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Psychological and social consequences of the COVID-19 pandemic on Iranian rehabilitation specialists

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Abstract

Introduction: The spread of various pandemics and other outbreaks is inevitable, and rehabilitation specialists are the most exposed groups due to working with disabled patients. This study evaluates the correlation between COVID-19 anxiety, Obsessive-Compulsive Disorder (OCD), social participation, and coping styles during the pandemic with demographic information of Iranian rehabilitation specialists.

Materials and Methods: In this cross-sectional study in 2022, 300 Iranian rehabilitation specialists were selected randomly. They responded to the COVID-19 Anxiety Scale (CAS), OCD Assessment Tool, Social Participation Questionnaire (SPQ), Coping Styles Questionnaire (CSQ), and the demographic checklist. The data were analyzed using the descriptive statistics, ANOVA test, and SPSS 22.

Results: The mean scores for anxiety (18.70) and OCD (86.47) were in the moderate range, and that of social participation (34.12) was in the severe range. For coping styles, the greatest (15.1) and least (12.15) mean scores were found for problem-solving and confrontative coping styles. There were significant correlations when comparing the main variables with the demographic variables.

Conclusion: Rehabilitation specialists experienced substantial anxiety and OCD during the COVID-19 pandemic. Likewise, their social participation, which needs to be at a top level, was severely restricted. In addition, some significant relationships in demographic variables imply that some people are more susceptible in society. This finding is of paramount importance in adopting strategies to deal with crises.

Keywords: Anxiety, COVID-19, Obsessive-compulsive disorder, Social participation

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Introduction

The COVID-19 pandemic and subsequent lockdown measures have unprecedentedly impacted global public health (1). The World Health Organization has declared the pandemic a significant threat to physical and mental well-being. Families have been significantly impacted by the pandemic and lockdown, disrupting their daily routines and lifestyles (2). The outbreak of infectious diseases, such as COVID-19, can lead to mental distress and illness symptoms (3). While most studies focus on anxiety in affected patients, it is essential to recognize that healthy individuals are also impacted by disease-related anxiety during outbreaks (4). It should be noted that the containment measures applied to slow the progression of the epidemic can increase the risk of developing Obsessive-Compulsive Disorder (OCD) (5). Factors contributing to COVID-19 anxiety include fear of infection and death, disrupted daily activities, misinformation, social restrictions, and financial stress. These conditions can result in various symptoms and severe clinical disorders. Additionally, the pandemic has been associated with increased insomnia (6), loneliness, reduced social support, and heightened clinical stress and anxiety (7,8); some individuals may even experience signs of Post-Traumatic Stress Disorder (PTSD) (9).

In weak and sensitive groups such as the elderly, it has been found that loneliness and social isolation are indirectly related to obsession with Corona through reassurance behavior and viral anxiety (10). When individuals face stressful factors, they naturally adopt coping styles to mitigate the impact (11). Coping styles refer to specific behavioral and psychological reactions tailored to overcome, endure, downsize, or minimize stressful events (12). The research underscores that coping styles significantly influence the overall quality of life (13,14). Psychological interventions were found to affect the psychological distress experienced by COVID-19 patients by targeting social support and promoting adaptive coping strategies (6). Furthermore, the COVID-19 pandemic poses a formidable challenge to occupational health, particularly for healthcare personnel who tirelessly combat the disease (12). These frontline workers experience high work pressures and are at substantial risk of infection, resulting in a significant psychological burden. Rehabilitation specialists who serve individuals with physical and mental disabilities are also vulnerable. Therefore, their overall health, especially mental well-being, warrants close attention compared to other professionals (15,16). Improper rehabilitation services can disrupt service delivery to disabled individuals, emphasizing the need to prevent stress-related psychological and behavioral effects (17). Furthermore, the global spread of highly mutated COVID-19 variants and ongoing struggles with the pandemic necessitate research on its psychological and social consequences. This study investigates COVID-19 psychological effects such as specific anxiety, OCD, altered social participation of rehabilitation specialists (e.g., audiometry, physiotherapy, occupational therapy, speech-language pathology, orthopedic technician, and rehabilitation management), as well as their relationship with demographic characteristics (i.e., age, gender, marital status, work experience, education, and field of work). Additionally, this study evaluates the most popular coping styles adopted by rehabilitation specialists in facing this pandemic. The contribution of this study is that contrary to most of the studies that have utilized general questionnaires to assess anxiety or coping styles for general outbreaks, it deals specifically with coping styles adopted against the COVID-19 pandemic. The results of this study are expected to assist us in planning tailored measures for downsizing psychological damage when facing natural and unnatural crises in the future.

Materials and Methods

This descriptive-analytical cross-sectional study focused on randomly selected Iranian rehabilitation specialists. The target population is enrolled between August and early October 2022.Based on the findings of previous studies (18), the sample size was determined to be 235 cases using med-calc statistical software, with 95% power and 5% error. In this plan, because the structural equation model should be used and these models are sensitive to missing data, 25% was added to the above sample size to prevent the structural equation model from not fitting properly. As a result, the minimum sample size was 295 people. The samples were collected between August and early October 1401, and the number of samples after passing the research entry and exit criteria was equal to 300 people. Inclusion criteria included having a degree in one of the fields of rehabilitation, having a history of employment in clinics or medical centers since 2018, aged between 23 and 70

years, and lack of experience of a recent stressful event. Exclusion criteria included lack of consent to participate in the research, and occurrence of a stressful event during participation in research.

Research instruments

A) COVID-19 Anxiety Scale (CAS): This scale has been developed and validated to assess the anxiety caused by the COVID-19 pandemic in Iran. The final version of the CAS contains 18 items and measures psychological and physical components. The reliability of the entire CAS questionnaire was evaluated using Cronbach's alpha, which was found to be 0.91. The validity of the CAS was correlated with the GHQ-28 questionnaire to assess its validity. The results showed that the CAS total score, as well as its anxiety, physical symptoms, social functioning impairment, and depression components, were significantly correlated ($P< 0.01$) with the corresponding GHQ-28 scores, with correlation coefficients of 0.483, 0.507, 0.418, 0.333, and 0.269, respectively (19).

B) Obsessive-Compulsive Disorder (OCD) Assessment Tool: This tool is a 39-item instrument that evaluates and measures the severity of OCD from various dimensions. These dimensions include contamination obsessions, washing compulsions, checking compulsions, ordering compulsions, obsessive thoughts about harm to self or others, obsessive thoughts about violence, obsessional impulses to harm self or others, and obsessive impulses to steal. The reliability of this tool was assessed using Cronbach's alpha, which was found to be 0.92, indicating a high level of internal consistency (20). This instrument is a reliable tool to measure obsessive-compulsive symptoms in Iranian populations (21).

C) Social Participation Questionnaire (SPQ): Since no SPQ was available in Iran, we applied the SPQ that had been previously standardized for multiple sclerosis patients. At first, the content validity of the SPQ was determined using the content validity ratio index (CVR= 0.9107) and content validity index (CVI= 0.9821) of the final translated version. Then, the relationship between the score of each item and the total score of the SPQ was evaluated. Ultimately, the internal reliability of the whole questionnaire was calculated using Cronbach's alpha to be 0.861 (22).

D) Coping Style Questionnaire (CSQ): Dortaj et al. (2020) developed the CSQ for facing the COVID-19 pandemic. It contains eight dimensions (confrontative coping, avoidance, self-control, seeking social support, responsibility, escape and avoidance, problem-solving, and positive reappraisal) and 24 items. The reliability of this questionnaire was calculated using Cronbach's alpha, which was 0.75 (23).

The relationships between the variables were assessed by analysis of variance (ANOVA) and independent-t and Kruskal-Wallis tests in SPSS 22 software.

Results

Table 1 presents the frequency distribution of the demographic variables of rehabilitation specialists.

Table 1. Frequency distribution of demographic variables

Variable		Number	Percent	The cumulative percentage
Field of study	Audiology	100	33.3	33.3
	Physiotherapy	51	17.0	50.3
	Occupational therapy	48	16.0	66.3
	Speech-language pathology	61	20.3	86.7
	Orthopedic technician	19	6.3	93.0
	Rehabilitation management	21	7.0	100.0
Degree of education	Bachelor's degree	197	65.7	65.7
	Master's degree	85	28.3	94.0
	Doctorate	18	6.0	100.0
Gender	Female	226	75.3	75.3
	Male	74	24.7	100.0
Age (Year)	20-30	118	39.3	39.3
	31-40	115	38.3	77.7
	41-50	50	16.7	94.3
	51-60	15	5.0	99.3
	61-70	2	0.7	100.0
Marital status	Single	114	38.0	38.0
	Married	186	62.0	100.0
Work experience (Year)	1-10	173	57.7	57.7
	11-20	88	29.3	87.0
	21-30	35	11.7	98.7
	> 30	4	1.3	100.0
Total		300	100.0	

Most participants were between the ages of 20 and 40 (about 77.7%), about 72% were married, more than 75% were women, and more than 57% had work experience of less than ten years. Regarding educational level, most of the participants had a bachelor's degree (65%) (Table 1). Table 2 presents the descriptive indices for variables COVID-19 anxiety and social participation.

Table 2. Descriptive indices for variables COVID-19 anxiety and social participation

Variable	Mean	SD	Median	Min	Max
Psychiatric symptoms	14.34	6.20	14	0	27
Physical symptoms	4.35	5.16	2	0	24
Total anxiety	18.70	10.35	17	1	51
Total score of social participation	34.12	15.59	30	3	70

Based on Table 2, the COVID-19 pandemic has caused significant anxiety among rehabilitation specialists, with a mean score of 18.70. Psychological symptoms, with a mean score of 14.34, indicate medium level of anxiety, while physical symptoms score 4.35, indicating a severe level.

The mean score for social participation was 34.12, indicating a severe restriction on rehabilitation specialists due to the COVID-19 lockdown. Table 3 provides the values of descriptive indices for various components of coping styles.

As shown, the highest mean value (15.01) and the lowest mean value (12.15) are observed for "problem-solving" and "confrontative coping," respectively. Table 4 shows the descriptive indices for OCD components of practical obsessions. The highest mean value (19.79) belongs to "contamination obsessions," and the lowest (2.34) belongs to "obsessional impulses to steal". The total OCD mean score is 86.47, indicating moderate intensity among participants. This value is crucial for rehabilitation specialists who work with disabled people.

Table 3. Descriptive indices for components of coping styles

Coping style	Mean	SD	Median	Min	Max
Confrontative coping	12.15	3.25	13	3	18
Avoidance	12.43	3.53	13	3	18
Self-control	12.64	3.16	13	3	18
Seeking social support	14.01	2.76	14	5	18
Responsibility	12.77	2.16	13	7	18
Escape and avoidance	13.28	3.27	14	3	18
Problem-solving	15.01	2.88	15	3	18
Positive reappraisal	13.71	3.23	14	3	18
Total coping styles score	106.01	14.12	107	54	144

Table 4. Descriptive indices for OCD components

Variable	Mean	SD	Median	Min	Max
Contamination obsessions	19.79	6.21	20	6	30
Washing compulsions	14.58	4.40	15	4	20
Ordering compulsions	7.50	3.25	7	3	15
Checking compulsions	20.73	8.86	19	10	50
Obsessional thoughts about harm to self/others	9.11	4.12	8	5	25
Obsessional thoughts about violence	3.33	1.63	3	2	10
Obsessional impulses to harm self/others	9.08	3.97	7	7	35
Obsessional impulses to steal	2.34	1.09	2	2	10
Total score for OCD	86.47	23.96	83	39	194

Comparing COVID-19 anxiety variables with demographic characteristics, ANOVA results indicate that the mean value of "psychological symptoms" is significantly lower for speech therapy and rehabilitation management compared to other fields. Conversely, the mean value of "psychological symptoms" for audiology and physiotherapy is higher than that for different fields (*P*= 0.028) (Table 5). Independent t-test results reveal that "psychological symptoms" (*P*= 0.008) and "total anxiety" (*P*= 0.014) are higher among married participants. No significant relationship was observed with other demographic characteristics. The study found that orthopedic technicians have higher values of "confrontative coping" (*P*= 0.002) and "self-control" (*P*= 0.021) compared to other fields. Additionally, specialists with different educational backgrounds showed variations in their coping style values. Female specialists scored higher in most components (*P*< 0.05) except for "confrontative coping," "avoidance," and "self-control." The age group of 41 to 50 years showed higher values in "confrontational coping," "avoidance," "self-control," and "positive reappraisal" (*P*< 0.05). Married specialists scored higher in "escape and avoidance" (*P*= 0.045) and "positive reappraisal" values (*P*= 0.002). Finally, specialists with 20 to 30 years of work experience had higher scores in "confrontative coping," "avoidance," and "self-control" (*P*< 0.05). When examining the relationship between OCD and demographics, it was found that specific obsessions and compulsions were more prevalent in certain groups. For example, specialists in rehabilitation management had higher mean values for thoughts about harm to self/others (*P*= 0.019) and impulses to steal (*P*= 0.006). Checking compulsions were more common among specialists with a bachelor degree (*P*= 0.025), while contamination obsessions (*P*= 0.044) and washing compulsions (*P*= 0.002) were more prevalent among female specialists. Additionally, specialists aged 60 to 70 had higher mean values for thoughts about harm to self/others (*P*= 0.001) and impulses to steal (*P*= 0.016) compared to other age groups. Married specialists had higher values for contamination obsessions and ordering compulsions (*P*< 0.05). Finally, higher work experience levels were associated with higher mean values for specific obsessions and compulsions (*P*< 0.05).

The relationships between social participation and demographic variables were measured using independent t-tests, ANOVA, and the Kruskal-Wallis test. It was found that the extent of social participation had a significant relationship only with the field of study, with the least and greatest social participation found in "occupational therapy" and "rehabilitation management," respectively (*P*= 0.014) (Table 6).

Table 5. The extent of anxiety and its dimensions for various fields

	Field of study	Participants	Mean	SD	Min	Max	Test statistics	P
Psychological symptoms	Audiology	100	15.05	6.94	1	27	2.558	0.028
	Physiotherapy	51	15.71	6.11	3	27		
	Occupational therapy	48	14.88	5.25	4	25		
	Speech-language pathology	61	12.95	5.77	3	27		
	Orthopedic technician	19	13.37	4.90	0	21		
	Rehabilitation management	21	11.38	5.68	4	25		

Table 6. The nexus between the extent of social participation and the field of study

Field of study		Participants	Mean	SD	Min	Max	Test statistics	P
Social participation	Audiology	100	37.66	16.12	5	70	2.919	0.014
	Physiotherapy	51	32.61	14.40	3	66		
	Occupational therapy	48	28.62	12.91	7	56		
	Speech-language pathology	61	32.03	16.78	3	66		
	Orthopedic technician	19	36.21	11.28	22	54		
	Rehabilitation management	21	37.71	17.57	12	66		

Discussion

No research has investigated COVID-19 anxiety among rehabilitation specialists; however, in some studies, the level of anxiety in society and its impact on the performance of other groups of people have been investigated, such as the qualitative findings of the study by Zhao et al. They showed that the anxiety of Corona harmed students' GPA, research projects, classroom participation and graduation (24). Anteneh et al. assessed high school students. They found that the level of depression, anxiety, and stress among them was 43.49% (25), which these findings is consistent with the results of the present study. Heydari-Farsani found no significant relationship between job stress and gender or education level among nurses (26). These results are consistent with the results of the present study. Also Salehiniya et al. evaluated COVID-19 anxiety and mental health disorders among dentists. Their findings showed significant differences in stress levels between single and married dentists. However, unlike our study, they found a significant difference in anxiety between male and female dentists. This discrepancy may be explained by differences in the study population (27).

In reviewing similar coping style texts, most studies used the coping style questionnaire, which was standardized in general and in normal conditions. However, in the present study, the essay-style questionnaire used was specially designed and standardized to deal with the Corona epidemic, making the present study distinct. He et al. found that coping styles against COVID-19 differ between genders. They also observed that objective social support scores and positive coping style scores were significantly associated with lower levels of anxiety, depression, and insomnia, respectively. On the other hand, high negative coping style scores, higher education level, and self-perceived illness severity were significantly related to higher levels of anxiety, depression, or insomnia symptoms (6). However, the dimensions used in the studies above differ from those in this study, making it difficult to compare.

In the literature review for OCD components, Jalalifar et al. and Rashedi et al. revealed a significant difference in the score of COVID-19 OCD between males and females, with the OCD scores that were higher in females than in males (5,28). The present study observed a significant correlation between male and female specialists, especially for the "contamination obsession" and "washing obsessions" components. These results are in line with the findings reported by Mani et al. (29) and Mohammadi et al. (30). The onset of OCD in the ages over 40 years is higher in females than in males, which may be due to hormonal differences (31). In addition, female specialists are more likely to express their thoughts and manifest OCD actions compared to male specialists (32). These can clarify the relationship between gender and OCD caused by the Covid-19 pandemic in the present study.

Furthermore, in line with our results (in terms of "obsessional impulses to harm self/others" and "obsessional impulses to steal"), Rashedi et al. reported that the highest mean value of OCD is observed in the age group of 60 to 70 years (28). However, contrary to our results, Choi et al. reported that "age" is a negative predictor for OCD caused by the COVID-19 pandemic, such that a rise in age is associated with higher OCD scores (33). The discrepancy between our study and the study by Choi et al. can be related to a different research community and tools. Furthermore, in the present study, the number of specialists aged 60 to 70 was deficient, implying that more samples are required to investigate OCD in this age group.

The SPQ tool was standardized for the first time during the COVID-19 pandemic, so this study has yet to use it for assessments. However, some similar studies have looked into social participation during the pandemic. A recent study by Deng et al. revealed that perceived stress had a detrimental impact on nurses' work engagement and their perceived professional benefits during the routine management of the COVID-19 pandemic (16). Shamabadi et al. found that males had higher social participation than females during the pandemic (34). The present study found that male specialists' social participation was slightly higher than female specialists, but the difference was non-significant. This could be due to the use of different questionnaires and statistical populations. Also, Heesen et al. found no significant difference in social participation among people with immunodeficiency before and after the COVID-19 pandemic across different age groups and education levels (35).

One limitation of this research was the large number of questions in its questionnaires, which was solved largely by providing a desired time interval for the participants to answer. On the other hand, the lack of previous research related to the subject under study was another limitation

of this research. Also, due to the prevailing conditions in society, the data were collected online and virtually, which will be more likely to make errors than direct and face-to-face data. We recommend that a qualitative study be conducted about the factors affecting people's participation during the outbreak of a disease pandemic and further studies will investigate the relationship between personality types and social participation among rehabilitation specialists and investigating social participation, anxiety, and practical obsession among the physically disabled. Also, we suggest designing, adjusting, and standardizing a specific obsession questionnaire tool in the field of fear of contracting diseases.

Conclusion

This study explores the impact of the COVID-19 pandemic on rehabilitation specialists. It found that these experts have experienced significant OCD and reduced social participation due to the pandemic psychological and social consequences. Moreover, most of these specialists were found to adopt the coping style of "problem-solving" to deal with this problem. The psychological and social consequences of pandemic were associated with the participants' demographic characteristics, implying the potential susceptibility of these groups compared to others.

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Conflicts of Interests

The authors declare no conflict of interest.

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Ethical Considerations

This study was approved by the Research Ethics Committee of Ahvaz Jundishapur University of Medical Sciences (AJUMS). Similar to other studies, and to comply with the ethical standards of the research, sufficient information about the purpose and procedures for implementing this study and the use of research findings were provided to the participants. All participants completed and signed the informed consent before starting the study.

Code of Ethics

IR.AJUMS.REC.1401.147

Authors' Contributions

M.M. conceived and designed the evaluation and drafted the manuscript. M.M and M.D participated in designing the study. M.M collected data, performed the statistical analysis, and revised the manuscript. M.M and S.GH re-analyzed statistical data. All authors revised and approved the final manuscript.

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