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# What Effect has Quarantine and Social Distance had on the Psychological Health of People during the COVID-19 Outbreak?

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**Abstract**
COVID-19 is a rare and deadly disease and the best way to prevent its outbreak is quarantine in cities. Despite the many benefits that quarantine may provide, its psychological consequences cannot be ignored. Therefore, the present study is conducted to investigate the prevalence of psychological symptoms in people during quarantine due to the prevalence of coronavirus. The statistical population in this study was all quarantined people in Iran, of which 202 (91 males and 111 females) were selected by the convenience sampling method. The data collection tool in this study was the SCL-90-R questionnaire, which was distributed online among individuals. The results of this study showed that the average global severity index (GSI) of men and women with 0.69 and 0.95, respectively, is in the normal range, but in men, the average dimension of hostility being 1.20, and in women, the average dimensions of depression and phobic anxiety fear being 1.25 and 1.00, respectively, are above the normal range and are in the range of mild disorder. Therefore, it is recommended to reduce the psychological consequences of quarantine by psychological support during quarantine or post-quarantine period and utilize proper psychotherapies to cure them.

**Keywords**
COVID-19, Quarantine, Psychological symptoms, SCL-90-R

## 1. Introduction

Coronavirus (COVID-19) is a rare and deadly disease. The disease is caused by a strain of the coronavirus. The name coronavirus is derived from the word crown, because of its sharp, crown-like surface. Coronaviruses widely infect vertebrates, including humans, birds, bats, snakes, mice, and other wildlife (Rodriguez-Morales et al., 2020). There are three main ways for viruses to be transmitted, including close person to person contact, transmission through airborne particles, and tactile transmission. The virus is thought to be transmitted to other people by breathing drops emitted from coughing or sneezing (Li et al., 2020). At the time of writing this paper, 2,329,651 people have been

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infected and 160,721 have died from the virus (JH CSSE, 2020). This is the third serious outbreak of the coronavirus in less than 20 years, following SARS in 2002-2003 and Morse in 2012. While human strains of the coronavirus are associated with about 15% of common colds, the disease may present with varying degrees of flu to death (Yang et al., 2020).

On March 11, 2020, the World Health Organization issued a statement declaring the outbreak of the new coronavirus a pandemic that poses a threat to the entire world, and not just to China (WHO, 2020). Following this outbreak, countries turned to quarantine or its various forms, such as social distancing that took place in Iran, to cut off the spread chain of the virus. Quarantine is the separation and restriction of movement of people who are potentially exposed to a contagious disease to make sure they do not become ill, thus reducing the risk of infecting others. The outbreak has effectively caused all cities in the world to be quarantined, while thousands of foreigners returning home from other countries have been asked to be isolated at home or in government centers (Wilder-Smith and Freedman, 2020). There are still cases like this. City quarantines were imposed during the outbreak of SARS in 2003 in parts of China and Canada, while entire villages in many West African countries were quarantined during the Ebola outbreak in 2014 (Lawson and Xu, 2007; Eba, 2014). Quarantine is often an unpleasant experience for those who experience it. Separation from loved ones, loss of liberty, uncertainty about illness, and boredom can have relatively significant effects. There have been previous reports of significant suicides and anger following quarantine in the previous cases (Miles, 2015). Also, Brooks and colleagues (2020) in a study investigating the evidence of the previous cases on the psychological effects of quarantine found that most studies have reported negative psychological effects such as post-traumatic stress symptoms, confusion, and anger, while stressors included long-term quarantine, fear of infections, frustration, boredom, insufficient resources, insufficient information, financial losses, and disgrace (Brooks et al., 2020). Some researchers have also suggested long-term effects (Barbisch et al., 2015). Therefore, the potential benefits of compulsory public quarantine should be carefully weighed against potential psychological costs. Successful use of quarantine as a measure of public health requires us to minimize the negative effects associated with it. Postoperative quarantine may have important health consequences, but researchers have focused mainly on corona manifestations and epidemiology, and have almost neglected to study the psychological effects associated with corona (Hawryluck et al., 2004). Therefore, in this study, we decided to examine possible psychological symptoms such as somatization, obsessive-compulsive disorder, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism as being among the consequences of coronavirus so that we can reduce them or identify these factors and seek to improve them in the post-quarantine period.

## 2. Material and Methods

This study is a cross-sectional study. During the April 2020, the "SCL-90 questionnaire" electronic questionnaire system was used to collect data. All those who were quarantined during the Coronavirus outbreak in Iran were eligible to participate in this study. The sampling method in this study was convenience sampling and in order to comply with health protocols, we distributed the questionnaire online among 202 people under quarantine, of which 91 were male and 111 were female. As well as before the distribution of questionnaires, we reached informed consent of the participants. In this study, we used the Symptom Checklist-90-Revised (SCL-90-R), a widely used questionnaire, to measure people's psychological symptoms after coronavirus infection, and during the quarantine, which provides direct and detailed data to address regional or global public emergencies. In the present study, Cronbach's alpha coefficient is 0.973. The procedure we used in this study was to compare means with SPSS 25.

## 3. Results

The mean of global severity index (GSI) was 0.69 ± 0.46 in men and 0.95 ± 0.55 in women (Table 1). According to the standardized score table, the normal GSI range for men is 0 to 1.06, and for women is

from 0 to 1.05, which indicates that that the GSI of the participants are in the normal range (Anisi et al., 2014).

**Table 1.** The mean of global severity index (GSI) in men and women

| Sex | Mean | N | Std. Deviation |
|---|---|---|---|
| Male | 0.69 | 91 | 0.46 |
| Female | 0.95 | 111 | 0.55 |
| Total | 0.83 | 202 | 0.52 |

For this purpose, for a more detailed assessment, we compared the overall GSI mean of the symptoms separately with the standard score. In the following tables, we have provided the general average of each dimension separately with the normal range in men and women (Table 2).

**Table 2.** The mean of the symptoms with the normal range

| | | Men (N=91) | Men Normal Range | Women (N=111) | Women Normal Range |
|---|---|---|---|---|---|
| Mean (Std. Deviation) | Somatization | 0.50 (0.47) | 0-1.18 | 0.77 (0.60) | 0-1.35 |
| | Obsessive-compulsive | 0.77 (0.63) | 0-1.21 | 0.96 (0.67) | 0-1.16 |
| | Interpersonal sensitivity | 0.56 (0.62) | 0-1.09 | 0.89 (0.71) | 0-1.02 |
| | Depression | 0.66 (0.58) | 0-1.13 | 1.25 (0.98) | 0-1.17 |
| | Anxiety | 0.54 (0.56) | 0-1.13 | 0.94 (0.78) | 0-1.15 |
| | Hostility | 1.20 (1.40) | 0-1.17 | 0.85 (0.79) | 0-1.05 |
| | Phobic anxiety | 0.74 (0.59) | 0-0.84 | 1 (0.74) | 0-0.87 |
| | Paranoid ideation | 1 (0.81) | 0-1.55 | 1.22 (0.84) | 0-1.51 |
| | Psychoticism | 0.49 (0.54) | 0-0.91 | 0.54 (0.57) | 0-0.83 |

A comparison between the numbers obtained and the normal range showed us that during the quarantine period, hostility in men and depression and phobic anxiety in women were slightly higher than the normal range and in the mild disorder range.

## 4. Discussion

The Coronavirus virus epidemic of 2020-2019 is one of the largest and most complex outbreaks in human history, affecting 210 countries worldwide. One way to fight the virus is to quarantine cities. Despite the many positive benefits of this method, its psychological consequences and the changes that it brings about in people's normal lifestyles cannot be ignored. Therefore, the present study was conducted to investigate the prevalence of psychological symptoms in people during quarantine due to coronavirus outbreak. Considering the average global severity index (GSI) in men and women, which was 0.69 and 0.95, respectively, it was found out that the average hostility in men being 1.20 and

depression and phobic anxiety in women being 1.25 and 1.00, respectively, during quarantine have increased compared to the normal range and was in the range of mild disorder. Previously, countries such as Canada had been quarantined due to the outbreak of SARS or Africa due to the outbreak of Ebola in some cities, but due to the rarity of this phenomenon worldwide, not much research has been done in this field, but in a few studies and reviews, it has been confirmed that quarantine causes psychological problems. For example, Reynolds et al. (2008) in a study of quarantine in Canada on the prevalence of SARS found that long-term quarantine experience causes psychological distress (Reynolds et al., 2008). In addition, in a conducted research, Lei et al. (2020) found quarantine effective in causing psychological issues such as anxiety and depression. However, Wang et al. (2009) did not find any significant difference between the quarantined and not quarantined groups in negative psychological consequences.

Our findings show that long-term quarantine can increase hostility in men. One of the reasons for this could be the increase in unemployment and the recession caused by the corona outbreak and the decrease in income, which leads to an increase in violence (Anderberg et al., 2016). Furthermore, failure to do daily activities and social isolation and its hormonal effects due to quarantine can also be another factor in increasing violence in men (Pahlavanet al., 2012; Pinna et al., 2004). Another finding of this study was increased depression and phobic anxiety in women during quarantine. In this situation, depression can have many factors, for example, one of the factors involved in women's depression can be men's violence and hostility, which was a result of this research, but more research is needed to determine their cause and effect relationship (Beydoun et al., 2012). These days, growing disappointing news about the spread of the coronavirus and the increase in deaths on television and social media and exposure to this information can also affect the general situation and be one of the causes of depression in women during quarantine (Becker et al., 2013). When a disease such as the coronavirus affects the world to this level and scope, the fear of it cannot be ignored. At this time, people pay more attention to their senses and physical symptoms, which can cause anxiety, which in turn can be one of the causes of phobic anxiety in women during the quarantine period and our research findings elucidated it (Fergus and Valentiner, 2010).

## 5 Conclusions

Finally, it is clear that the Coronavirus outbreak will not be the last outbreak of viral diseases, and a comprehensive emergency response plan must be developed for the future. Not only must medical facilities be prepared, but also psychological support must be provided directly or indirectly during or after the quarantine period. Otherwise, all efforts to control the deadly disease, while controlling the disease, create a new set of patients with social, behavioral, and psychological issues. One of the limitations of this study was that not many people were willing to cooperate as a result of which, the number of samples was limited and we had to use convenience sampling. It is hoped that in future studies, researchers will benefit from a larger sample size that is closer to society and makes better comparisons by predicting future events using a pretest, and finally, considering the likelihood that this epidemic is repeated in the coming years and decades, more attention should be paid to this issue so that research in this field can be expanded.

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## Conflicts of interest

All authors: No reported conflicts of interest.

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**Appendix Table 1.** Norms and levels of health of male subjects in the checklist (SCL-90-R) [13]

| **The situation of people with mental disorders →**<br>**Checklist dimensions↓** | **Normal** | **Mild disorder** | **Moderate disorder** | **Severe disorder** |
|---|---|---|---|---|
| Somatization | 0-1.18 | 1.19-1.78 | 1.79-2.38 | 2.39 and more |
| Obsessive-compulsive | 0-1.21 | 1.22-1.84 | 1.83-2.43 | 2.44 and more |
| Interpersonal sensitivity | 0-1.09 | 1.10-1.66 | 1.67-2.23 | 2.24 and more |
| Depression | 0-1.13 | 1.14-1.74 | 1.75-2.35 | 2.36 and more |
| Anxiety | 0-1.13 | 1.14-1.71 | 1.72-2.29 | 2.30 and more |
| Hostility | 0-1.17 | 1.18-1.77 | 1.78-2.37 | 2.38 and more |
| Phobic anxiety | 0-0.84 | 0.85-1.33 | 1.34-1.82 | 1.83 and more |
| Paranoid ideation | 0-1.55 | 1.56-2.25 | 2.26-2.95 | 2.96 and more |
| Psychoticism | 0-0.91 | 0.92-1.38 | 1.39-1.85 | 1.86 and more |
| Global severity index (GSI) | 0-1.06 | 1.07-1.57 | 1.58-2.08 | 2.09 and more |

**Appendix Table 2.** Norms and levels of health of female subjects in the checklist (SCL-90-R) [13]

| **The situation of people with mental disorders →**<br>**Checklist dimensions↓** | **Normal** | **Mild disorder** | **Moderate disorder** | **Severe disorder** |
|---|---|---|---|---|
| Somatization | 0-1.35 | 1.36-2.03 | 2.04-2.71 | 2.72 and more |
| Obsessive-compulsive | 0-1.16 | 1.17-1.77 | 1.78-2.32 | 2.33 and more |
| Interpersonal sensitivity | 0-1.02 | 1.03-1.55 | 1.56-2.08 | 2.09 and more |
| Depression | 0-1.17 | 1.18-1.77 | 1.78-2.38 | 2.39 and more |
| Anxiety | 0-1.15 | 1.16-1.75 | 1.76-2.35 | 2.36 and more |
| Hostility | 0-1.05 | 1.06-1.58 | 1.59-2.11 | 2.12 and more |
| Phobic anxiety | 0-0.87 | 0.88-1.40 | 1.41-1.93 | 1.94 and more |
| Paranoid ideation | 0-1.51 | 1.52-2.22 | 2.23-2.93 | 2.94 and more |
| Psychoticism | 0-0.83 | 0.84-1.31 | 1.32-1.79 | 1.80 and more |
| Global severity index (GSI) | 0-1.05 | 1.06-1.56 | 1.57-2.07 | 2.08 and more |