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Original Article

The prevalence of Corona anxiety and its related demographic factors in Mashhad city

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Abstract

The prevalence of Corona disease (COVID-19) is on the rise around the world, and the unknown nature of this disease exacerbates people's anxiety about it. The purpose of this study was to determine the prevalence of corona anxiety and its related demographic factors in the general population of Mashhad city in the spring of 2020. The method of this research is descriptive and of survey type. The population of this study included all citizens of Mashhad in the spring of 2020. 517 people were selected for the study through convenience sampling via social networks. The participants answered the online questionnaires of demographic characteristics and Corona disease anxiety scale (CDAS). The data was analyzed using descriptive and inferential statistical tests such as frequency, frequency percentage, Chi-square and Kruskal-Wallis based on cut-off point of CDAS by SPSS software, Ver. 25. The results showed that the prevalence of corona anxiety among the citizens of Mashhad is 28.82%. Corona anxiety rate in men and women was 31.17% and 24.87%, respectively. Women significantly had more corona anxiety than men ($p = 0.001$). The prevalence of corona anxiety was not significantly related to marital status ($p = 0.13$). Corona anxiety was more common in people with high school diploma or lower education ($p = 0.001$) and there was no significant difference among different ages in terms of corona anxiety prevalence ($p = 0.25$). The results of the present study show that about one third of the citizens of Mashhad have corona anxiety and this rate is higher in women and people with lower education. The results of this study indicate the need for effective strategies to deal with the increasing prevalence of corona anxiety and its consequences

Keywords

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Demographic factors
Prevalence

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Introduction

Corona viruses, first identified in the 1960s, are a large family of viruses that affect a wide range of domesticated animals and pets as well as bats (Lau, Lee, Tsang, Yip, Tse, & Lee, 2011). These viruses can cause respiratory infections, from colds to more serious illnesses such as Middle East Respiratory Syndrome (MERS) and severe acute respiratory syndrome **(**SARS). In December 2019, a mutant strain of the virus was identified in Wuhan, China, causing a disease called COVID-19 (World Health Organization, 2019). COVID-19 virus spreads easily in geographically affected areas. This spread means that people may not know how or where they became infected with the virus (Jernigan, Low & Helfand, 2004). According to the World Health Organization, the virus has spread throughout the world (Sa, 2020). Corona virus also spread in Iran in late February 2020 and has rapidly endangered mental and physical health. The symptoms of the virus range from mild to severe. Significant signs and symptoms of this disease include fever, cough, and respiratory failure (Wu & McGoogan, 2020). The disease leads to a syndrome that in some cases ends in acute respiratory problems in a sick person that needs

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specialized management in the intensive care unit (ICU) (Bastola, Sah, Rodriguez-Morales, Lal, Jha & Ojha, 2020; Zhu, Zhang, Wang, Li, Yang & Song, 2020). One of the most important symptoms of this disease is acute respiratory symptom which leads to the death of the patients in 2% of cases. Due to the prevalence and transmission of the disease, World Health Organization declared a state of emergency in February 4th and recommended that countries reduce person-to-person transmission of the disease by reducing contact with people, especially those infected and staff in patient care and treatment wards in order to control its global expansion (World Health Organization, 2020). Unfortunately, this method has not worked alone, and the growing number of patients has shown that in addition to these patients, there are a large number of asymptomatic carriers in the community. This has forced some parts of the world to complete quarantine (such as China and Italy) or to carry out macro and national preventive care (such as Iran, the UAE, South Korea) throughout the cities, provinces and even country (Alizade & Saffarinia, 2020). This pandemic disease has brought not only the risk of death from viral infections but also unbearable psychological stress in China and the rest of the world (Xiaoyun & Fenglan, 2020). There have been reports of the widespread psychological impacts of the disease on the general public, patients, medical staff, children and the elderly (Zhu, Zhang, Wang, Xinwang, Yang, & Song, 2020).

Unstoppable release of COVID-19, the adverse condition of patients isolated in intensive care units with acute respiratory problems, lack of an effective medicine treatment, and ultimately the resulting mortality are among the most important factors that can highly affect mental health of those infected with the virus (Lima, Carvalho, Lima, Nunes, Saraiva, & De Souza, 2020). When a disease such as corona spreads, the fear of illness and the fear of death, along with the turmoil of daily activities, cause healthy people to become anxious (Fischhoff, 2020). Recent studies have shown that in addition to negative economic and social consequences of corona prevalence, psychological consequences such as increased loneliness, decreased social support (Asmundson & Taylor, 2020), and depression (Courtet, Olié, Debien & Vaiva, 2020), anxiety and worry are also observed (Reger, Stanley, & Joiner, 2020). It is well known that stressful events such as corona disease and its epidemic cause significant psychological trauma, including post-traumatic stress disorder and depression (Schwartz, Rasul, Gargano, Lieberman-Cribbin, Brackbill, & Taioli, 2019). Fear of the spread of the disease and how it is transmitted and widespread changes in people's daily lives have led to stress and mental distress, which results in the spread of sleep disorders (Voitsidis, Gliatas, Bairachtari, Papadopoulou, Papageorgiou, & Parlapani, 2020). Insomnia is another problem in people with COVID-19 that may occur in isolated or quarantined areas. The results of a study conducted in China during the dissemination of COVID-19 in Wuhan show that the quality of sleep index in these patients is greatly reduced (Zhang, Shang, Ma, Jia, Sun, & Guo, 2020). Feeling anxious and worried to the point of stress and clinical anxiety can also lead to obsessive-compulsive disorders (Rubin & Wessely, 2020).

Anxiety is a common symptom in patients with chronic respiratory disorders and could significantly reduce patients' quality of life (Cao, Fang, Hou, Han, Xu, & Dong, 2020). In almost all cases, anxiety assessment also includes physical cases that could overlap with the symptoms of chronic respiratory illness and side effects of medications (Dong, Wang, Tao, Suo, Li, & Liu, 2017). During the period of home quarantine, a person's routine is disrupted and as a result he is less able to predict his future and plan for it. People feel that their control over life is reduced and this makes them feel insecure and anxious (Tang, Ibrahim, & West, 2012). Anxiety is the most fundamental feature of a crisis situation, and in its creation, the unpredictability of the future has the greatest share (Menec, Chipperfield, & Perry, 2012). Anxiety about COVID-19 is common and appears to be due to the unknown and ambiguous nature of the virus. Fear of the unknown has reduced the perception of immunity in humans and has always been a concern for humans. Little scientific knowledge also exacerbates this anxiety (Bajema, Oster, & McGovern, 2020). At this time, people are looking for more information to relieve their anxiety. Anxiety could cause people to fail to recognize right and wrong information, so they may be exposed to false news (To, Tsang, & Yip, 2020). Stress and anxiety could weaken the immune system and make people vulnerable to diseases such as corona (Alipour, Ghadami, Alipour, & Abdollahzadeh, 2020). When people's anxiety is more than normal in a crisis, their anxiety response triggers destructive behaviors such as attacks on grocery stores, health centers, pharmacies, and healthcare stores, leading to scarcity of these items in the country's service system (World Health Organization, 2019). As a result, people need to learn different strategies to deal with anxiety.

In their study, Wang et al. (2020) investigated the psychological impacts of Corona disease concluded that 52.8% of the respondents evaluated the psychological impacts of the prevalence of this disease as moderate or severe. 16.5% reported depressive symptoms, 28.8% reported anxiety symptoms, and 8.1% reported stress. In a study conducted by Zandifar and Badrfam (2020) that examined the prevalence of anxiety levels among Iranian population, the prevalence of anxiety was reported to be 23.5%. In a review of the study conducted by Pappa et al. (2020) on the prevalence of corona-related anxiety, a total of 12 studies estimated the outbreak to be 23.2%. A study by Huang and Zhao (2020) that studied the prevalence of corona anxiety among Chinese population concluded that

the prevalence of this disorder is 35.1%. The study conducted by Casagrande, Favieri, Tambelli and Forte (2020) on the consequences of corona disease among Italian population, also found a high prevalence of anxiety (32.1%). A study of demographic factors affecting the prevalence of corona in the Moghanibashi study (2020) showed that the prevalence of anxiety in women is higher than men. Marital status has no effect, and the anxiety is higher among those with lower education and it is lower among the elderly.

According to the mentioned research records and the pathogenic nature of this virus, the rate of spread and also the percentage of deaths due to this disease may endanger the state of mental health of people at different levels of society from infected patients, health care staff , families, children, students, psychological patients, and even personnel of different occupations in a variety of ways, all of which could lead to anxiety about the disease, which in turn weakens the person's immune system and vulnerable to the negative consequences of the disease, so identifying the respective demographic factors could be an important step in preventing it, and it could also lead to the design of appropriate training strategies to deal with it. The aim of this study is to determine the prevalence of corona anxiety and its demographic factors in Mashhad in spring 2020.

Method

Participants

The method of this research was descriptive and of survey type. The population of this study was all citizens of Mashhad in spring 2020. Due to the impossibility of accessing the complete list of people, 517 people participated in this study using the convenience sampling method via social networks.

Instrument

1. Demographic Questionnaire: The demographic questionnaire included variables such as gender, marital status, age, and level of education.
2. Corona Disease Anxiety Scale (CDAS): This tool was developed and validated to measure anxiety caused Corona virus prevalence in Iran. The final version of this instrument has 18 items and 2 agents. Items 1 to 9 assess psychological symptoms and items 10 to 18 assess physical symptoms. The instrument is rated on a 4-point Likert scale (never = 0, sometimes = 1, most of the time = 2, and always = 3); Therefore, the highest and lowest score that the respondents will get in this questionnaire is between 0 and 54. High scores in this questionnaire indicate a higher level of anxiety among individuals. The reliability of this tool has been obtained using Cronbach's alpha method for the first factor (a = 0.879), the second factor (a = 0.861) and for the whole questionnaire (a = 0.919) (Alipour et al., 2020).

Procedure

According to the quarantine conditions and observance of health instructions as well as lack of face-to-face access to the subjects, the data were collected as an online questionnaire. The data gathering method was that the entire questionnaire and the purpose of the study were designed on a web page and the link was sent to the subjects through WhatsApp and Telegram, so that they could enter the questionnaire page through that link to complete it. Between March 20 through March 31, 517 participants completed the questionnaires. The data was analyzed using descriptive and inferential statistical tests, including frequency, frequency percentage, Chi-square, and Kruskal-Wallis, based on cut-off point of Corona anxiety questionnaire by SPSS software, Ver. 25.

Results

In the current study, 517 people participated in the study, of whom 324 (62.7%) were women and 193 (36.9%) were men. In terms of marital status, 285 participants were single (54.5%), and 232 were married (44.4%). The results also showed that 331 participants (63.3%) were 18 to 30 years old, and 137 (26%) aged 31 to 40 years, 38 (7.3%) were 41 to 50 years old, 11 (2.1%) were 51 to 60 years and 1 (0.2%) was over 60 years old. In addition, an examination of participants' educational background showed that 97 (18.5%) had high school diploma, 22 (4.2%) had associate degree, 215 (41.1%) had bachelor's degree, 170 (32.5%) had master’s degree and 13 (2.5%) had Ph.D.

According to the results, the highest age frequency of the participants in the study was 18 to 30 years old, with a frequency of 331 participants (63.3%) and the lowest age frequency, a range of more than 60 years with 1 person (0.2%). The highest frequency of education is related to people with bachelor's degree with 215 people (41.1%) and the lowest frequency is for people with a Ph.D. who were only 13 participants (2.5 percent).

Table 1. Rate of Corona Anxiety Outbreak

Group	Number	Percent
Healthy	368	71.17
With Anxiety	149	28.82
Total	517	100

In order to determine the prevalence of corona anxiety based on the recommended cut-off point 16 in the questionnaire, the frequency and percentage of corona anxiety in the subjects were calculated. According to Table 1, 149 participants in the study equivalent to 28.82% of the sample had moderate to severe corona anxiety.

Table 2. Comparison of Frequency distribution of Corona virus status in terms of gender, marital status, education & age

Status of Corona Anxiety			Healthy		With Corona Anxiety		Result of Kai-Square Test	
Variable		No.	Frequency	Percent	frequency	Percent	X_2	P
Gender	Female	324 (62.66%)	223	68.82	101	31.17	2.62	
	Male	193 (37.33%)	145	75.12	48	24.87	0.01	
Marital Status	Single	285 (55.12%)	217	76.14	68	23.85	7.80	
	Married	232 (44.87%)	151	65.08	81	34.91	0.13	
Education	High School Diploma	97 (18.76%)	61	62.88	36	37.11		
	Associate's Degree	22 (4.25%)	18	81.81	4	18.18		
	Bachelor's Degree	215 (41.58%)	157	73.02	58	26.97	14.30	
	Master's Degree	170 (32.88%)	121	71.17	49	28.82	0.001	
	PhD.	13 (2.51%)	11	84.61	2	15.38		
Age	18-30	331 (64.02%)	248	74.92	83	25.07		
	31-40	137 (26.49%)	90	65.69	47	34.30	10.11	
	41-50	38 (7.35%)	24	63.15	14	36.84	0.25	
	51-60	11 (2.12%)	6	54.54	5	45.45		
	Over 60	1 (0.19%)	1	100	0	0		

According to Table 2, the prevalence of corona anxiety in women (31.17%) is higher than male participants (24.87%) and Chi-square test ($X_2 = 2.62$, $p = 0.01$) points out that these two groups are significantly different. The results of Chi-square test for marital status showed that ($X_2 = 7.80$, $p = 0.13$) there is no significant difference between single and married participants in terms of corona prevalence.

The results of Chi-square test showed that (X_2=14= 30, p=0.001) there is a significant difference between different educational groups in terms of corona prevalence. Participants with high school diploma (37.11%) had the highest anxiety than those with higher education.

A look at Table 2 on the prevalence of corona anxiety among different age groups showed that the prevalence rate of corona anxiety in people aged 51-60 years (45.45%) is higher than other age groups, but regarding the Chi-square test ($X_2 = 10.11$, $p = 0.25$), this difference is not significant and there is no significant difference between the prevalence of corona anxiety at different ages.

Discussion

The purpose of this study was to determine the prevalence of corona anxiety and its related demographic factors among the citizens of Mashhad in spring 2020. Although there is very little research on the prevalence of contagious diseases in general and corona disease in particular, it is possible to explain these results in general terms based on the major role of anxiety in corona anxiety.

The first finding of this study showed that the prevalence of corona anxiety among the citizens of Mashhad is 28.82. This finding is consistent with the research conducted by Wang et al. (2020), Casagrande et al. (2020) and Huang et al. (2020). The results showed that more than a quarter of people have corona anxiety which could have negative psychological consequences for people during and after the epidemic. As corona disease progresses, so does the fear and anxiety of the disease throughout the community. Cases of death, being unknown, changing guidelines for preventing the disease by World Health Organization, and the way society treats people infected are all among the causes of this fear and anxiety epidemic. Research shows that the development of diseases such as respiratory diseases due to serious physical problems and reduced quality of patients' lives will lead to anxiety caused by the disease (Wu et al., 2020). Most research has focused on patients' anxiety, but the reality is that when a disease such as corona spreads, fear of disease, and fear of death spread, along with the turmoil of daily activities, also causes healthy people to become anxious. (Fischhoff, 2020). Anxiety is a common symptom in patients with chronic respiratory disorders and could significantly reduce patients' quality of life. In almost all cases, anxiety assessment includes physical cases that could overlap with symptoms of chronic respiratory illnesses and side effects of medications (Dong et al., 2017).

Another finding of this study indicated that the prevalence of corona anxiety in women was higher than in men (31.17% compared to 24.87%). This finding is consistent with other studies that report a higher prevalence of anxiety in women than men. For example, the results of the prevalence of social anxiety in Golestan province in Iran showed that the prevalence of this disorder in women to men is 1.3 to 1 (Mohammadim, Alavi, Mahmoodi, Shahrivar, Tehranidoost & Saadat, 2018). The results of a prevalence study in Canada also demonstrated that the prevalence of anxiety disorders in women is 20% and it is 11% in men (Van Ameringen, Mancini, & Farvolden, 2013). The results of a study conducted by Baptista et al. (2015) showed that 11.6% of students in Brazil have social anxiety disorders and women experience this disorder more than men. The results of Wallas's (2016) study also showed that female students have more avoidance behaviors and negative emotions than male students, which is specific to social anxiety and they have more difficulty in choosing a job and acquiring social skills. The results of existing studies show that men increase their performance when they are in a threatening situation and use more problem-solving coping strategies, and this could be one of the reasons for their success in controlling and managing stress. In response to threatening situations, women are more likely to use emotion-focused coping strategies and more likely to engage in avoidance behaviors than men, which could

exacerbate their anxiety (De Saintonge & Dunn, 2015). In addition, female social roles as well as their sex hormones appear to play an important role in women's greater susceptibility to anxiety problems (World Health Organization, 2019).

Another finding of this study demonstrated that corona anxiety was more prevalent in people with low education. This finding is consistent with the epidemiological study of social anxiety disorder in the United States (2010), which showed that this disorder is more common among people with lower education (Ruscio, Brown, Chiu, Sareen, Stein & Kessler, 2018). Research has shown that anxiety disorder is more prevalent in lower educational levels (Beard & Amir, 2014). People with higher education appear to be less likely to be exposed to corona anxiety due to the use of more adaptive coping strategies, such as obtaining information about the disease, receiving and providing social and information support.

The results of this study also showed that there was no significant difference between married and single people and different age groups in terms of prevalence of corona anxiety. These results are consistent with Moghanibashi's (2020) study that showed marital status has no impact on the prevalence of corona anxiety. This result is also consistent with the study conducted by Alizade et al. (2015) which showed that there was no significant relationship between age and anxiety. These results are also inconsistent with the results of Kessler et al. (2013) and Scott et al. (2014), who have shown that the prevalence of anxiety disorders decreases with age. Explaining these results, it could be said that most anxiety disorders such as generalized anxiety disorder, panic, phobias, which are characterized by anxiety, are more common at an early age and decrease with age, but since corona anxiety is more anxiety of disease which has a specific cause, and that is the general tension and anxiety created in the society, and the novelty and unknowingness of the disease has also contributed to the aggravation of anxiety. It is more like an anxiety state that has made all age groups equally anxious.

Difficulty in accessing the study sample due to corona conditions was the main limitation of the present study. It is recommended that this study be repeated in other cities due to the different prevalence of the disease in different provinces. The results of this study indicate the need for effective strategies to deal with the increasing prevalence of corona anxiety and its implications and consequences considering demographic information.

Conclusion

Overall, the results of this study showed that the prevalence of corona anxiety among the citizens of Mashhad is 28.82%. This prevalence is higher in women and people with lower education.

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Conflict of interest

The authors declare that they have no conflicts of interests

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