuals voluntarily participated in the survey with a written consent form. Exclusion criteria also included history of hospitalization due to coronation, unwillingness to participate in the study, failure to complete the questionnaire items, or completing the questionnaire twice.

In this study, the General Health Questionnaire-28 was used online to collect the required data. This questionnaire was developed by Cold Berg and Heller (1979) and evaluates the patient's symptoms and various health conditions from 1 month before the test.

Factor analysis of this questionnaire revealed four subscales. Each subscale includes seven questions. These subscales include physical symptoms, anxiety and sleep disorders, social dysfunction, and depression. The questions are arranged in order, as questions 1–7 related to physical symptoms, 8–14 related to anxiety symptoms and sleep disorders, 15–21 related to social dysfunction, and 22–28 related to depression. A higher score on this scale indicates more pathological symptoms. The maximum score is 84 and the cut point is 23. Answers are scored based on a four-point Likert scale (0–3), with a score of "0" for no or minimum, 1 for mild, 2 for moderate, and 3 for severe. Thus, the range of scores fluctuates from 0 to 84.[12] The Persian form of this questionnaire was examined by Taghavi with three methods of re-measurement, composition, and Cronbach's alpha, which obtained reliability coefficients of 70%, 93%, and 90%, respectively.[13]

Code of ethics from the National Ethics Committee was obtained (code number of ethics IR.MAZUMS. REC.1399.039) and also observing the information confidentiality framework were among the ethical considerations observed in this research. To analyze the data, descriptive statistics (tables, frequency distribution, mean, and standard deviation) and inferential (independent *t*-test and analysis of variance) were used to compare the mean general health score between different groups and also the correlation coefficient was used to examine the correlation between age and general health score after confirming

the normality of the data using SPSS 16 (version 16) (Released 2007, SPSS for Windows, Version 16.0, SPSS Inc., Chicago, USA) software.

Results

In this study, the mean age of the participants was 38.74 ± 11.89 (ranged from 15 to 73) years. Most of the participants were female (72.85%) and married (71.34%). In terms of occupation, most of the participants (44.01%) were employed. In terms of education level, most had a bachelor's degree (43.01) [Table 1].

According to the results, 21.5% of the participants had poor mental health; 4.9% had physical disorders, 2.5% had social dysfunction, 7.5% had anxiety symptoms, and 3.2% had depression [Table 2].

Analytical results showed that the mean score of mental health had a statistically significant relationship with gender, marital status, education, occupation, quarantine period, corona disease, and exposure to a patient with corona disease ($P \leq 0.05$), so that men had better mental health than women. Married people had better mental health than single people. People with less education had less mental health [Table 1].

The mean score of mental health was not significantly associated with corona disease and occupation. The mental health status of individuals with a history of corona or exposure to a patient with corona disease was worse. Furthermore, a negative correlation coefficient was observed between age and mental health score (correlation coefficient = −0.31, significance >0.001), so that young people were in a better condition in terms of mental health.

Discussion

The findings of this study showed that 21.5% of the participants had poor mental health. The most common disorder was anxiety disorder. In the study of Gammon *et al.*, 33% of the participants who were isolated had poor mental health status.[14] Among the subdomains of mental health, all studies showed a high prevalence of anxiety among participants.[15-17]

The results of a study on sleep quality in people who isolated themselves for 14 days during the release of COVID-19 in January 2020 in China showed that sleep disorders were associated with increased anxiety and stress in these people. The authors suggested appropriate social support to improve the sleep quality of these patients.[18]

Another study conducted in early 2020 among ordinary people after the release of COVID-19 in China showed that out of about 2019 participants who participated in this study online, about 4.6% of people with high levels of symptoms had posttraumatic stress.[11] It seems concerns associated with the risk of disease, career status and source of income individuals and families as well as a long period of home quarantine can affect the incidence of psychological symptoms.

Another finding of this study was the negative correlation coefficient between age and mental health score; that is, as people got older, their mental disorder increased. This finding is consistent with the results of Noorbala *et al*. and Moghadam Tabrizi studies.[19,20] According to the results of the present study, men had better mental health than women, which is consistent with the study of Zhang, Lai, Mazza, Wang *et al*., and Ozdin and Bayrak Ozdin.[21-25] However, it does not agree with the study of Chen *et al*. and Gao *et al*.[26,27] Perhaps, this is due to enduring the problems of life and children and the tendency of less women to use cyberspace.

In this study, married people had a better mental status than single people. The Cao study also found that students living alone were more likely to develop mental health disorders.[28] The Saberian study also confirms that people who do not live with their spouses due to death, divorce, or other reasons suffer from health problems.[29]Therefore, in order to reduce the mental disorders of such people, it is recommended to provide counseling and financial resources to solve family problems.

The results of this study showed that people with less education have less mental health, which is consistent with the results of the study by Saberian and Liu *et al*.[29,30] The mean score of mental health had a statistically significant relationship with the quarantine period. Findings from several studies show that prolonged duration of quarantine is associated with poorer mental health, especially with PTSD,[31,32] avoidance behaviors, and anger.[33] Findings from one

Table 1: Mental health and its dimensions among people of Sari northern Iran during the quarantine time of 2020 following the coronavirus epidemic

Status/dimensions	Total mental health	Physical function	Social function	Anxiety and sleep disorders	Depression
Healthy	486 (78.5)	464 (73.4)	517 (81.4)	426 (66.9)	542 (85.9)
Suspicious	-	137 (21.7)	102 (16.1)	163 (25.6)	69 (10.9)
Sick	133 (21.5)	31 (4.9)	16 (2.5)	48 (7.5)	20 (3.2)

Table 2: Relationship between mental health and demographic variables

Variable	Subvariable	Frequency (%)	Mean±SD	*P*
Gender	Man	168 (27.15	14.57±11.51	0.01
	Female	451 (72.85)	17.29±13.0	
Marital status	Single	169 (27.65)	18.97±12.91	0.03
	Married	442 (71.34)	15.52±12.41	
Level of education	High school	25 (4.03)	19.36±15.19	0.005
	Diploma	87 (14.19)	16.74±13.75	
	Associate degree	40 (6.52)	12.64±10.22	
	Bachelor	268 (43.71)	16.76±12.01	
	MA	151 (24.63)	16.50±12.55	
	P.H.D	42 (6.85)	16.95±14.88	
Job	Manual worker	13 (2.1)	13.92±10.53	0.005
	Employee	273 (44.1)	16.95±12.39	
	Unemployed	187 (30.21)	18.44±15.27	
	Self-employment	98 (15.83)	14.68±8.71	
	Retired	48 (7.75)	11.54±7.93	
Length of quarantine (week)	Less than a week	59 (9.3)	14.74±0.12.19	0.004
	1	46 (7.3)	20.68±0.16.79	
	1-2	32 (5.1)	15.28±8.92	
	2-3	46 (7.3)	20.46±16.41	
	3-4	78 (12.3)	12.36±8.20	
	4-5	390 (61.7)	17.08±12.72	
History of COVID-19	NO	592 (92.8)	16.12±12.38	0.003
	Yes	46 (7.2)	22.06±15.10	
Family members with COVID-19	No	568 (89.0)	20.97±16.09	0.39
	Yes	70 (11.0)	15.95±12.07	
dealing with a patient COVID-19	Yes	153 (24.0)	18.81±13.79	>0.001
	Unknown	233 (36.5)	18.42±13.72	
	No	252 (39.5	13.45±10.17	

SD=Standard deviation

study revealed that PTSD was significantly longer in quarantines lasting more than 10 days than in short-term quarantines.[31]

The mean score of mental health was significantly associated with corona, which is consistent with Zhang's study.[21] In a study conducted in a Chinese hospital, the anxiety and depression index in people with respiratory problems (patients infected with COVID-19 and had more pneumonia than healthy people.[34] As these people need psychological interventions in addition to treating their illness, the use of psychological interventions will significantly reduce both the anxiety and depression rates in patients.

The mean score of mental health had a statistically significant relationship with exposure to a patient with corona. Lai and Liu also showed in their study that people who are in direct contact with patients infected with COVID-19 have a higher anxiety index.[22,29] Therefore, caring for and maintaining mental health in people exposed to COVID-19-infected patients is of greater importance. The use of social media is effective in increasing and promoting health behaviors.[35]

This research was conducted among the people of Sari. Managers of Mazandaran University of Medical Sciences can use the results of this study in planning and implementing mental health interventions in the province. It is suggested that such studies should be conducted in other parts of the country as well. Due to the pandemic conditions of the disease, this study was conducted in absentia and through virtual networks. Many adults who were unable or unable to use virtual networks did not participate in the study. Furthermore, there was no complete supervision of the researcher on how to perform.

Conclusion

The average score of mental health has a significant relationship with gender, marital status, education, occupation, quarantine period, corona, and exposure to a patient with corona disease. Given the high prevalence of mental disorders in people during the COVID-19 epidemic, educating people and planning to reduce the psychological effects of the epidemic can be helpful. The government should also pay more attention to the mental health of the people, including the provision of

free mental health services with easy access, including online counseling, outpatient counseling, and through radio and television programs.

Conflicts of interest

There are no conflicts of interest.

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