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# Home quarantine is a useful strategy to prevent the coronavirus outbreak: Identifying the reasons for non-compliance in some Iranians

Elham Nazari [a], Mohammad Hasan Shahriari [b], Malihe Dadgarmoghaddam [c], Azadeh Saki [d], Mahsa Nahidi [e], Amin Mehrabian [f], Hamed Tabesh [a,*]

[a] *Department of Medical Informatics, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran*
[b] *Department of Health Information Technology and Management, School of Allied Medical Sciences, Shahid Beheshti University of Medical Sciences, Tehran, Iran*
[c] *Department of Community Medicine, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran*
[d] *Department of Epidemiology and Biostatistics, School of Health, Mashhad University of Medical Sciences, Mashhad, Iran*
[e] *Department of Psychiatry, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran*
[f] *Department of Pharmaceutical Nanotechnology, School of Pharmacy, Mashhad University of Medical Sciences, Mashhad, Iran*

## ARTICLE INFO

## ABSTRACT

*Introduction:* The coronavirus outbreak has become a worrying issue and some people refuse to stay at home. Therefore, this study aims to identify the reasons behind some Iranian people's refusal to stay at home to prevent further virus transmission.
*Method:* This cross-sectional study was conducted on postgraduate students in Iran. A questionnaire was designed based on 50 experts' opinions by using the Delphi method and 203 students completed the designed questionnaire in telegram groups.
*Results:* 35% of participants were upper 30 years of age, 70.4% were female, 74.4% had no coronavirus infection among their relatives, and 54.7% of them were Ph.D. candidates. The relations between "unclear accountability of events by some officials" and age as well as "failure to provide dissenting viewpoints and critical comments" and age were statistically significant ($p = 0.027$, $p = 0.014$). Moreover the relation between coronavirus infected relative and "persistent beliefs" was statistically significant ($p = 0.014$). The Chi-square test showed that gender, degree, resident and education province did not affect questions answering. The greatest agreement with questions is as following: lack of real situation understanding; 89.7%, people's livelihoods, and lack of government planning for low-income groups support; 86.7%, lack of people's knowledge concerning the coronavirus; 80.8%, lack of communicative educations for crisis situations; 79.8%, false assurance as well as minimizes the risks; 78.3%.
*Conclusion:* Identifying the non-compliance factors with health recommendations can guide health care providers and managers to implementation of beneficial intervention.

## 1. Introduction

Coronavirus (COVID-19) has led to millions of deaths worldwide [1]. The COVID-19 initial cases occurred in Wuhan, in December 2019 [2]. Coronavirus disease 2019 (COVID-19) outbreak has received much research attention due to its global challenge. Since the beginning of the corona outbreak until today, much research has been done around the world in various fields including prevention, diagnosis, treatment, management, and disease control area. At first, researches were only focused on cause, symptoms, and signs, and later the investigations concerning the prevention and disease control have been increased

[3–6]. Some research has been done to inform the disease spread at different times and places. In studies, for disease spread visualization, graphs, media, maps and area cartograms have been used [7–10]. Researchers have evaluated the need for social distancing and personal hygiene to control the virus [11–15]. Moreover, many investigations have been conducted about risk and resources management, strategies for maintaining health care workers' mental health, poverty during the COVID-19 and economic policies, different technologies application, and remote Corona management [16–23]. [24–28]. Studies have been designed on the use of [29–37]. As a result of many artificial intelligence techniques, Coronavirus detection is more probable by X-ray and CT

images [38–41]. At this time no treatment approach is found for Coronavirus [42]. As of today, multiple vaccine candidates for COVID-19 are in clinical phases [43–49]. 504,281 Coronavirus confirmed cases were reported in Iran on October 12, 2020 [1]. The spreading virus in Iran causes many challenges such as a limitation in medical resources. Based on the person-to-person transmission, community prevention is necessary [50,51]. Strategies that have been conducted are washing hands, physical distancing, and traveling limitations between countries. Other preventing approaches that have been implemented in Iran are social and religious events cancellation, and universities and school closure [52–54]. Persian New Year's Eve celebrations were canceled to prevent further spread of the virus. Nevertheless, the number of infections is increasing day by day in Iran and this has caused concern in Iran Government officials and Iran's Ministry of Health are constantly urging people to stay at home and limit their communications as much as possible. To encourage people to stay at home, they have broadcast many informative and enjoyable television programs and keep reminding people of health advice daily. Despite the importance of preventing virus transmission, not all people stay at home to interrupt the transmission cycle. Therefore, in this study we will investigate the causality of Iranian people who do not stay at home.

## 2. Method

The present research is a two-phased cross-sectional study. In the first phase, a self-administered semi-structured questionnaire was prepared. The questions were collected from interviews on 50 expert viewpoints. After categorizing comments, two Delphi rounds were performed by 10 experts to ensure the content and face validity of the questionnaire. After the CVR (content validity ratio) and CVI (content validity index) calculations, 95.33% and 94.67% values were gained, and consequently the final version of the questionnaire was confirmed. The questionnaire contains 14 close-ended questions with a 5 Likert scale. An online form of the questionnaire was used. In the second phase, data were gathered from university telegram groups in Iran. The participants were 203 students from different universities. Participant opinion was evaluated by two descriptive and analytical approaches in SPSS. The relationship between questions and individual characteristics such as gender, age, family member, and the degree was examined.

## 3. Results

The results of descriptive and analytical statistics can be seen in Table 1, Table 2, and Table 3.

According to Table 1, 35% of participants were above 30 years of age. The participants' mean age was 28 years and 70.4% of participants were female, 74.4% had no infected relative, 54.7% were Ph.D. candidates, 37.4% resided in Khorasan Razavi, and also 51.7% of the students' education province was Khorasan Razavi. The questions were rated on a three-point Likert scale of agree, neutral, and disagree. The frequency and percentage of agreement with each question are shown in Table 2.

As is shown in Table 2, the greatest agreement with questions are included as follows: lack of understanding of the real situation; 89.7%, people's livelihoods, and lack of government planning to support low-income groups; 86.7%, lack of people's knowledge about the Coronavirus; 80.8%, lack of community education for this crisis; 79.8%, false assurance as well as minimize the risks; 78.3%.

The exploratory factor analysis (EFA) was used to determine the dimensions of questions. Based on varimax rotation, about 60% of the total variance was explained by four components. In this analysis, the KMO coefficient was obtained 0.860 and illustrate that the sample size was sufficient, after eliminating question 14, and the social factor includes questions 12, 11, 13, 10, respectively. Management factor includes question numbers 7, 8, 9, 3 in order of importance, and the management in the big area includes question numbers 1, 2, 4 in order of importance, and also knowledge factor includes question numbers 5, 6 in order of importance.

The relationship of Table 1 variables such as age and gender were analyzed with each question. The significant results can be seen in Table 3.

As is shown in Table 3, the relationship between "unclear statement of events by some officials" and age as well as "failure to provide

**Table 1**
Descriptive characteristics.

| Variables | Sub-variables | Frequency | percentage |
|---|---|---|---|
| Age | <20 | 62 | 30.5 |
| | 20–30 | 70 | 34.5 |
| | >30 | 71 | 35.0 |
| | Total | 203 | 100 |
| | Missing | 0 | 0 |
| Gender | male | 60 | 29.6 |
| | female | 143 | 70.4 |
| | Total | 203 | 100 |
| | Missing | 0 | 0 |
| Have you had a coronavirus case among your relatives and friends? | yes | 51 | 25.1 |
| | no | 151 | 74.4 |
| | Total | 202 | 99.5 |
| | Missing | 1 | .5 |
| Degree | M.S. | 75 | 36.9 |
| | Professional Ph. D. | 111 | 54.7 |
| | Total | 186 | 91.6 |
| | Missing | 17 | 8.4 |
| Residence_province | Kermanshah | 6 | 3.0 |
| | Razavi Khorasan | 81 | 39.9 |
| | South Khorasan | 6 | 3.0 |
| | Tehran | 25 | 12.3 |
| | Alborz | 4 | 2.0 |
| | Yazd | 1 | .5 |
| | Isfahan | 9 | 4.4 |
| | Kurdistan | 6 | 3.0 |
| | Fars | 4 | 2.0 |
| | Mazandaran | 19 | 9.4 |
| | Chaharmahal and Bakhtiari | 2 | 1.0 |
| | Golestan | 4 | 2.0 |
| | Kerman | 6 | 3.0 |
| | Khuzestan | 7 | 3.4 |
| | Sistan and Baluchestan | 3 | 1.5 |
| | North Khorasan | 5 | 2.5 |
| | Semnan | 3 | 1.5 |
| | West Azerbaijan | 2 | 1.0 |
| | Qom | 1 | .5 |
| | Lorestan | 4 | 2.0 |
| | Bushehr | 1 | .5 |
| | Gilan | 2 | 1.0 |
| | Total | 201 | 99.0 |
| | Missing | 2 | 1.0 |
| Education_province | Kermanshah | 2 | 1.0 |
| | Razavi Khorasan | 105 | 51.7 |
| | South Khorasan | 1 | .5 |
| | Tehran | 39 | 19.2 |
| | Yazd | 2 | 1.0 |
| | Isfahan | 6 | 3.0 |
| | Kurdistan | 6 | 3.0 |
| | Fars | 1 | .5 |
| | Mazandaran | 17 | 8.4 |
| | Golestan | 1 | .5 |
| | Hamedan | 2 | 1.0 |
| | Kerman | 2 | 1.0 |
| | Khuzestan | 6 | 3.0 |
| | Sistan and Baluchestan | 1 | .5 |
| | Semnan | 1 | .5 |
| | East Azerbaijan | 4 | 2.0 |
| | Hormozgan | 1 | .5 |
| | Gilan | 1 | .5 |
| | Total | 198 | 97.5 |
| | Missing | 5 | 2.5 |

**Table 2**

Participant's agreement with each question.

| Question | Why people do not take coronavirus infection seriously and reuse to stay at home? | Frequency agreement | Percentage agreement |
|---|---|---|---|
| 1 | Due to the weak management policies, people do not trust their recommendations, such as staying home. | 105 | 51.7 |
| 2 | People's livelihood and lack of government planning to support low-income groups have made people refuse to stay at home. | 176 | 86.7 |
| 3 | Unclear statement of events by some officials has made people refuse to stay at home. | 139 | 68.5 |
| 4 | Persistent beliefs have made people refuse to stay at home. | 40 | 19.7 |
| 5 | Lack of proper understandings of the current situation and its following consequences have made people refuse to stay at home | 182 | 89.7 |
| 6 | Lack of sufficient knowledge about the coronavirus has made people refuse to stay at home. | 164 | 80.8 |
| 7 | False assurance regarding suitable risk management strategies have made people refuse to stay at home. | 159 | 78.3 |
| 8 | The Lack of communication educations for this crisis has made people refuse to stay at home. | 162 | 79.8 |
| 9 | Opposing comments of managers and professionals on scientific findings and evidence have made people refuse to stay at home. | 130 | 64.0 |
| 10 | Social capitalism (as a good platform for human and material exploitation and a way of being successful) have made people refuse to stay at home | 125 | 61.6 |
| 11 | Permanent daily challenges and issues in society and insensitivities have caused people refuse to stay at home. | 127 | 62.6 |
| 12 | The helplessness feeling caused by community incapabilities in different circumstances and repeated failures over time have made people refuse to stay at home. | 108 | 53.2 |
| 13 | Failure to provide dissenting viewpoints and critical comments has made people not stay home. | 76 | 37.4 |
| 14 | The lack of coordination between management levels and the undesirable cross-sectional partnerships have made people refuse to stay at home. | 134 | 66.0 |

**Table 3**

Relationship between variables.

| Variables | test | Value | DF | Sig |
|---|---|---|---|---|
| Have you had a coronavirus case among your relatives and friends?*Q4 | Chi-Square Tests | 8.578 | 2 | .014 |
| Age*Q3 | Chi-Square Tests | 10.977 | 4 | .027 |
| Age*Q13 | Chi-Square Tests | 12.544 | 2 | .014 |

dissenting viewpoints and critical comments" and age was statistically significant (p = 0.027. p = 0.014). The relation between having infected friend and relative and "Persistence in rituals and beliefs" was statistically significant (p = 0.014). The Chi-square test showed that gender, degree, resident province, education province, did not affect answering

14 questions.

## 4. Discussion

One of the best ways for COVID-19 prevention is to stay at home, but some people do not pay attention to this advice. Therefore, the present study aims to investigate the reasons for these refusals in Iran.

The findings showed that the majority of the students were women. The age of most participants was above 30 years. The relationship between "unclear statement of events by some officials" and age and also "failure to provide dissenting and criticism comments" and age were statistically significant. The relationship between having Coronavirus cases among relatives and "persistent beliefs" were statistically significant. The Chi-square test showed that gender, degree, resident province, education province, did not affect answering questions. The importance of the questions from the students point of view is as follows: lack of real situation understandings, people's livelihoods, and lack of government planning to support low-income groups, lack of people's knowledge about the Coronavirus, lack of communicative education for this crisis, false assurance as well as risk management.

The virus has stagnated all industries and caused many challenges for various occupations. In Iran, many businesses are closed to prevent further outbreaks. Therefore, workers, vendors, marketers, and non-governmental organizations, in general, are facing financial difficulties due to insufficient financial support. Lack of work in these job areas will lead to substantial difficulty. In these circumstances, it is necessary to consider measurements such as providing financial assistance for specific occupations and for low-income people. With the people's support, we hope that recommendations such as staying at home to prevent further virus spread will be considered.

The population's lack of knowledge might be a main reason why some people do not take COVID-19 seriously. During the COVID-19 outbreak in Iran, many programs were broadcasted in the media for public information. It seems that reports on patient condition and hospitals can be helpful. Continuing educational programs can also play an important role. Encouraging people to take a vacation after the corona outbreak could be a good solution.

## 5. Conclusion

By identifying the reasons of not paying attention to health advice, it can be very helpful to consider appropriate interventions for transmission reduction. Our findings can be helpful for Iran and other countries. It is recommended that similar studies be performed to control and prevent corona due to the virus prevalence in most countries.

### Ethical approval

The present study was approved by the Medical Ethics Committee of the Research Affairs at Mashhad University of Medical Science, Mashhad, Iran (Ethic code 1399.018).

### Declarations competing of interest

None.

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