Original Article

A qualitative study of COVID-19 home quarantine in public

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Abstract

Context: The infectious disease caused by the novel coronavirus has spread all over the world for the first time. A key factor in containing infectious diseases is compliance with health recommendations such as social distancing and home quarantine.

Aims: This study aimed to analyze the public perception of noncompliance with home quarantine during the coronavirus disease 2019 (COVID-19) pandemic.

Settings and Design: This qualitative study was conducted in Iran (Ardabil and Kermanshah) in 2020. The research data were collected from 15 participants living in urban communities by conducting in-depth, semi-structured, and face-to-face individual interviews.

Materials and Methods: The purposive sampling technique was used with maximum variation in this study.

Statistical Analysis Used: Data were analysed using content analysis and MAXQD-10 software was used to manage data.

Results: A total of 15 participants comprised the final sample after data saturation. They were aged 18–51 years old. Regarding the research purposes, data analyses resulted in three categories and six subcategories: uncertainty (uncertainty about the News and uncertainty about job security), the need for serious governmental interventions (supportive interventions and legal interventions), and the fear of quarantine consequences (financial livelihood consequences and physical-psychological consequences).

Conclusion: Compliance with home quarantine requires the support of people and officials to contain infectious diseases. Home quarantine is not complied by the public for various reasons such as distrust, the need for supportive governmental interventions, and the fear of negative consequences. Apparently, governmental support plays a central role in solving livelihood problems.

Keywords: Coronavirus disease 2019, Qualitative research, Quarantine

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INTRODUCTION

Nearly all countries are faced with the global threat of emerging infectious diseases such as severe acute respiratory syndrome (SARS), influenza epidemics, and other infectious diseases.[1] The coronavirus disease 2019 (COVID-19) is an emerging infectious disease, which has recently caused great concern worldwide. In fact, the COVID-19 poses a serious threat to human life and health due to its rapid spread, severe infection, mortality in severe cases of infection, and lack of any specific medications.[2] These concerns are often exacerbated by the lack of effective treatments. Therefore, public health policy-makers and planners must first consider the importance of controlling such diseases before any widespread outbreaks.[3]

Measures available to public health officials around the world to control such a pandemic include encouraging citizens to wear facemasks in public places, canceling public events, closing schools, separating and isolating suspicious cases, administering online public education, formulating home quarantine protocols, social distancing, and travel restrictions, and supervising and emphasizing compliance with health and screening recommendations.[4-6] Public health officials around the world are now trying to contain this pandemic.

Quarantine means the isolation of people who have presumably been exposed to the infectious disease but do not feel sick. Usually including restrictions on designated homes or institutions, this may apply to an individual, a group, or a community.[7]

Extensive quarantine measures can be accompanied by major challenges such as health status control, compliance with the quarantine protocols, and satisfaction of basic needs, economic consequences, and social discrimination.[8] Kept in quarantine, people might be reluctant to follow governmental guidelines, for these guidelines disrupt everyday life, separate them from the outside world, and cause livelihood problems.[9,10] Addressing these challenges before enforcing quarantine protocols can reduce public concern and improve compliance with quarantine.[10,11] The domestic and worldwide spread of the COVID-19 can be considered history repeating itself because an infectious pandemic is not a new phenomenon in human history. After the expansion of economic relationships between different nations and developments in trade exchange by ships, infectious diseases such as plague and cholera grew rapidly and caused high rates of mortality.[12-14] The history of various diseases in Iran shows that other diseases such as tuberculosis, typhoid, jaundice, and leprosy have been able to significantly transform Iran.[15]

Field research findings show that some people have not taken home quarantine seriously, despite many health recommendations. Therefore, it is vital to know the concerns, worries, and causes of noncompliance with home quarantine. For this purpose, this study aimed to analyze the public perception of noncompliance with home quarantine to contain the COVID-19 pandemic.

MATERIALS AND METHODS

This study was conducted through a qualitative content analysis method The participants were selected through purposive sampling in terms of various characteristics, including age, gender, education, and occupation, to reach maximum variation and rich data. The inclusion criteria were as follows: (a) Citizens at least 18 years of age, (b) having noncompliance with home quarantine, and (c) being willing to participate in the study.

The second and third authors selected the participants based on a query about noncompliance home quarantine. They are Ph. D. students in nursing who have training and experience in conducting qualitative research.

They have conducted this research under the supervision of an associate professor who is a nursing Ph. D. and has experience conducting and teaching various qualitative research.

The participants selected from different urban areas of Ardabil and Kermanshah. Due to the quarantine conditions and the fact that the researchers lived in these two cities and access to the participants in these two cities was possible.

The data were collected by using semi-structured interviews from February to April 2020 by the second and third authors. The time and place of every interview were arranged with the participants in a quiet place without the presence of others (home of participants or researchers). The duration of each interview varied from 30 to 60 min.

In each interview, participants were first asked about their details to establish communication, and then more specific questions related to the purpose of the research such as "what was your reaction to the outbreak of COVID-19?," How do your compliance quarantine? The interviews then continued to clear up the ambiguities by probing questions such as "Can you provide an example of this?" or "Can you explain more about this?" Each interview ended with open-ended

questions such as "Is there anything else you would like to say?" After the 15 participants were interviewed, the data saturation level was reached; thus, the interviews were stopped.

This study was carried out in a research project. The proposal of this study was approved by the Ethics Committee of the Nursing and Midwifery School of Tehran University of Medical Sciences (IR.TUMS.VCR. REC.1399.040).

For participation in this study, the informed written consent was obtained from participants, who were first provided sufficient information regarding the research purpose, the interview method, the confidentiality of their information, and the freedom to withdraw from the study at any time. The participants were also asked permission to record the interviews.

The five-step conventional content analysis method – proposed by Graneheim *et al*.[16,17] was employed for data analysis. To this end, in this research, in the first step, each interview was transcribed verbatim. In the second step, the transcripts were reviewed several times to obtain a general sense. After that, each interview transcript was considered a unit of analysis in the third step. The units were then identified and coded. In the fourth step, the resultant codes were classified as subcategories in terms of their conceptual similarities and differences. In the fifth step, this process continued until the main category was extracted. MAXQD-10 software was used to manage large amounts of data.

Trustworthiness was applied with Guba and Lincoln and Elo *et al*. criteria of credibility, dependability, confirmability, and transferability.[18,19] Credibility was established using member-and peer-checking, prolonged engagement, and maximum variance of participants' selection. Dependability was established by using appropriate data collection methods, sampling strategy, and selecting suitable meaning units. Transferability was achieved through the provision of a rich description of data collection, analysis processes, and findings to allow the readers to match the findings with their contexts.

RESULTS

The research findings were extracted from the interviews conducted on 15 participants aged 18–51 years old. Furthermore, 8 (53. 3%) of them were women, and 12 (80%) were married. Table 1 demonstrates their other demographics.

Table 1: The demographic characteristics of people who participated in the study

Demographic characteristics	Frequency (%)
Gender	
Male	7 (46.70)
Female	8 (53.30)
Marital status	
Single	3 (20.00)
Married	12 (80.00)
Occupation	
Office worker	6 (40.00)
Self-employed	3 (20.00)
Homemaker	4 (26.70)
Student	1 (6.70)
School student	1 (6.70)
Education level	
Primary	3 (20.00)
Diploma	4 (26.7.00)
Undergraduate	3 (20.00)
Postgraduate	5 (33.30)
Having children	
Yes	10 (66.70)
No	5 (33.30)
Age (mean±SD)	38.00±10.83

SD: Standard deviation

According to the findings, the participants had a clear perception of home quarantine and its effects on disease containment. However, for some reason, they did not comply with it properly. Data analysis resulted in the identification of three categories called uncertainty, the need for serious governmental interventions, and the fear of quarantine consequences. There were also six subcategories [Table 2].

Uncertainty
According to the recorded viewpoints, uncertainty was among the reasons for noncompliance with home quarantine during the COVID-19 pandemic in Iran. Uncertainty refers to a person's mental state (consciousness) caused by ambiguity or an ambiguous stimulus.

Uncertainty about the news
According to the participants, uncertainty about the news broadcast by domestic and foreign media and the existence of contradictory messages were among the factors confusing people to perceive the situation correctly. Some people were confused by the news exaggerating the situation, whereas others were confused by listening to unofficial media. Some of the participants did not take the disease seriously due to the initial publicity on both radio and television and still considered the situation normal.

"*Honestly, we are stuck between domestic and foreign TV News and also these virtual websites. This scares us to know whether the domestic mortality statistics are correct or the foreign ones*" (P. 12).

The existence of numerous mass media sources other than the official Iranian sources was a reason for the public

Table 2: Main and sub-categories extracted from the data

Main category	Subcategory	Some of the related codes
Uncertainty	Uncertainty about the News	Contradictory news, contradictory messages, multiple mass media
	Uncertainty about job security	Job insecurity, losing the job
Need for Serious Governmental Interventions	Supportive interventions	Serious government intervention in providing necessities of life, government intervention in raising public awareness, implementing motivational and entertaining programs
	Legal interventions	government intervention in coercion and strict implementation of full house quarantine
Fear of the quarantine consequences	Financial-livelihood consequences	Fear of losing job and income, concern about meeting livelihood needs and daily essentials
	Physical-psychological consequences	Boredom, decreased social activities, abandonment of customs, and reduced family relations

uncertainty in this study. According to the participants, listening to the News broadcast by the official media alleviated uncertainty and confusion. They believed that the media should mitigate public uncertainty by infusing and raising awareness in the right way.

"*We must consider the national conditions of our country. We have to listen to the domestic News to avoid confusion*" (P. 7).

Uncertainty about job security
Another reason for noncompliance with home quarantine was uncertainty about job security in the future. The participants saw quarantine as a factor in losing their jobs. According to the interviews, the emphasis of Iran's Ministry of Health on home quarantine as well as the pressure of employers in some jobs confused people and hindered proper decision-making.

"*Our lives have come to a financial recession. My husband is unemployed now, and we don't know how long this will last and what will happen to us*" (P. 11).

Need for serious governmental interventions
In this study, a cause of noncompliance with home quarantine was identified as the public worries about providing the essentials of everyday life. Many people believed that they had to leave home to provide the necessities of everyday life and meet their daily needs.

Supportive interventions
They considered governmental livelihood support a way to ensure complete quarantine for low-income families.

"*If the government takes some measures to help low-income families, we will be relatively successful in reducing the virus transmission chain and can finally stop its transmission*" (P. 10).

Other participants pointed out the low levels of public awareness about the nature of the COVID-19 and its transmission mechanism. They stated that the government, with the cooperation of various institutions, could play a major role in raising public awareness about

the COVID-19 and the importance of maintaining home quarantine.

"*At first, I did not have much information, and I thought it was as simple as a common cold*" (P. 13).

According to the participants, designing and implementing motivational and entertaining programs on both radio and television were among the governmental support strategies that could keep people in quarantine. They believed that radio and television – known as public and governmental media – could prevent people, especially the youth, from leaving their homes by producing appealing programs. They referred to the monotony of home conditions and the resultant impatience as reasons for noncompliance with home quarantine.

Legal interventions
Some participants mentioned the coercion and strictness for the full implementation of home quarantine by the government, stating that the noncompulsory nature of quarantine would prevent it from being fully implemented and respected by the people. Due to the coincidence of the COVID-19 outbreak in Iran with the Nowruz holiday, the number of intercity trips increased. Accordingly, participants believed that compulsory quarantine and strict regulations and fines by the government could play central roles in maintaining home quarantine.

"*Unfortunately, some people are now starting to take trips. Those who do not value other people's lives should be dealt with by force and fines*" (P. 8).

Fear of quarantine consequences
According to the research findings, participants did not tolerate quarantine for a long time and considered it a factor that had negative impacts on families.

Financial livelihood consequences
Some participants considered home quarantine a factor in losing their incomes. They were self-employed or paid laborers in companies where incomes had been cut off after their absence from work.

"*My husband is self-employed and has seasonal work. If this situation continues, our living conditions will be very difficult financially, and we may have to depend on others*" (P. 11).

Physical-psychological consequences
According to the participants, although home quarantine was a correct way to contain the COVID-19, it was difficult to tolerate. They referred to boredom, lack of social activities (e.g., rituals and ceremonies) during Nowruz visits, inability to exercise, and the reduction of family ties with relatives and social life as reasons for noncompliance with home quarantine. Considering long-term home quarantine unbearable, some young participants believed that exercise and social activities were the integral aspects of their lives.

"*We are tired. we cannot visit relatives and friends. It is also difficult to take a trip. I feel we are somehow in a state of suffocation. Everyone is tired and depressed*" (P. 14).

The home quarantine can cause psychological problems such as depression, anxiety, and stress in children's education, virtual learning problems, and verbal conflicts between family members. The participants mentioned a decline in the resilience of family members as a result of fear, apprehension, and obsession with the negative consequences of quarantine. They believed that going out of a home could mitigate these conditions.

Seeing long-term homestays as a threat to their health, some participants stated that living in an apartment and not being physically active were the causes of their obesity. Therefore, they should be able to go out for nearly an hour a day to prevent these problems.

"*I need to get out of the home because I live in an apartment where I have no enough space to move. Due to my history of sports activities, I sometimes feel that I must have physical activities outdoors for an hour*" (P. 2).

DISCUSSION

According to the research findings, people had a clear perception of quarantine and considered it one of the best ways to contain the COVID-19. However, they found it hard to comply with home quarantine due to uncertainty, the need for governmental support, and the fear of negative consequences. Results of a study aimed at explaining the quarantine experience during the SARS epidemic showed that, although all participants agreed with the quarantine requirement, they were complying with the quarantine protocol precautions at varying degrees.[6]

In addition to the findings of this study, other works of research highlighted the importance of ensuring an occupational perspective during quarantine. In fact, the most effective and important reasons for noncompliance with quarantine were introduced as financial problems due to factors such as the risk of losing a job or losing income and the lack of access to sick leave or occupational leave in several studies.[4,6,9,20-25] In the findings of study 40%–66% of people expressed concern about not receiving salaries or losing their jobs.[4]

Consistent with the results of this study about the uncertainty of News in a survey conducted in the US, only 40% of participants would trust health officials if infectious epidemics occurred.[4] Other studies have shown that although social media provide access to information, they confuse and stress out users, especially if the information is different and contradictory.[26,27] Low levels of trust in the government and uncertainty were the main factors affecting noncompliance with quarantine.[22,27] Distrust in information resources can have a negative impact on the audience's acceptance and response to public health information.[21]

Participants believed that government assistance could be effective in improving quarantine levels. International experiences have shown that economic incentives such as job security, compensation for economic loss, and income substitution should be employed to encourage voluntary quarantine, which can slow down or stop the spread of infection.[6,9-11,21,28] Responding to health-care needs and compensating for financial loss during the quarantine time to mitigate economic problems are among the incentives for individuals to voluntarily comply with quarantine.[4,11]

The participants believed that the government would be able to raise public awareness with the help of various institutions and thus increase public compliance with home quarantine. A major obstacle to compliance with quarantine is the negative attitude towards quarantine due to such factors as low levels of awareness, lack of proper perception of quarantine, and lack of proper perception of the disease risks.[24,27,29] In this regard, it is essential to provide correct information and strengthen the educational efforts about quarantine, especially those made by the nurses who are at the forefront of the battle against infectious epidemics.[11,30-32] Another study found a positive relationship between risk perception, quarantine perception, and compliance with quarantine protocols. In other words, the low levels of risk perception and quarantine perception were related to noncompliance with quarantine protocols.[6]

In quarantine, some employees were still forced to attend work. The participants also referred to this issue as a factor affecting home quarantine. Therefore, it is possible to discuss appropriate governmental measures such as changing working shifts, reducing the number of employees at work, and telecommuting administrative work. However, telecommuting requires the necessary infrastructure. Lack of access to work leave had a negative significant impact on families during the outbreak of H1N1 influenza. The families who were granted paid leave were more likely to comply with the quarantine than the families who were not.[6]

Some participants were in favor of compulsory quarantine protocols administered by the government. In this regard, a study indicated that voluntary quarantine was preferred to compulsory quarantine; however, law enforcement might be necessary if quarantine violations occur frequently.[28] In a US-based survey, 42% of people agreed with compulsory quarantine protocols.[4]

In line with financial and livelihood consequences mentioned in this study, another work of research reported that one of the two main problems with quarantine experience was the economic condition caused by failure to pay salaries due to compulsory quarantine protocols.[20] The negatively physical-psychological consequences of quarantine for individuals were also identified as effective factors in noncompliance with home quarantine. Stress and emotional problems caused by social isolation as well as labeling were also introduced as the causes of quarantine failure during the outbreak of SARS.[9,20] In another study, the inability to communicate with family members during the quarantine period was identified as a concern.[4]

This study also had some limitations, For instance, the results of the present study, like any other qualitative study, may not be generalized to other communities or contexts. The selection of samples from only two cities was another limitation due to the special conditions of COVID-19 and the restrictions on presence in other cities.

CONCLUSION

Due to the coincidence of the COVID-19 outbreak with the beginning of the New Year in Iran, noncompliance with home quarantine was associated with various factors. According to the research results, people perceived the importance of home quarantine in containing the COVID-19. However, they were unable to fully comply with quarantine protocols due to the fear of losing their jobs, confusion caused by the News from various media,

financial livelihood problems, and physical-psychological consequences. Compliance with home quarantine requires the support of people and authorities to contain infectious diseases.

Conflicts of interest
There are no conflicts of interest.

Authors' contribution
Contributor 1: Contributions to analysis and interpretation of data, review and editing final draft, final approval of the version to publishing, acquisition of funding, and general supervision of the research group.

Contributor 2: Contributions to conception and design, acquisition of data, analysis, and interpretation of data, drafting the article, and review and editing the original draft.

Contributor 3: Contributions to conception and design, acquisition of data, analysis, and interpretation of data, drafting the article, and review and editing the original draft.

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