JCHR

Journal of Community Health Research 2023; 12(2): 172-179.

Evaluation of COVID-19-Related Anxiety and Mental Health Status during the Pandemic among Students of Mashhad University of Medical Sciences, 2022

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ARTICLE INFO

Original Article

Received: 22 Jun 2023
Accepted: 10 Sep 2023

OPEN ACCESS

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ABSTRACT

Background: COVID-19 has not only damaged the individual's physical health, but also the community's mental health. The current study is conducted to investigate the effects of COVID-19 on mental health and anxiety level of the university students.

Methods: In the current cross-sectional study, 216 students from Mashhad University of Medical Sciences were collected using simple random sampling during COVID-19 pandemic in 2022. To determine anxiety symptoms relevant to COVID-19, Corona Disease Anxiety Scale (CDAS) was used, and to assess the status of mental health, General Health Questionnaire (GHQ-12) was used. Data were analyzed through SPSS software. Descriptive analysis statistics was performed using frequency percentages, and mean and standard deviation indexes. Furthermore, multiple linear regressions were calculated with psychological and physical symptoms of CDAS and mental health scores. The significance level of all statistical tests was 0.05.

Results: 84.3% (182 participants) of the participants had medium and high levels of psychological symptoms of Corona disease anxiety, and regarding physical symptoms, approximately more than half of the participants (55.6%, 120 participants) experienced medium and high levels of anxiety. Both the psychological and physical symptoms of the disease anxiety were associated significantly with mental health (ß standard = 0.14, p value = 0.004), and psychological symptom variable was the stronger predictor (ß standard = 0.53, p value = 0.0001).

Conclusion: The wide spread of anxiety during COVID-19 lockdown is a warning to health educators and policy makers that significant time, attempt, and funding of the services for mental health should be spent to control anxiety.

Keywords: Anxiety, Mental Health, COVID-19

How to cite this paper:

Mohammadnabizadeh S, Najafpoor AA. Evaluation of COVID-19-Related Anxiety and Mental Health Status during the Pandemic among Students of Mashhad University of Medical Sciences, 2022. J Community Health Research 2023; 12(2): 172-179.

[DOI: 10.18502/jchr.v12i21.13923]

Introduction

Based on the report of World Health Organization, the prevalence of Coronavirus disease 2019 (COVID-19) was recognized as a public health concern on 30 January, 2020 (1). To prevent the prevalence of COVID-19, different public lockdowns have been enforced by governments. These constraints have had different economic and social outcomes, such as increase of loneliness, substance abuse, income decrease, widespread loss of jobs, being forced to work at home, and global economic decline (2, 3).

COVID-19 has damaged the community's both physical and mental health. (4). Consequences of the disease, such as incensement, increase of mortality rate, spread of incorrect rumors and news, long-term lockdowns, reduction of economic activities, people's communication and business, social distancing, school and university closures, all can significantly affect the individuals' mental health (5, 6).

Anxiety refers to a situation in which the individuals are worried and disturbed more than normal in case of a bad occurrence in future; COVID-19 anxiety refers to the anxiety created by contracting the disease, and is mainly because of its unclear nature (7). Based on the conducted studies, anxiety can disrupt the function of cytokines and hormones, and subsequently, by decreasing the protective cells of the immune system, it weakens the body's immune system (8). Investigations assessed that through the first public lockdown, between 19.60% to 67.51% of the people had anxiety (9). Moreover, several studies determined the relation between mental health and anxiety during the COVID-19 pandemic (10, 11).

One of the main groups harmed during the pandemic was students (12). Followed the closure of the universities, COVID-19 caused different behavioral disorders among students such as anxiety, post-traumatic stress disorder, panic disorder, depression, self-blame, and violence, demonstrating the effect of this epidemic on the mental health of this segment of society (13, 14). 92% of students around the world have been influenced by the negative social, educational, and psychological outcomes of COVID-19 (15). Based on the study done on more than 7000 students in China during the COVID-19 outbreak, approximately 24.9% of them experienced anxiety, 9% of whom were students with severe symptoms and the rest, had moderate anxiety (16). The most significant causes of increasing anxiety among students are the effect of the COVID-19 on their future job and education, and the reduction of social relationships. Furthermore, the reason of anxiety for some students may be due to the problem of providing university tuition because of the loss of job and unemployment during COVID-19 lockdown (17).

However, there has been remarkable attention to identify individuals with the disease, but identifying the needs of people's mental health care have been neglected, relatively (18). It is predicted that the COVID-19 disease will continue among the world's population for years and greater preparedness is needed for the continuous mental health outcomes of this pandemic and possible future lockdown (19). Therefore, it is more necessary for health systems to maintain the individual's mental health in society. The current investigation is conducted to study the effects COVID-19 on the mental health and anxiety level of the students from Faculty of Health, University of Medical Sciences in Mashhad University.

Methods

216 students from the faculty of health in Mashhad University of Medical Sciences were chosen via simple random sampling using the list of students and based on Miri et al.'s study (20), on July 2022.

$n = z^2\ p\ (1\text{-}p) / d^2$

$1.96^2\ 17.1(1\text{-}17.1) / 0.05^2 = 216$

At the beginning of the research, informed consent was taken from all the students. In

[DOI: 10.18502/jchr.v12i21.13923]

addition, the research protocol was approved by Mashhad University of Medical Sciences.

Measures

Sociodemographic data

Participants' age, sex, marital status, and education was assessed in the first section of the questionnaire.

Corona disease anxiety scale (CDAS)

To determine the anxiety symptoms relevant to COVID-19, the authors used CDAS developed by Alipour et al. (21). This scale has been developed and validated to assess the anxiety over the prevalence of COVID-19 in Iran. Moreover, Cronbach's alpha test method was used to measure the reliability regarding 30 students obtained as 0.85. The final version of CDAS has 2 components and 18 items. Questions 1 to 9 assess psychological symptoms, and questions 10 to 18, assess physical symptoms. A 4-point Likert scale was used to score the items (0=never, 3=always). The total score of this variable was from 0 to 54 (0-16: zero to low anxiety, 17-29: medium anxiety, 29-54: high anxiety). High scores demonstrate the higher anxiety levels of individuals.

General health questionnaire (GHQ)

GHQ-12 was used to determine mental health status. Due to brevity, this scale is one of the most suitable tools to investigate psychological disorder (22). The GHQ-12 includes 12 items to which participants agree on a 4-degree scale (0=no anxiety, 3=more than usual). Scores are between 0 and 36, which higher scores show higher mental disorder (23). The validity of this scale in Iran has been confirmed by Yaqoubi et al. (24). Moreover, Cronbach's alpha test was used to measure the reliability for 30 students which were 0.87.

Data analysis

Data were analyzed through SPSS 21. Descriptive statistics was performed using frequency, mean, percentages, and standard deviation indexes. Furthermore, multiple linear regression was calculated with psychological and physical symptoms of CDAS and mental health scores. The significance level of all statistical tests was 0.05.

Results

The mean and standard deviation of CDAS and its subscales including mental symptoms and physical symptoms, and also mean and standard deviation of mental health are described in Table 2.

Table 1. Demographic characteristics of the participants

Variable	Mean ± Standard Deviation/ Number (%)
Age (year)	22.56 ± 4.28
Sex	
Male	52 (24.1)
Female	164 (75.9)
Education	
Bachelor of science	170 (78.7)
Master of science	36 (16.7)
PhD degree	10 (4.6)
Marital status	
Married	59 (27.3)
Single	157 (72.7)

[DOI: 10.18502/jchr.v12i21.13923]

Table 2. Mean and standard deviation of anxiety and mental health

Variable	Total anxiety (Mean ± Standard Deviation)	Psychological symptoms (Mean ± Standard Deviation)	Physical symptoms (Mean ± Standard Deviation)	Mental health (Mean ± Standard Deviation)
Sex				
Male	16.64 ± 11.10	12.02 ± 6.04	5.10 ± 5.53	16.83 ± 15.11
Female	17.31 ± 10.99	11.40 ± 5.47	5.71 ± 5.99	18.53 ± 6.78
P-value	0.63	0.49	0.51	0.10
Education				
Bachelor of science	16.08 ± 10.94	11.58 ± 5.81	5.41 ± 6.08	17.99 ± 6.72
Master of science	21.72 ± 10.73	11.47 ± 5.11	6.28 ± 5.25	18.86 ± 5.59
PhD degree	17.90 ± 9.36	11.20 ± 3.91	5.50 ± 4.53	17.70 ± 4.50
P-value	0.02	0.97	0.73	0.75
Marital status				
Married	16.34 ± 13.21	11.41 ± 6.99	6.23 ± 6.01	19.13 ± 9.05
Single	17.39 ± 10.7	11.60 ± 5.01	5.31 ± 5.39	17.74 ± 5.13
P-value	0.53	0.82	0.30	0.16
Total	17.11 ± 10.99	11.55 ± 5.60	5.56±5.88	18.12 ± 6.45

Frequency and percentage of CDAS and its subscales are displayed in Table 3. Most of the participants had a medium level of psychological symptoms of CDAS (75.5%). Regarding physical symptoms, 44.4% of the subjects experienced no or low level of anxiety, and 33.8% had a medium level of anxiety.

Both psychological and physical symptoms of CDAS were associated significantly with mental health, and psychological symptom was the stronger predictor (table 4).

Table 3. Frequency and percentage of Coronaviruses anxiety and its subscales

Variable	No anxiety and low Frequency (Percentage)	Medium anxiety Frequency (Percentage)	High anxiety Frequency (Percentage)
Total anxiety	108 (50.0)	72 (33.3)	36 (16.7)
Psychological symptoms	34 (15.7)	163 (75.5)	19 (8.8)
Physical symptoms	96 (44.4)	73 (33.8)	47 (21.8)

Table 4. Multiple linear regression analyses for mental health

Independent variables	ß unstandardized	ß standard	*P*	R^2	Dependent variable
Total anxiety	0.08	0.14	0.004		
Psychological symptoms	0.61	0.53	0.0001	0.67	Mental health
Physical symptoms	0.37	0.34	0.0001		

Discussion

According to the findings of this study, most of the participants experienced a medium level of psychological symptoms of CDAS (75.5%). With regard to physical symptoms, 44.4% of the participants experienced zero or low level of anxiety, and 33.8% had a medium level of anxiety. Furthermore, both psychological and physical symptoms of CDAS were significantly associated mental health, with psychological symptom being the stronger predictor.

The outbreak of COVID-19 is considered a specific stressor for individual's psychological, physiological, and behavioral responses (1). Anxiety is a person's subjective self-regulation in response to the disease with a psychological effect on the well-being and health of the population (17). Young individuals were among the affected population, who have faced major disruptions to their living and education and may suffer from

[DOI: 10.18502/jchr.v12i21.13923]

long-term economic effects of COVID-19. UNESCO has confirmed that the pandemic has caused the greatest disruption in education around the world, and has evaluated that 1·6 billion students in over 190 countries in 2020 partially or completely stopped going to school (25). Accordingly, university students were susceptible to mental symptoms as well. At the beginning of COVID-19 outbreak in Iran, as in other countries, the universities' closure was one of the main measures in order to prevent the spread of infection.

In this research, 84.3% of the participants suffered from medium and high levels of psychological symptoms of CDAS, and more than half of the participants (55.6%) had medium and high levels of anxiety. Current restrictions across countries, including the actions done in Iran, exposed individuals to more stressful situations in an uncertain period. Although public restrictions for preventing the spread of COVID-19 have approximately enhanced general knowledge regarding the severity of this disease and its perceived threat, studies have also revealed psychological disorders of lockdown such as insomnia, irritability, anxiety, depression, fear, and other psychological symptoms (26). In Irji Rad's study, anxiety accounted for more than 60% of the infected population (27). In a study in China regarding the psychological effects of COVID-19, the level of anxiety was estimated at 36.4% with different severities, and 28.8% had moderate to severe anxiety (28). In a research on medical students, 24.9% of them experienced anxiety during the pandemic, 0.9% of whom had severe anxiety and 21.3% had moderate anxiety (17). Several studies suggested that the anxiety related to COVID-19, had economic, academic, and lifestyle impacts, lifestyle, which were positively associated with the level of anxiety among university students (29). Moreover, the prevalence of anxiety disorders was higher in younger age groups than older ones (28). Therefore, the students needed help, attention, and support of their families, colleges, and community.

Results of regression analysis showed that both psychological and physical symptoms of CDAS were associated significantly with mental health. This finding was in line with the study by Alizadeh Fard and Saffarinia (24). Eyni et al's research on students' predictors of mental health during the pandemic suggested that Coronavirus anxiety was significantly correlated with mental health (12). In critical situations, individual and social structures as well as lifestyle are disturbed. Disruption of individual structures reduces the individual's control on his/her life, followed by a feeling of insecurity. In addition, factors such as worrying about getting sick, fear of death, economic problems, and job loss are also influential (24). Unpleasant thoughts such as feeling alone, stigmatization, denial, despair, and in more severe cases, suicidal thoughts may cause the individuals to leave home and ignore restrictions (30). Finally, lockdown cause people to lose the psychological support of their family, friends, and classmates which in turn increases tension and psychological damage (31). Overall, it is obvious that anxiety can have the adverse effects on individuals' mental health in the society. Health strategies and programs should improve mental health and take into account the determinants of mental disorders exacerbated by the pandemic to treat the affected people. Moreover, physical activity and friends and family's support via video chats, phone calls, texts, e-mail, or other messenger applications are well identified as factors which considerably reduce anxiety symptoms (32). Helpful information should be shared with family members and friends. Motivational talks and messages from individuals who have experienced COVID-19 disease and recovered or aided someone to get recovered must be highlighted (33, 34). Furthermore, exposure to social media, which can spread incorrect news and cause more anxiety, must be restricted to just trustworthy information (33).

There were some limitations regarding this study. This research relied on self-report HBM questionnaire, which introduces the probability of biased results like recall bias. This was a cross-

[DOI: 10.18502/jchr.v12i21.13923]

sectional study, and long-term follow-up can present different findings. Future studies must also consider confounding and mediating variables which may intensify anxiety symptoms and enhance the internal validity of the study.

Conclusion

Regarding COVID-19's negative impact on physical and mental health of the public, 84.3% of the participants suffered from medium and high levels of psychological symptoms of CDAS, and more than half of the participants suffered from medium and high levels of physical symptoms. Both psychological and physical symptoms were significantly associated with mental health. Health educators and policy makers need to devote significant time, and fund mental health services to help those suffering from anxiety. Future investigations must assess longitudinally anxiety changes in the next lockdown.

Acknowledgements

The authors appreciate the financial support of Social Determinants of Health Research Center. They would also like to thank Mashhad University of Medical Sciences and Research Chancellor the University for their help. The research was approved with the ethical code Number: IR.MUMS.FHMPM.REC.1401.060.

Conflict of interest

The authors declared no conflict of interest.

Authors' contributions

S. M, participated in the writing and designing of the study, performed the statistical analysis and drafted the manuscript; A. A. N, helped to edit and draft the manuscript.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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[DOI: 10.18502/jchr.v12i21.13923]

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