# The Fear of COVID-19 Infection one Year After Business Reopening in Iranian Society

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# Abstract

**Background:** People's participation in more efficient control of the disease and public awareness about the risk of COVID-19 affect their preventive behavior. This study examines the level of fear of COVID-19 infection in Iranian society after returning to social activities and business reopening.

**Methods:** This Cross-Sectional study consisted of urban dwellers in Iran, and the data gathering tool was a researcher-designed questionnaire. To design the instrument, the authors interviewed experts and ordinary people to determine the key questions . Then, the questions were modified and finalized based on the experts' feedback and a reexamination by the experts after two weeks. An online version of the questionnaire was disseminated using social networks. 168 people were included in the study by the available sampling method. Data were analyzed through descriptive statistics methods. Quantitative data as mean and standard deviation were reported, and the qualitative data were reported as numbers. Chi-square test and Spearman correlation coefficient were used to examine the relationship between questions related to COVID-19 infection fear and demographic variables. Data analyses were done in SPSS 20.

**Results:** The study was carried out on 168 participants, and 78 of them were employees of different offices. The participants believed that among the ways of spreading the disease, kissing and hugging (n=142, 84.5%), shaking hands (n=127, 75.6%), contact with the saliva of an infected person (n=116, 69.0%), and spread through the air (n=60, 35.7%) had the highest frequencies. **Conclusion:** Fear of COVID-19 infection in the participants was at moderate and above moderate levels. The participants also hoped that the vaccine would be found and made available to the public. Policy-makers in the health sector can use the results.

Please cite this article as: Poursadeqiyan M, Kasiri N, Khedri B, Ghalichi Zaveh Z, Babaei Pouya A, Barzanouni S, Milad Abbasi, Feiz Arefi M, Khajehnasiri F, Dehghan N. The Fear of COVID-19 Infection one Year After Business Reopening in Iranian Society. J Health Sci Surveillance Sys. 2022;10(3):284-292.

Keywords: Anxiety, COVID-19, Distress, Prevention, Risk, Stress

## Introduction

The fear of COVID-19 infection can be an index forpreventing and controlling the COVID-19 pandemic.<sup>1</sup> It is notable; however, the term "fear" carries a negative meaning and might weaken the immune system. In addition, the fear can be an indication that individuals have perceived the risk and that they would better observe health codes for prevention.<sup>2</sup> The growing COVID-19

pandemic has been a challenge to all countries' health systems, and many individuals have developed a phobia of COVID-19.<sup>3</sup> The fear of infection is one form of fear and those having the fear feel a constant risk of being infected and tend to visit physicians frequently.<sup>4</sup> The stronger the fear, the stronger the stress, which degrades the quality of life.<sup>5</sup>

The fear of being infected is one of the most bothering obsessions that creates strong worries, resulting in controlling and restricting behaviors.<sup>6</sup> The fear negatively and psychologically affects public health and disrupts many everyday activities such as business and traveling.<sup>7</sup> The fear of COVID-19 infection was a global issue even when the disease was limited to China. The fear follows two trends; when the disease is considered a risk factor and the fear increases safety level in society and helps cut the transmission chain.<sup>3</sup>

Measures taken to minimize the sthe spread of the disease are public informing campaigns, protective behaviors educations (washing hands and keeping social distance), and provision of medical care.8 It is not yet known how individuals change their behavior under the risk of the disease, to what extent they are aware of the factors in the spread of the virus, or to what extent they realize the risk.9, 10 It is repeatedly mentioned that the expansion of the disease is a function of people's tendency to adopt preventive behaviors in terms of public health. This issue depends on realizing public health risks.11 Studies have shown that in emergencies, people reactions and behavior are functions of their understanding of risks and damages.<sup>12</sup> Perceiving the risk is a mental assessment process of the probability of an event and how to face it. Understanding the risk is highly important in safety and health, and many accidents are due to a wrong perception of risks.<sup>13</sup> According to the protection motivation theory, new risks are consideredunknown and uncontrollable, and stronger protection motivation is achieved through a more profound understanding.<sup>14</sup> Following the outbreak of COVID-19, the Iranian government introduced social limitations, including public quarantine at home so that those who could stay at home were asked to stay at home. The fact that people are worried about losing their jobs during quarantines has a direct relationship with mental health.<sup>15</sup> People need to observe COVID-19 health protocols when they have to go to their workplace. Such protocols require finding sick workers and separating them from others in the early stages of the disease, observing hand hygiene, respiratory hygiene, space hygiene, and social distancing.

People should be educated about the right way to use face mask, wash hands, cough, and sneeze. In addition, screening and measuring fever routinely, and preventing contact with individuals who have trivial respiratory symptoms should be followed.<sup>16</sup> Given that the virus remains active from a few hours to a few days on different surfaces, public spaces such as bathrooms and dining rooms should be disinfected frequently. The air in closed spaces should be ventilated properly and doors and windows should be remained open. Shaking hands should be banned. Before entering the home, car keys, wallet, pen, and similar objects should be disinfected using alcohol and other sanitizers.<sup>16-18</sup> Public participation has a vital role in better and more efficient control of COVID-19 and it is necessary to have a better perception of the risk; therefore the present study examines the level of fear of COVID-19 infection in Iranian society one year after returning to social activities and businesses reopening.

## **Methods**

The descriptive cross-sectional study was carried out in the spring of 2021, one year after returning to social activities to examine the level of fear of COVID-19 in the Iranian population. The study population consisted of Iranians in different cities, and the data gathering instrument was a researcher-designed questionnaire. The items of the questionnaire were designed by interviewing experts and ordinary people. The questionnaire was administered in an electronic form in social media (WhatsApp, Telegram, and so on). Data gathering took about one month. The participants were informed about the study's objectives, and those interested participated in the study. The questionnaire was filled out by the participants or by a literate person if the participant was not literate. Only completed questionnaires entered the study.

Finally, 168 people were included in the study by the available sampling method. Descriptive statistics methods were used to analyze the data. Chi-square test and Spearman correlation coefficient were also used to examine the relationship between questions related to COVID-19 infection fear and demographic variables.

Descriptive statistics methods were used to analyze the data. Quantitative data were reported as mean and standard deviation, and the qualitative data were reported as numbers (percentages) in SPSS 20.

Also, a chart showed the frequency of different ways of contracting the coronavirus (COVID-19) and the main symptoms of the disease.

Iran University of Medical Science approved the study design and the questionnaires were filled out anonymously while the participants' information remained confidential.

#### Results

The COVID-19 Infection Fear Questionnaire was administered one year after pandemic when returning to social activities from the 24<sup>th</sup> of May to the 23<sup>rd</sup> of June 2021 via social media. 168 questionnaires were filled out by individuals in 27 provinces in Iran. The highest frequency of respondents was in Tehran (26.8%), Khorasan Razavi (11.9%), and Alborz (8.3%) (Table 1).

The participants were 79 men (48.17%) with a mean age of  $36.85\pm12.1$  and 85 women (51.83%) with a mean age of  $33.28\pm9.8$ . The largest age group was 21-40 years (n=100, 59.5%). In terms of education,

| Variable: State of residence | Frequency | Percent |  |
|------------------------------|-----------|---------|--|
| Alborz                       | 14        | 8.3     |  |
| Azarbaijan.Gharbi            | 3         | 1.8     |  |
| Azarbaijan.Sharghi           | 3         | 1.8     |  |
| Bushehr                      | 2         | 1.2     |  |
| Chahar Mahal Bakhtiari       | 1         | 0.6     |  |
| Esfahan                      | 8         | 4.8     |  |
| Fars                         | 12        | 7.1     |  |
| Ghazvin                      | 1         | 0.6     |  |
| Gilan                        | 2         | 1.2     |  |
| Hamedan                      | 2         | 1.2     |  |
| Hormozgan                    | 1         | 0.6     |  |
| Ilam                         | 7         | 4.2     |  |
| Karaj                        | 2         | 1.2     |  |
| Kerman                       | 13        | 7.7     |  |
| Kermanshah                   | 2         | 1.2     |  |
| Khorasan Razavi              | 20        | 11.9    |  |
| Khuzestan                    | 5         | 3.0     |  |
| Kohgiloyeh and Boyerahmad    | 1         | 0.6     |  |
| Kordestan                    | 2         | 1.2     |  |
| Lorestan                     | 2         | 1.2     |  |
| Markazi                      | 1         | 0.6     |  |
| Mazandaran                   | 10        | 6.0     |  |
| Qom                          | 1         | 0.6     |  |
| Semnan                       | 1         | 0.6     |  |
| Tehran                       | 46        | 27.4    |  |
| Unknown                      | 3         | 1.8     |  |
| Zanjan                       | 3         | 1.8     |  |
| Total                        | 168       | 100.0   |  |

the majority had a bachelor's degree or higher (n=133, 79.2%). Moreover, 96 participants were married (57.1%), and 78 were office employees (46.4%) (Table 2).

As listed in Table 3, 138 (82.1%) of the participants believed that surviving COVID-19 was possible. In addition, 131 (78.9%) of the participants thought that washing hands regularly and using sanitizers were the ways of preventing COVID-19. Moreover, 143 (85.6%) believed that wearing a facial masks efficiently prevented the disease, and 87 (52.4%) believed that COVID-19 was airborne. 110 (66.7%) participants stated that they would welcome COVID-19 patients after recovery to society, and 68 (40.7%) believed that the disease would eventually be controlled in the country.

The results of the present study showed a significant and direct relationship between people's belief in controlling coronavirus disease and education level (P<0.001).

The present study showed a significant and directrelationship between constant handwashing, using disinfectant solutions (P<0.001), using masks (P<0.004), welcoming patients' improvement (P<0.001), and the level of education.

The participants believed that among the ways of spreading COVID-19, kissing and hugging (n=142, 84.5%) had the highest frequency, followed by

shaking hands (n=127, 75.6%), exposure to the saliva of infected individuals (n=116, 69.0%), and air (n=60, 35.7%) (Figure 1).

As demonstrated in a Figure 2, the three main symptoms of COVID-19 that should be seen before visiting clinics are fever (n=129, 76.8%), dyspnea (n=135, 86.3%), and dry cough (n=127, 75.6%).

81 participants (48.5%) reported watching the daily news on COVID-19 and the daily death toll of the disease. In addition, 81 participants (49.9%) found the risk of being infected by COVID-19 at a moderate level, and 37 participants (22.2%) believed that the risk of being infected by COVID-19 at work was low to very low. 126 participants (75.4%) found the risk of being infected outside the house (not at work) above moderate level. Moreover, 93 participants (56.0%) believed that the risk of being infected by the disease at parties was high and very high.

92 participants (56.1%) believed in a moderate risk of being infected by COVID-19 through contact with relatives and friends. On the other hand, only 55 participants (33.2%) believed that the risk of being infected with COVID-19 in the next six months was low and very low. 31 participants (18.4%) had a low and very low spirit due to the bad news they would hear about the pandemic. In addition, 90 participants (53.9%) expressed that they had become nervous and aggressive in low and very low extents. On the other

| Variable       |                      | N (%)      | Percentage regardless of missing values, not filled |
|----------------|----------------------|------------|---|
| Gender         | Male                 | 80 (47.6)  | 47.9  |
|                | Female               | 87 (51.8)  | 52.1  |
|                | Unknown (Not filled) | 1 (0.6)    | -   |
|                | Total                | 168 (100)  | -   |
| Age            | 1-20                 | 17 (10.1)  | 10.4  |
|                | 21-40                | 100 (59.5) | 61  |
|                | 41-60                | 44 (26.2)  | 26.8  |
|                | 61-80                | 3 (1.8)    | 1.8   |
|                | Unknown (Not filled) | 4 (2.4)    | -   |
|                | Total                | 168 (100)  | -   |
| Education      | Illiterate           | 1 (0.6)    | -   |
|                | Elementary school    | 0 (0)      | -   |
|                | Middle school        | 7 (4.2)    | -   |
|                | High school          | 1 (0.6)    | -   |
|                | Diploma              | 19 (11.3)  | -   |
|                | Associate degree     | 7 (4.2)    | -   |
|                | Bachelor degree      | 52 (31)    | -   |
|                | Master degree        | 45 (26.8)  | -   |
|                | Doctoral degree      | 36 (21.4)  | -   |
|                | Total                | 168 (100)  | -   |
| Marital status | No                   | 66 (39.3)  | 39.8  |
|                | Yes                  | 96 (57.1)  | 57.8  |
|                | Other                | 4 (2.4)    | 2.4   |
|                | Unknown (Not filled) | 2 (1.2)    | -   |
|                | Total                | 168 (100)  | -   |
| lob            | Student              | 5 (3)      | -   |
|                | University student   | 38 (22.6)  | -   |
|                | Office worker        | 78 (46.4)  | -   |
|                | Self-employment      | 13 (7.7)   | -   |
|                | Housewife            | 9 (9.4)    | -   |
|                | Retired              | 4 (2.4)    | -   |
|                | Other                | 21 (12.5)  | -   |
|                | Total                | 168 (100)  | -   |

 Table 2: Demographics of the participants

| Table 3: Items that measure | the fear of infection with COVID-19 |
|-----------------------------|-------------------------------------|
|-----------------------------|-------------------------------------|

| No | Question  | Option                 | N (%)      |
|----|---|------------------------|------------|
| 1  | Is it possible to survive and recover from the coronavirus?               | Yes                    | 138 (82.1) |
|    |   | No                     | 3 (1.8)    |
|    |   | Do not know / Not sure | 27 (16.1)  |
|    | Can regular hand washing and the use of disinfectant solutions prevent    | Yes                    | 131 (78.9) |
|    | coronavirus (COVID-19) disease?   | No                     | 10 (6)     |
|    |   | Do not know / Not sure | 25 (15.1)  |
|    | Does using a mask affect the prevention of coronavirus (COVID-19)?        | Yes                    | 143 (85.6) |
|    |   | No                     | 5 (3)      |
|    |   | Do not know / Not sure | 19 (11.4)  |
| 4  | Can coronavirus (COVID-19) be transmitted through the air?                | Yes                    | 87 (52.4)  |
|    |   | No                     | 46 (27.7)  |
|    |   | Do not know / Not sure | 33 (19.9)  |
|    | Do you welcome people in the community who have recovered from the New    | Yes                    | 110 (66.7) |
|    | Coronavirus (COVID-19)?   | No                     | 22 (13.3)  |
|    |   | Do not know / Not sure | 33 (20)    |
|    | Finally, is coronavirus (COVID-19) disease successfully controlled in the | Yes                    | 68 (40.7)  |
|    | country?  | No                     | 33 (19.8)  |
|    |   | Do not know / Not sure | 66 (39.5)  |



Figure 1: Opinions about the ways of being infected with COVID-19



Figure 2: Opinions about the main symptoms of COVID-19 before visiting health clinics.

hand, 39 participants (23.4%) mentioned that their level of becoming nervous and aggressive was high and very high.

101 participants (60.5%) mentioned low and very low, when they were asked if they had obsessive behaviors of checking COVID-19 symptoms. On the contrary, the 23 participants (13.8%) reported high and very high obsessive behaviors. In addition, 102 participants (61.4%) had experienced a very low increase in problems at work, and in the case of six participants (3.6%), this increase was high. 78 participants (46.4%) had a moderate to high mental engagement with COVID-19 and the risk of giving the disease to others. Only 24 participants (14.2%) mentioned that they had low and very low control over their concerns about COVID-19. 91 participants (54.1%) mentioned they concerned about their immune system at low and very low levels, and 15 participants (9.0%) mentioned that they started their days with high to very high levels of hopelessness and down mood. In addition, 137 participants (82.5%) had a moderate to a high level of hope that the vaccine would be found and distributed (Table 4).

We used the Chi-square and Fisher's exact test to examine the relationship between the fear about COVID-19 infection and the respondents' gender . According to the test results, there is a significant relationship only between questions in Table 5 and gender (P<0.05).

We used the Spearman correlation coefficient to examine the relationship between fear of coronavirus

disease and the age of respondents. According to the results of the Spearman correlation coefficient, there is a significant relationship only between questions in Table 6 and age (P<0.05)

For example, considering the question "Have you become nervous and aggressive during this period?", correlation coefficient is negative, showing that older people were less nervous and aggressive.

We used the Chi-square and Fisher's exact test to

examine the relationship between fear of COVID-19 infection and the marital status of the respondents. Based on the test results, there is a significant relationship only between questions in Table 7 and marital status (P<0.05).

Questions about COVID-19 infection and respondents' education level. According to the Spearman correlation coefficient results, there is a significant relationship only between questions in

Table 4: Items measuring the fear of COVID-19 infection after the return to social activities

| No | Question  | Very low   | Low       | Medium    | High      | Very high |
|----|---|------------|-----------|-----------|-----------|-----------|
|    |   |            |           | N (%)     |           |           |
| 1  | How much do you follow coronavirus-related news and daily patient statistics  | 27 (16.2)  | 20 (12)   | 81 (48.5) | 21 (12.6) | 18 (10.8) |
| 2  | How much probability are you getting infected with the coronavirus?   | 28 (17.1)  | 23 (14)   | 81 (49.4) | 27 (16.5) | 5 (3)     |
| 3  | How much probability are you getting infected with the coronavirus at work?   | 18 (10.8)  | 19 (11.4) | 66 (39.8) | 35 (21.1) | 28 (16.9) |
| 4  | How much probability are you getting infected with the coronavirus outdoors (other than at work)?                           | 15 (9)     | 26 (15.6) | 67 (40.1) | 43 (25.7) | 16 (9.6)  |
| 5  | How much probability are you getting infected with the coronavirus at parties?  | 11 (6.6)   | 17 (10.2) | 45 (27.1) | 55 (33.1) | 38 (22.9) |
| 6  | How much is the probability that people around you and your<br>acquaintances will be getting infected with the coronavirus? | 12 (7.3)   | 20 (12.2) | 92 (56.1) | 30 (18.3) | 10 (6.1)  |
| 7  | How much is your risk probability of getting infected with coronavirus disease in the next 6 months?                        | 24 (14.5)  | 31 (18.7) | 72 (43.4) | 29 (17.5) | 10 (6)    |
| 8  | Has your mood deteriorated due to recent events and hearing about coronavirus disease?                                      | 47 (28)    | 40 (23.8) | 50 (29.8) | 17 (10.1) | 14 (8.3)  |
| 9  | Have you become nervous and aggressive during this time?  | 51 (30.5)  | 39 (23.4) | 38 (22.8) | 24 (14.4) | 15 (9)    |
| 10 | Do you obsessively check for signs of coronavirus disease?  | 61 (36.5)  | 40 (24)   | 34 (20.4) | 22 (13.2) | 10 (6)    |
| 11 | Is your sleep disturbed?  | 84 (50.6)  | 37 (22.3) | 22 (13.3) | 15 (9)    | 8 (4.8)   |
| 12 | Do you have problems with your co-workers?  | 102 (61.4) | 34 (20.5) | 24 (14.5) | 6 (3.6)   | 0 (0)     |
| 13 | Are you thinking these days about being a carrier of coronavirus disease?   | 56 (33.3)  | 34 (20.2) | 47 (28)   | 18 (10.7) | 13 (7.7)  |
| 14 | Can you control your worries?   | 11 (6.5)   | 13 (7.7)  | 55 (32.7) | 55 (32.7) | 34 (20.2) |
| 15 | Are you worried about your immune system?   | 54 (32.1)  | 37 (22)   | 42 (25)   | 23 (13.7) | 12 (7.1)  |
| 16 | Do you wake up in the morning with sadness and despair?   | 83 (50)    | 35 (21.1) | 33 (19.9) | 6 (3.6)   | 9 (5.4)   |
| 17 | How much do you hope the vaccine for this disease will be prepared<br>and distributed?                                      | 15 (9)     | 14 (8.4)  | 51 (30.7) | 38 (22.9) | 48 (28.9) |

Table 5: Examining the relationship between gender and COVID-19 infection fear questions

| No | Question  | Options   | Male       | Female    | Test result          |
|----|---|-----------|------------|-----------|----------------------|
| 1  | Have you become nervous and                             | Very low  | 28 (35.4)  | 23 (26.4) | χ²=9.7               |
|    | aggressive during this time?                            | Low       | 197 (24.1) | 19 (21.8) | P=0.046              |
|    |   | Medium    | 14 (17.7)  | 24 (27.6) |                      |
|    |   | High      | 18 (19.0)  | 9 (10.3)  |                      |
|    |   | Very high | 3 (3.8)    | 12 (13.8) |                      |
| 2  | Do you obsessively check                                | Very low  | 39 (48.8)  | 22 (25.6) | χ <sup>2</sup> =10.3 |
|    | for signs of coronavirus                                | Low       | 17 (21.2)  | 22 (25.6) | P=0.034              |
|    | (COVID-19) disease?                                     | Medium    | 13 (16.2)  | 21 (24.4) |                      |
|    |   | High      | 8 (10.0)   | 14 (16.3) |                      |
|    |   | Very high | 3 (3.8)    | 7 (8.1)   |                      |
| 3  | Is your sleep disturbed?                                | Very low  | 50 (63.3)  | 34 (39.5) | $13.9 = \chi^2$      |
|    |   | Low       | 15 (19.0)  | 22 (25.6) | P=0.006              |
|    |   | Medium    | 8 (10.1)   | 13 (15.1) |                      |
|    |   | High      | 6 (7.6)    | 9 (10.5)  |                      |
|    |   | Very high | 0 (0.0)    | 8 (9.3)   |                      |
| 4  | Do you wake up in the morning with sadness and despair? | Very low  | 45 (57.7)  | 38 (43.7) | F=10.4               |
|    |   | Low       | 18 (23.1)  | 16 (18.4) | P=0.029              |
|    |   | Medium    | 9 (11.5)   | 24 (27.6) |                      |
|    |   | High      | 4 (5.1)    | 2 (2.3)   |                      |
|    |   | Very high | 2 (2.6)    | 7 (8.0)   |                      |

| No | Questions  | Age                              |
|----|--|----------------------------------|
| 1  | How much do you follow about coronavirus disease news and daily infection statistics throughout the day? | $r_s = 0.016$<br>P=0.048         |
| 2  | Have you become nervous and aggressive during this time?   | $r_{s} = -0.232$<br>P=0.003      |
| 3  | Do you obsessively check for signs of coronavirus disease within yourself?                               | $r_s = -0.18$<br>P=0.022         |
| 4  | Is your sleep disturbed?   | $r_{s}=-0.31$<br>p<0.001         |
| 5  | Can you control your worries?  | r <sub>s</sub> =0.243<br>P=0.002 |
| 6  | Do you wake up in the morning with sadness and despair?  | $r_s = -0.21$<br>P=0.007         |

 Table 6: Examining the relationship between age and COVID-19 infection fear questions

Table 7: Examining the relationship between marital status and fear of coronavirus (COVID-19) disease

| No | Questions   | Options   | Married   | Single    | Test result          |
|----|---|-----------|-----------|-----------|----------------------|
| 1  | Is your sleep disturbed?                                | Very low  | 57 (58.2) | 27 (40.9) | χ <sup>2</sup> =10.2 |
|    |   | Low       | 24 (24.5) | 13 (19.7) | P=0.035              |
|    |   | Medium    | 9 (9.2)   | 12 (18.2) |                      |
|    |   | High      | 5 (5.1)   | 9 (13.6)  |                      |
|    |   | Very high | 3 (3.1)   | 5 (7.6)   |                      |
| 2  | Do you wake up in the morning with sadness and despair? | Very low  | 56 (57.7) | 27 (40.3) | F=11.6               |
|    |   | Low       | 20 (20.6) | 14 (20.9) | P=0.017              |
|    |   | Medium    | 14 (14.4) | 18 (26.9) |                      |
|    |   | High      | 5 (5.2)   | 1 (1.5)   |                      |
|    |   | Very high | 2 (2.1)   | 7 (10.4)  |                      |

Table 8: Examining the relationship between education level and fear of coronavirus (COVID-19) disease

| No | Questions  | Education level                  |
|----|--|----------------------------------|
| 1  | How likely are you to get coronavirus disease?   | r <sub>s</sub> =0.32<br>P<0.001  |
| 2  | How likely are you to get the coronavirus disease outdoors (other than at work)?                   | r <sub>s</sub> =0.23<br>P=0.002  |
| 3  | How likely will people around you and your acquaintances be infected with the coronavirus disease? | $r_s = 0.24$<br>P=0.002          |
| 4  | Do you obsessively check for signs of coronavirus disease?   | r <sub>s</sub> =-0.16<br>P=0.041 |
| 5  | Is your sleep disturbed?   | r <sub>s</sub> =-0.22<br>P=0.004 |

Table 8 and education level (P<0.05).

## Discussion

The coronavirus outbreak threatens the lives and health of millions of people. The epidemic leads not only to high mortality rates from viral infections, but also psychological disaster around the world, uncertainty, and unpredictability. The outbreak of an infectious disease has a high potential for psychological fear of disease transmission, leading to many psychological problems.<sup>2</sup>

The present study investigated the fear of coronary heart disease after starting social activities in Iran. In the present study, there was a significant difference between the sexes (male and female) and variables such as nervousness and aggression, obsessivecompulsive disorder, checking for coronavirus symptoms, waking up with discomfort from sleep, and having disturbing dreams.

The results also show a direct and significant relationship between age and following coronavirus news and daily patient statistics and controlling concerns (P<0.05). Although there was a significant relationship between age and aggression, obsessive-compulsive disorder, disturbed sleep, and waking up with discomfort and frustration, this relationship was inverse.

It can be explained that older people are less prone to nervous, aggressive, and obsessive behaviors due to high concentration and experience. So they wake up in the morning with hope, without discomfort and sleep disturbance.

This study also indicates a significant relationship between marital status and variables such as disturbed dreams and waking up with sadness and despair. Additionally, the results showed that singles experienced more disturbance in sleep while they woke up in the morning with frustration and sadness.

The present study results showed a significant relationship between fear of coronavirus and education level (P<0.05). Education level has a direct correlation with "the possibility of coronavirus disease", "the possibility of coronavirus disease outdoors", and "the possibility of coronavirus disease in those around" <sup>I</sup>, whereas it has a negative correlation with "obsessively check for signs of coronavirus disease" and "having sleep disturbance".

Another finding of the present study is a significant and direct relationship between people's belief in controlling coronavirus disease and education level (P<0.05). Zhong et al. (2020) reported that most people believed that COVID-19 would ultimately be under successful control,<sup>18</sup> which is consistent with the results of the present study.

This result is more due to the participants' level of education, showing that a higher level of education is effective in controlling the disease.<sup>19</sup> Given the past successes in vaccine production and encouraging people to get vaccinated, we hope to control the disease in the coming days.

The present study revealed a significant and direct relationship between education level and variables such as constant handwashing, using disinfectant solutions, using masks, and the patients' improvement, ; however, the Barzinjy study showed nosignificant relationship between education level and following coronavirus preventive methods.<sup>19</sup>

Participants said they less likely attend special ceremonies and minimally use public transportation and in-person shopping, and try to adhere to health protocols.

Kwok et al. (2020) conducted a research in Hong Kong. They claimed that people in the early days of the coronavirus observed more than 70% of personal hygiene and avoided traveling, which is consistent with the present study, but they limitedly observed the social distance<sup>3</sup> which is not consistent with the current results.

The present study participants believed that kissing and hugging, shaking hands, the infected person's saliva, and air, respectively, most likely transmit the coronavirus (COVID-19). Also, Cirrincione believes that the coronavirus spreads in the air, directly or indirectly, through shaking hands, kissing, hugging, and talking to infected people.<sup>4</sup>

The present study showed that 23.4% of people stated that they became nervous and aggressive, and 3.6% of them had problems with their colleagues in the workplace.

Also, 13.8% of the participants' sleep was very disturbed, indicating that they experienced high stress during the day. Zhu conducted a study in Wuhan, China, to examine the fear and anxiety of people with COVID-19 disease. The study showed that stress, depression, and anxiety were 29.8%, 13.5%, and 24.1%, respectively<sup>5</sup> which is consistent with the results of the present study.

Also in the Abid study of nurses, fear of COVID-19 was reported as a strong predictor of stress, depression, and anxiety.<sup>6</sup>

In a Pakistan study, fear of COVID-19 was strongly associated with negative emotional responses such as anxiety, depression, and stress.<sup>7</sup> Given that many deaths are correlated with fear;<sup>20</sup> Therefore, intervention measures in the field of stress management training and counseling in these people during the corona and post-corona conditions can be effective.

In the present study, most people referred to health centers had fever, shortness of breath, and dry cough symptoms. Studies conducted by Filatov,<sup>21</sup> Nobel,<sup>22</sup> and Hu<sup>23</sup> are also consistent with the present study, and reported fever, dry cough, and shortness of breath as the most common symptoms of Covid-19.

#### Conclusion

The qualitative findings showed that the fear of COVID-19 infection was high in the Iranian population in spring of 2021. And a high percentage of office workers feared returning to their workplace. The religious-cultural, political, cognitive, social, and emotional factors affected the Iranian population's perception of the risk of COVID-19, and the strongest correlation was between cultural and religious factors. The findings of this study can be valuable for policy-makers in the health sector. The fear of COVID-19 infection was high globally even when the disease was limited to China. The fear of COVID-19 infection has two different trends; one is when it is considered a risk factor to improve safety in society and help break the outbreak chain. Another one is when the fear negatively affect the immune system. Therefore, the fear can motivate individuals to observe health codes and preserve their health and others' in society. As the results showed, the fear of COVID-19 infection was at moderateto-high levels and people hoped to be vaccinated soon.

## **Ethical Considerations**

Ethics approval for this study was obtained from the Ethics Committee of Iran University of Medical Sciences IR.IUMS.REC.1400.360.

# Author Contributions

All authors contributed to the study and the final manuscript.

# Acknowledgment

This project was financially supported by Iran University of Medical Sciences.

# Conflicts of interest: None declared.

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