Journal of Fundamentals of Mental Health

Mashhad University of Medical Sciences

Psychiatry and Behavioral Sciences Research Center

Original Article

The relationship between health anxiety of COVID-19 and participation of the Iranian population during the pandemic

Reza Shamabadi[1]; Zahrasadat Khorshidarab[2]; *Ali Kamrani[3]; Behnaz Kazeroonizand[4]

[1]Ph.D. student in educational psychology, Department of Educational and Counseling Psychology, Faculty of Educational Sciences and Psychology, Ferdowsi University of Mashhad, Mashhad, Iran.
[2]Bachelor of Art in Educational Sciences, Ferdowsi University of Mashhad, Mashhad, Iran.
[3]MS. in science in occupational therapy, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.
[4] Ph.D. student in psychology, Department of Psychology, Faculty of Psychology and Educational Sciences, Ferdowsi University of Mashhad, Mashhad, Iran.

Abstract

Introduction: Considering the COVID-19 pandemic and the need to conduct research in various fields related to this issue, and participation as one of the main health factors according to World Health Organization, the present study aimed to investigate the relationship between anxiety caused by COVID-19 and participation during the social distancing among Iranian population.

Materials and Methods: In this cross sectional-correlation study, 108 participants completed health anxiety and participation questionnaires. Data analyzed through Kolmogorov-Smirnov test, Spearman ranking correlation test, and SPSS v24 software.

Results: The findings showed that men showed more participation during the COVID-19 pandemic and social distancing. Greater fear of getting infected by COVID-19 and general health concerns resulted in lower participation of individuals (r= 0.194, $P< 0.05$). The higher general health concern due to COVID-19 pandemic resulted in more restrictions on people's lives (r= 0.121, $P< 0.05$).

Conclusion: The findings of the present study indicated the role of gender in people's participation during social distancing and also the role of health anxiety due to the COVID-19 outbreak on participation and restrictions on people's participation. The relationship between participation and health constraints and anxiety can be used as an outline for guiding and designing smart distancing policies.

Keywords: COVID-19, Health anxiety, Participation

Please cite this paper as:
Shamabadi R, Korshidarab Z, Kamrani A, Kazeroonizand B. The relationship between health anxiety of COVID-19 and participation of the Iranian population during the pandemic. Journal of Fundamentals of Mental Health 2021 Sep-Oct; 23(5): 341-347.

Introduction

COVID-19, a virus from the Coronaviruses Family, started to spread from Wuhan, China. It spread throughout China and numerous countries rapidly, affecting many individuals. To date, the virus has been found to target the lower respiratory tract, especially the lungs, and it manifests itself with similar symptoms as pneumonia. Preliminary studies have focused on describing the virus's clinical course, reporting severe cases, and treatment methods. Furthermore, due to the current situation and the evolutionary features of this epidemic, there is an urgent need to expand studies in this field (1,2). One of the primary areas where there is a need to expand studies regarding COVID-19 is

***Corresponding Author:**
Tehran University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.
al.kamrani@uswr.ac.ir
Received: Apr. 11, 2021
Accepted: Jul. 20, 2021

regarding the complications that it causes, especially the individual's emotional and behavioral reactions to the epidemic and restrictions on the various dimensions of participation for the precautionary measures of this epidemic (3), which are related to rehabilitation services and studies. Generally, the purpose of the rehabilitation service is to achieve positive changes in the client's performance for these services.

Participation is a key concept in the World Health Organization's International Classification of functioning, Disability, and Health (ICF) (4). Participation in the ICF is defined as "being involved in different life situations," and participation constraints are defined as "problems that a person may experience about participating in life situations" (5). Recent studies showed that accurate and precise information about the issues and crises that have arisen could significantly impact how people participate and determine the level of people's participation (6).

As mentioned earlier, emotional issues can cause problems with people's participation in life situations (7), and one of these issues is health anxiety. Health anxiety is a pervasive experience that arises when it is believed that feelings or physical changes indicate a serious illness, and its severe manifestations have been identified in the classification of psychiatric disorders as a disease anxiety disorder. Nonetheless, regardless of this classification, health anxiety can significantly impact social and occupational performance (participation) whenever it becomes severe (8).

Emotional traits such as anxiety levels and personality traits, including coping with anxiety during crises and issues, can have a substantial effect on a person's recovery and participation and determine the success of treatment and the rate of disease. Examples of worries caused by coronavirus include economic concerns about job loss, intolerance to the ambiguity of the current situation, health anxiety due to exposure to media information regarding the dangers of the new coronavirus for loved ones (9-11).

In a study in 2021 with a large sample of 638,226 people, it was found that restrictions imposed by governments on individuals, such as restrictions on transportation, cause more anxiety in daily life (12). Another study in 2021 suggests that governments should respect the self-determination of individuals because restrictions imposed by governments lead to various side effects and costs and exorbitant costs (13). Another study in Germany in 2021 found that as the severity and early days of the corona pandemic progressed, the psychological symptoms of the corona, such as corona anxiety, gradually decreased (14).

Due to the epidemic of COVID-19 and the urgent need for further studies to identify the various factors and dimensions of this epidemic, health anxiety caused by this virus (that will have significant effects on the lives of people around the world), the need to identify its dimensions and different levels of participation of individuals during the epidemic of this virus, and of course, the interactions of health anxiety caused by this epidemic and the participation of individuals, this study investigated the relationship between health anxiety for COVID-19 and participation during the social distancing period among the Iranian population.

Materials and Methods

The present study was conducted as a cross-sectional study on a sample of the Iranian population using the available sampling method, and the research design was approved by the Nianin Neurorehabilitation Research Complex (NNRC). As the study is a cross-sectional correlational study, the sample size was determined using G*Power software (version 3.1.9.4) to estimate the sample size of the correlation between the two variables with the type I error of 0.05 and statistical power of 0.80 for the assumed correlation of 0.25, the sample size of 120 people was estimated; however, considering the dropout rate of 5%, the sample size was calculated to be 126. Inclusion criteria include people over 18 years old and living in Iran. Participants filled out the questionnaires with complete satisfaction. Questionnaires that had more than 10 percent of questions without answers were removed from data, 126 questionnaires were completed, and thus, only 104 questionnaires were entered to be analyzed. The present study used online questionnaires to gather information regarding the participants' demographic characteristics, health anxiety, and participation (due to social distancing and adherence to health principles).

Research instruments

A) The Demographic Questionnaire: It created by the researchers of the current study included demographic characteristics such as

age, gender, marital status, and level of education.

B) Health Anxiety Inventory (HAI): This inventory developed by Salkovskis and Warwick, is an 18-item scale. Each item has consisted of four choices, and each choice includes a description of the person's health and illness that the subject should select one of the sentences that best describe them. Each item score ranges from 0-3 (A is "zero" and D is "three"), the highest score is for the highest level of anxiety, and zero indicates the lowest level of anxiety. In addition, the questionnaire includes the main section, the general health section, and the negative consequences section. The test-retest validity of this scale was 0.90, and Cronbach's alpha coefficient for this questionnaire was reported from 0.70 to 0.82. Also, in 2011, the Persian version of HAI was conducted among 375 subjects among teachers from the city of Andimeshk, and the reliability of it was obtained by Cronbach's alpha method (0.87), which indicates the acceptable reliability of the Persian version of the scale (15,16).

C) The Participation Questionnaire: It is a 30-item scale, was developed in 2017 by Farzad et al. and aimed to measure all aspects of participation. During the development of this questionnaire, first, the study of sources was accepted, and 100 items were extracted using its findings. Then, by performing a questionnaire on 404 participants and performing Rasch analysis to find items that did not match well, 70 items were removed. Moreover, the final questionnaire with 30 items was created. It has been used for hand injury patients for the first time, but due to the lack of specificity of the items in this questionnaire for hand injuries and also the use of Rasch analytical method in examining the validity of this questionnaire, it can be used for other groups, as well. The content validity of this questionnaire is 0.97. The structural validity of the scale is confirmed by the Rasch analysis method. The reliability of the items in this questionnaire is 0.91, which indicates the appropriate differentiation of items, and the reliability of the individual is 0.96, which shows the appropriate sensitivity of this test to differentiate individuals. The scoring system of the scale includes four levels from 1-4 (17).

For analyzing the data, first, the mean (M) and standard deviation (SD) were used to describe the data, and then the Kolmogorov Smirnov test was used for assessing normality of data distribution and at that point, the Spearman ranking correlation test was performed. All of the analysis was conducted using IBM SPSS v24 software.

Renault

As Table 1 shows, the descriptive findings indicate that the M and SD of the age of the participants in this study were 30.87 and 0.951, respectively, and the participation of women (77 subjects) was 74%, and the participation of men (27 subjects) in this study was 26%, which shows the higher participation rate for women. The number of single participants was 51 (49%), and 53 married participants were (51%) partook in this study. The number of participants in terms of the level of education was: 11 subjects (10.5%) with a diploma degree and lower, 54 participants (51.9%) with Bachelor's degree, 31 people (29.8%) with Master's degree and eight subjects (7.7%) with Ph.D.

Table 1. Demographic characteristics of the study cohort

Variables		M/Frequency	SD/Percentage
Age		30.87	0.951
Gender			
	Female	77	74
	Male	27	26
Marital Status			
	Single	51	49
	Married	53	51
Level of Education			
	Diploma degree	11	10.5
	Bachelor’s degree	54	51.9
	Master’s degree	31	29.8
	Doctorate degree and higher	8	7.7

To evaluate the effects of gender and marital status as demographic variables on the main variables, the mean values of both samples were tested. The results are shown in Table 2. According to this table, men's participation rate was higher than women's (75.18 to 61.01). There were not any other significant effects regarding other contextual variables.

Table 2. Effects of demographic (contextual) variables on principal variables

Variables	Gender/Marital Status	Mean	Statistic	Degree of freedom	P
Participation	Female	61.01	-2.66	102	0.009
	Male	75.18			
Restrictions	Female	52.32	0.20	102	0.837
	Male	51.74			
Get infected	Female	4.89	079	102	0.429
	Male	4.40			
Disease consequences	Female	3.53	1.30	102	0.196
	Male	2.81			
General health	Female	9.18	0.63	102	0.532
	Male	8.70			
Participation	Married	65.23	0.22	102	0.82
	Single	64.16			
Restrictions	Married	53.45	1.01	102	0.31
	Single	50.94			
Get infected	Married	4.86	0.33	102	0.73
	Single	4.67			
Disease consequences	Married	3.52	0.74	102	0.46
	Single	3.16			
General health	Married	9.24	0.47	102	0.59
	Single	8.88			

As Table 3 (the central indices (mean, standard deviation, minimum and maximum) of the main variables) shows, it can be concluded that the M and SD of participants' participation are 64.69 and 24.49, M and SD of the participants' restrictions were 52.17 and 12.6, respectively, the M and SD of participants' getting affected by the disease were 4.76 and 2.74, the M and SD for the disease consequences were 3.34 and 2.47, respectively, and the M and SD of the general health of participants were 9.06, 3.41, respectively.

Table 3. Central indices of the main variables

Variables	Mean	Standard deviation	Lowest point	Highest point
Participation	64.69	24.49	18	127
Restriction	52.17	12.6	22	83
Get infected	4.76	2.74	0	13
Disease consequences	3.34	2.47	0	11
General health	9.06	3.41	2	16

Based on the Kolmogorov-Smirnov test, the distribution of data was not normal in the sample of this study. Therefore, Spearman's correlation test was used to determine the relationship between health anxiety and participation. The Spearman correlation coefficient was used among the variables, and the results are shown in Table 3. As Table 4 shows, the anxiety regarding getting infected by COVID-19 and the general health concern caused by the COVID-19 epidemic with significant participation had significant and inverse correlations ($r= 0.194$, $P< 0.05$), and the general health concerns caused by COVID-19 epidemics also have a positive and significant correlation with individual life constraints ($r= 0.121$, $P< 0.05$).

Table 4. Solidarity matrix between the main research variables

Spearman correlation test	Participation	Restrictions in participation
Concerns regarding getting infected by COVID-19	*-0.194	0.165
Concerns regarding the consequences of COVID-19	-0.124	0.187
General Concerns regarding COVID-19 outbreak	*-0.121	0.305

*P< 0.05

Discussion

The main findings show that men have higher participation in the COVID-19 epidemic and social distancing. In the case of the main variables, higher fear of getting COVID-19 and the overall health concern caused by the COVID-19 epidemic is correlated with lower participation. The higher the overall health concerns of the COVID-19 epidemic, the greater the constraints on people's lives.

No study was found on the level of participation and the effect of gender on participation at the time of the COVID-19 virus, but a study was conducted by Hong et al., who followed men and women for five years after stroke and rehabilitation. This study was performed on 13 groups of participants from all over the world. The London Disability Scale was used to assess people's perceptions of their participation in living conditions in which women are more involved after a stroke, as well as a study by Stergiou et al. about the return to work environment after brain injury rehabilitation was performed; This study was performed on 12 people, six men, and six women, women had more participation; In this study, extensive and in-depth follow-up by telephone interviews were used to assess post-rehabilitation status. These two studies are different from the present study, and it seems that this difference is due to the specific population of Hong and Stergiou. On the other hand, factors such as the family economy, which is more male based in Iranian society, may affect results. More male participation in Iranian society means that men stay in the work environment more than women in Iranian society, who have less participation in family livelihood. Until now, most men have had less experience spending time at home and know have to stay home because social distance may cause the present results (18,19).

No specific study was found on the fear of getting COVID-19 and the general health concerns caused by the Covid-19 epidemic and its inverse relationship with the participation of individuals, but a cross-sectional study on anxiety caused by the Covid-19 epidemic was conducted by Vahedian and colleagues that reports the emotional and mood characteristics of Iranians; In this study, the mental health status of four groups including patients with COVID-19, medical staff, medical students and ordinary Iranians were assessed using the DASS-21 questionnaire (depression, anxiety, and stress). The mean scores of depression, anxiety, and stress of Medical students and patients with COVID-19 were higher than medical staff and the general population (20), which is not closely related to the present study, another study by Hong et al., which was conducted on 13 groups from around the world, used the London Disability Scale to assess people's perceptions of their participation in living conditions, in which they considered the need for social distance and, consequently, reduction of Individual participation is discussed. Eventually, it cannot be said that all dimensions of participation are related to disability conditions (18). However, a study conducted by Tang et al. included 60 participants with chronic pain; in 3 groups, 20 people with high health anxiety, 20 people with low health anxiety, and 20 people in the control group and without pain. The Health Anxiety Inventory (SHAI), McGill Short Form Chronic Pain Inventory, and the Nosocomial Anxiety and Depression Inventory were used. Results showed that the higher pain is related to higher health anxiety (19) and health anxiety affected participation. Therefore, the results of this study are consistent with the present study.

There are few studies on the overall health concerns of COVID-19 epidemics and the direct relationship between restrictions on people's lives and COVID-19. As discussed earlier, previous studies showed the importance

and necessity of social distancing. However, social distancing creates limitations in people's lives. Although, these limitations, which were reported in the present study, are considered positive in the short term and are a sign of observance of hygienic requirements for COVID-19. Nonetheless, in the long run, not only can it cause problems for individuals, but also it may disrupt the functioning of societies. Therefore, if the current situation continues, more research on the limitations of people's participation is needed to identify its various aspects correctly. Following this, the rehabilitation sector must adopt an appropriate program regarding these restrictions to maximize individuals' participation and adapt the individual to the new conditions. Regarding these limitations and their correlation with anxiety, although it seems a natural relationship, it should not be overlooked that based on the findings in the field of neuroscience, anxiety and fear are reduced following a process called habituation. If the health instructions are followed due to anxiety, it cannot be expected that it would last long, so it is recommended that in future studies, the relationship between anxiety and adherence to health regulations be examined as longitudinal studies.

In the present study, along with valuable findings, some limitations and shortcomings should be mentioned for future studies to surpass them. These shortcomings include restrictions regarding gathering the sample, which resulted in having a sample including most people who reside in Tehran, Mashhad, and Qazvin, and the study design, which was a cross-sectional study. Future studies in this field would address the current constraints.

Conclusion

The present findings showed the role of gender in people's participation during social distancing and the role of health anxiety regarding the COVID-19 outbreak on participation and limitation of people's participation. Therefore, the relationship between participation and health anxiety and constraints can be used as an outline to guide and design smart distancing policies.

Acknowledgment

We want to express our sincere gratitude to all those who visited the website of this public interest research group (www.nianin.ir) which was based on ethical principles (and included an informed consent section), and filled out the relevant questionnaires.

We sincerely thank Ms. Azin Farzin, postgraduate, Malaysian Research Institute on Ageing, for her guidance in this project. Thanks to the students and the general public who helped us with the sample collection. Also, this research was conducted without financial support. The authors declare any conflict of interests.

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