ORIGINAL ARTICLE

Exploration of Factors of Failure to Comply With Home Quarantine During the Outbreak of the COVID-19 Disease in Iran: A Qualitative Study

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ABSTRACT

Introduction: Preventive self-care behaviors such as home quarantine are very important in preventing COVID-19. The aim of this study was to explore the factors of non-compliance with home quarantine during the outbreak of COVID-19. **Methods:** This study was conducted with a qualitative content analysis approach in 2020 in Iran. In order to collect information, 24 samples were selected by purposive sampling method and semi-structured interviews were conducted with them. Interviews were recorded, transcribed and the collected data were analyzed using the contractual content analysis approach using Elo and Kingas method. **Results:** Analyzing the data revealed in six main themes and fourteen main categories, including: necessities for everyday activities and living (with subthemes providing the necessities of life, forced by work/job insecurity, need for fun/entertainment, sports), mental instability in adults/children (with subthemes of mental states, restlessness of children), spiritual and religious beliefs (with subthemes of belief in fate and immunity/disease immunity, right to know death), managerial problems/confusion (with subthemes of government mismanagement, expectations from the government, economic turmoil), marital incompatibility (with subthemes domestic violence), adherence to socio-cultural patterns (with the subthemes of sociocultural factors). **Conclusion:** According to the results, it should be noted that several factors are contributing to non-compliance with home quarantine that it is necessary for the relevant authorities to take measures to remove these obstacles and provide the necessary facilities.
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INTRODUCTION

Infectious diseases have long been considered as one of the health problems of human societies and many efforts have been made to treat and control them(1). However, emerging viral-infectious diseases are still a major challenge in the 21st century(2). According to the World Health Organization, Novel Coronavirus Disease (COVID-19) started on December 30, 2019 in Wuhan, China, and quickly infected many people in the country(3). On January 30,2020, the organization identified the COVID-19 as a global concern, the control of which requires a coordinated international response. This unknown and new virus was able to threaten the current advanced world with all superhuman technologies. Nearly two months after the Novel Coronavirus outbreak, China reported 75,465 cases (4). In Iran, about 270,000 people have been diagnosed with coronary heart disease(1). The incubation period of this unknown virus is approximately two weeks. Because the Novel Coronavirus is transmitted through the respiratory tract, the virus has infected almost all countries in less than a month(5). In order to prevent

the spread of this virus, people with the disease with clinical signs of cough, shortness of breath, fever and chills(6). However, asymptomatic patients who were in the incubation period were the most important carriers of the disease(2). Due to the fact that in the infection transmission cycle, there are three components include (i) exist of a microorganism, (ii) host, and (iii) the route of transmission. In order to prevent the transmission of infection, it is necessary to remove one of these three components(7). So, one of the ways to prevent the disease and control the infection is to follow the principles of hygiene by the general public and the way to deal with it, such as isolating patients suspected of having COVID-19 disease, disinfecting busy places, and planning and appropriate control and prevention measures against the formation of human gatherings and quarantine(8–10). Quarantine means separating and restricting the movement of people who are potentially exposed to the contagious disease in order to reduce the spread of the disease and reduce the risk of infecting others(11–13). The duration of quarantine is equal to the maximum incubation period of the disease and home quarantine is usually preferred. Social distancing is a form of quarantine that is done to reduce interactions between people in a large community. Examples of social distancing include the closure of schools, offices and shopping malls, as well as the cancellation of rallies. In cases where voluntary home quarantine and social distancing are not effective, the whole community quarantine option is used. In this case, restrictions apply to all members of society, except in cases where they are excluded to meet vital and essential needs(14). According to international researches, countries that have used prevention and quarantine strategies or social distancing to prevent the further spread of COVID-19 disease have achieved more success in controlling this virus, for example, China during establishment of provincial and Wuhan quarantines during strict home quarantine has so far been able to control and reduce the incidence of COVID-19 disease(15,16). During the quarantine process, depending on the environmental conditions as well as the type of infectious disease spread, the mental health of individuals may be harmed and some psychological disorders may occur in quarantine(17).

Most of the researches on the psychological and physical effects of hospital quarantine on the medical staff, especially nurses. Due to the nature of their work, nurses are at the forefront of dealing with various crises. However, staying in quarantine and keeping a large population at home would not be without psychological, social and economic effects(18). In general, all studies that have examined the psychological disorders of quarantined individuals show many signs of psychological problems such as emotional distress, risk of depression, stress, mood swings, irritability, insomnia, decreased attention, post-traumatic stress disorder(PTSD) and anger(19,20). In fact, in any epidemic, it is common for people to have stress and anxiety which in turn increases the stress and psychological damage and it forces to adhere to quarantine(21,22). Therefore, considering the epidemic of COVID-19 virus in Iranian society and its serious threat to all people, and on the other hand, the importance of preventive self-care behaviors and the importance of home quarantine in preventing the virus and the lack of studies in this field, the aim of this study is exploring factors of non-compliance with home-quarantine in Iranian People.

MATERIALS AND METHODS

Study design

This study was conducted as a qualitative content analysis in 2020, while Novel Coronavirus pandemic disease outbreak in the world. Qualitative study has provided a systematic and subjective approach for live experiences of people and in fact, gives meaning and concept to these experiences and its purpose is to gain a deep understanding of the phenomenon under study (23). Content analysis is a suitable method to obtain valid and reliable results from textual data in order to create a knowledge or insight and present facts and practical guidance for performance(24).

Sample/participant

The Iranian authorities has enforced a mandatory quarantine to its citizen in managing the outbreak between March and April 2020. The public needs to stay at home and be self-quarantined regardless of their COVID-19 status. The participants were recruited among those who have challenged to obey with the quarantine instruction. In the current study, purposive sampling has been employed. To consider maximum variety in samples, it was attempted to have samples from different cities (Qazvin, Ahvaz, Babol, Khoramabad) and age groups. Researchers getting acquaintance to participant in the downtown of the cities and inviting them to interview. Interview take placed along the street of the participant's house/neighborhood with confidentiality or researchers' institutes under infection safety consideration. Sampling continued until data saturation to 24 people. Data saturation is reached when there is enough information to replicate the study. For data collection, open, semi-structured, in-depth and physical face to face interviews were used. The one-to-one interview is a commonly used data collection method in health and social research, especially when involving vulnerable and sensitive population to ensure high level of confidentiality and anonymity. This method is usually conducted face to face and offers the opportunity to interpret non-verbal cues through observation of body language, facial expression and eye contact and thus may be seen to enhance the interviewers understanding of what is being said (25).

First of all, the researcher explained the purpose of the study to the participants and interviews were conducted

after obtaining their informed consent. At the beginning of the interview, questions were proposed to create a friendly and safe atmosphere and then, more technical questions were asked consistent with the research purpose. Interviews were recorded by voice recorder (Sony model) and saved in a password-protected computer. Researchers conducted all the interviews in Persian and translated them into English after transcription. Questions were asked as follows:

"Is it possible to explain the reasons that made you leave the house?" "What factors made you violate the quarantine?" In each interview, such follow-up questions were asked: "would you please provide more explanations about these factors?" "Can you give an example?" "Do you mean that …?" In the end, the participants were asked to say the final points. To enrichment of data gathering, it was attempted to conduct interviews in several sessions and durations were different depending on the type of questions and physical and environmental conditions of the participants.

Data analysis

For data analysis, qualitative content analysis steps introduced by Elo and Kyngas were followed(26). This method includes three steps of prepare, organize, and report the findings. After interviews with the participants, the audio files were handwritten verbatim. The text resulted from the interview was read for several times. In each paragraph, meaningful units were identified and summarized with a description close to the text and each paragraph or phrase received a code. Then, a list of codes was prepared and based on continuous comparison of similarities, differences, and proportion between codes, those codes that indicated a single subject were placed in a subcategory and then, categories were classified. In the end, by comparing the categories and deep and accurate reflection, the hidden content in the data was introduced as the main category.

For validity and reliability of findings, it was attempted to collect data with persistent observation, and use a variety of sampling methods and increase the number of interviews and feedback, and more credibility was given to the data by member check (27). Also, to achieve code accuracy, interviews were submitted to two academic members to receive their opinions for peer check and audit trail.

Ethical consideration

This study was approved by the Ethics Committee of Ahvaz Jundishapur University of Medical Sciences (IR.AJUMS.REC.1399.018). All necessary permissions were obtained from the relevant authorities before beginning the study. It should be noted that informed consent has been signed from participants before data gathering.

RESULT

There were 24 participants in this study. Age range of participants were 20-62 years, 12 men and 12 women, in terms of education level 10 experts, 2 undergraduates, 5 diplomas, 3 postgraduates, 2 doctors and in terms of employment of two general practitioners, 2 military There were 6 housewives, 1 retiree, 2 employees, 4 self-employed, 1 notary public, 1 kindergarten teacher and 1 pharmacy technician. The interviews usually taken around 25 minutes to 1 hour to complete (Table I).

Table I. Demographic characteristics of the participants

Variable	Frequency
Age	20-62 years
Gender	12 men and 12 women
Education	2 Doctorates, 10 Bachelor, 2 undergraduate, 5 Diplomas, 3 Postgraduate
Occupation	2 general practitioners, 4 military personnel, 6 housewives, 1 retired, 4 staff members, 4 self-employed, 1 notary public clerk, 1 kindergarten instructor, 1 pharmacy technician

From the total of interviews, 153 initial codes were obtained, which were emerged into forty sub-categories, fourteen main categories and six main themes in the analysis process. Summary of the main themes, main categories and subcategories is presented in table II.

Table II. Main themes, main categories and subcategories

Main themes	Main categories	Subcategories
Necessities for everyday activities and living	Providing the necessities of life	Providing daily necessities
	Forced by employment/Job insecurity	Job commitments Working conditions Work conscience Getting fired Unemployment
	Need for fun/ Entertainment	Need to go out Lack of entertainment Routines
	Sport/exercise	Aerobic exercises
Mental instability in adults/ children	Mental state	Anxiety Fatigue and boredom Feeling depressed Emotional pressure Lack of motivation Laziness Feeling lonely
	Restlessness of children/adult	
Spiritual and religious beliefs	Belief in fate	Belief in fate Belief in disease simplicity Belief in one's health
	Immunity against disease	Belief in this fiction that only old and sick people get infected
	Right to know death	Indifference to death Comfort with death Accepting death (deserving)

CONTINUE

Table II. Main themes, main categories and subcategories (CONT.)

Main themes	Main categories	Subcategories
Necessities for everyday activities and living	Providing the necessities of life	Providing daily necessities
Managerial problem/confusion	Government mismanagement	Lack of proper management Failure to help people Lack of honesty Forgiveness of bank installments Create an online shopping platform
	Expectations from the government	Providing daily necessitiesProviding free facilities (water, electricity, gas)
	Economic turmoil	Increasing the treatment staff attraction rate Family financial expectations-Financial problems Economical pressure
Marital incompatibility	Domestic violence	Dissatisfaction with behavior at home Marital problems Anger and aggression
Adherence to sociocultural patterns	Sociocultural factors	Holidays gatherings Participation in the ceremonies

One of the main themes of this study was necessities for everyday activities and living. This main theme included four subthemes of daily necessities of life, forced by employment/job insecurity, the need for fun/entertainment and sports/exercise. Daily necessities of life, which almost all participants expressed this theme in some way. One of the participants said: "I do not leave the house for any other reason except for daily necessities, The necessities include bread, potatoes, chicken and meat". (Participant No.15). About Everyday life a participant said: We cooked at home, we sang, we danced, we listened to music in the afternoon, we studied in the middle, we watched a movie together, but there was no other work. If we did everything, we would get bored and we would not do the same things again (Participant No. 19).

Forced by employment / job insecurity refers to being forced to work and fear of losing a job, which includes the five subcategories of job commitment, working conditions, work conscience, getting fired and unemployment. About work condition one participant stated: I have a hardware shop and there is no other source of income other than that. I have to break the quarantine because of my job. I have a cheque. If I do not go to work, who will pass my cheques? (Participant No. 18).

About work conscience one of participant said: I am a shopkeeper and due to the fact that I have no other way to earn money and have no savings, I have to go to the store (every day of the week (Participant No. 8).
Getting fired is the fourth sub-category for which the participant states: According to the job I have, I have to go to work. It is true that the risk of getting this virus is very high and nothing is worth dying for, but I have to go to work. Fear of losing my job is the reason for my presence (Participant No. 16).

The need for fun/entertainment and exercise means having activities for fun and doing aerobic exercise. The need for ventilation is the first subtheme in which the participants say: I came to eat some air. I take care of myself. I did not touch anything (participant No. 2). Lack of entertainment was the second sub-category of this theme, which the participants express as follows: Unfortunately, there is no program at all that one wants to plan, there is no program other than watching TV and mobile games (Participant No. 21).

The next subcategory was sport/exercise, which included walking and cycling. In this case, the participants said: Now only one or two days, only twice, that is, two or three days in month, I come out for a walking (Participant No. 1).

The next main theme includes mental instability in adults/children, which includes two main categories of mood changes and restlessness of children/adult. There were seven subcategories included; anxiety, fatigue and boredom, feelings of depression, emotional pressure/stress, lack of motivation, laziness, feelings of loneliness. In this case, the participant stated: "I used to sleep late at night in movies and phones and chatting and chatting around, I would get up late in the morning, this makes me both lazier, more bored, more depressed, and more bored. This made me not do things at all, that is, it was no longer a motivation, and it was all on our phones. I read the news and became more depressed". (Participant No. 20).

Child restlessness means the child does not tolerate staying at home. In this regard, the participants said: "Because we have been traveling a lot, the children are being harassed. They are being harassed fairly. I or their father have to go out with them sometimes. My child saying that I am bored, we, as adults, get upset ourselves no matter what happens to the child, we are all in a bad mood". (Participant No. 9).
The next major theme that emerged was spiritual and religious beliefs, which itself include three main categories of belief in fate/destiny and immunity to disease and the right to know death. The belief in fate means that one he attributes his affliction or non-affliction to the will of God because of his belief in fate and destiny, and the meaning of immunity to disease is that he is safe from disease, which includes the sub-categories of belief in fate, belief in the simplicity of disease and belief in one's health.

Regarding the belief in destiny and the value of the participants, he said: "I do not worry at all, whatever

God wills, it will be the same, without God, not a single leaf falls from the tree. I have no stress or fear, and I have nothing, whatever God wants" (Participant No. 8). Regarding the belief in the health of the participant, he said: "The first and last disease that we should get is to stay and go, which depends on physical strength, and the will of God" (participant NO. 12). Other participant comfort with death said: "I can no longer stay home in hell to get a Corona; I will die sooner than this situation" (participant No. 11). One of our participants about accepting death said: "If we get infected, it's normal, what else can we do, even if it' s death, it's right" (participant No. 3).

The themes of managerial problem/confusion included three main categories of government mismanagement, expectations of the government and economic turmoil. The government's mismanagement means lack of honesty with the nation, lack of proper management and inadequacy in helping the people. Regarding the lack of honesty of the participants, they said: "If they are honest, why not quarantine Qom city [first infected city in Iran]" (participant No. 3). Under the category of lack of proper management, one participant said: "If Qom city had been quarantined in the first days, this would not have happened. That the prevalence of Tehran and other cities will increase" (Participant No.16). Other participant stated: "Quarantine cannot be done in two ways. On the one hand, the government should announce, sir, people, be in your house, do not leave your house, observe. On the other hand, the government should cooperate with the medical staff. When I want to go to work as an employee, I work with the client. The client also sees that the office is required to remember to do the overdue work, so this is not in line with the quarantine discussion" (participant No. 21).

Regarding the providing of free facilities, the participant said: "If this government really wants to help these people, it must provide water, electricity and gas for up to 3 months. every time you receive a text message that you, dear subscriber, register your meter number says about increasing the recruitment of medical staff" (participant No. 19). The next main category was economic turmoil, which includes three subcategories: family financial expectations, financial problems, and economic pressure. Regarding the financial expectations of the participating family, he said: "My wife is a shopkeeper and, in this situation, where opening shops is equal to closing, there is no choice but to employ a servant, even at the cost of getting sick and even dying" (participant No. 15), In this regard one participant stated: "With this economic situation, we are like this, we are going to die, this is another way, what can we do with this economic situation, now I am saddened by my husband's unemployment, it's not working, they are not received, and their salaries are being squandered" (Participant No. 3).

The next main theme that revealed in this study was marital incompatibility with the main category of domestic violence and with three subcategories: dissatisfaction with behaviors at home, marital problems, anger and aggression. Regarding dissatisfaction with the wife's behavior at home, the participant states: (crying) "What can I do? I can no longer stay home when my husband does not understand me, from morning to night, night to morning, you will not see anyone in the house without any happiness" (Participant No. 11).

The last theme of adherence to sociocultural patterns included the sub-theme of socio-cultural factors with two subcategories, holidays gatherings and participation in the ceremonies. In this regard, one of participants said: "More for, seeing and visiting parents and relatives very close to the level of greetings and not sitting together" (participant No. 21). About the participation in the ceremonies said: "Once on the day of his aunt who died, we went to the closing ceremony" (participant No. 6).

DISCUSSION

The findings of this qualitative study showed that several factors can be participate in non-compliance with home quarantine in Iran. Factors such as necessities for everyday activities and living, mental instability in adults/children, spiritual and religious beliefs, government problem/confusion, marital incompatibility, and adherence to socio-cultural pattern can be mentioned. Quarantine separates and restricts the movement of people who were exposed to a contagious disease to see if they become sick(28). Provide supplies and services of daily life is due to the fact that the quarantine is dependent on other cases if it is created only when they are weak. Insufficient essential materials (such as water, food, clothing...) during quarantine is one of the important cases of breaking the quarantine (29,30).

Mental instability in adults/children was another finding in this study with the subcategories of anxiety, fatigue and boredom, feeling depressed, stress, lack of motivation, laziness and feeling lonely. Coinciding with this finding, Brooks et al. in their rapid review study stated that people who were quarantined had a high prevalence of symptoms of mental distress and psychological disorders including emotional distress, depression, stress, low mood, irritability, insomnia, post-traumatic stress, fear, sadness, nervousness and even guilt were reported(31). A qualitative study on students during the Novel Coronavirus period found that shock and disbelief, extreme stress, pessimism and hatred towards careless people, anger over the lack of a quick vaccine, confusion about spreading false news, and recommended social media treatments from were experiences that participants had during quarantine(12). Some international studies showed that anxiety and fear and helplessness were the most common psychological

problems of children and adolescents, which were associated with losing their father's job, family financial problems and lack of access to basic necessities of life(32,33).

Another finding was having spiritual and religious beliefs. Patients, families, and caregivers experience distress or spiritual distress during Novel Coronavirus period, including existential distress, despair, hopelessness, isolation, a feeling of abandonment by God or others, grief, and need of compromise(34). Mishra et al. also concluded in their study in India on the spiritual validity of cancer patients that half of the participants blamed Karma, destiny and God for their suffering. Also, due to the lack of attendance at their places of worship due to the spread of Novel Coronavirus, a sense of destiny was created in these people(35). Other researches show that religion can have both positive and negative aspects, it means that people consider everything, including their own happiness, to be "in the hands of God" and may take steps to not to protect themselves; Also, a trauma or tragedy can challenge people's perceptions of Godliness and His protection, and they may experience feelings of anger, abandonment, or punishment by a higher power(36). It is necessary to consider spiritual therapy for COVID-19 patients considering the positive aspects of spirituality and religious beliefs in health care, including strengthening contrasting strategies with stress, recovery and resilience, the ability to cope with illness, recovery after hospitalization, and a positive attitude in a difficult situation (34).

One of the other findings in this study that can be effective on non-compliance with home quarantine is the role of managerial problem. A study in this field shows that the country's existing social policies, as well as policies specifically tailored by the government to respond to the COVID-19 challenge, are in line with compliance with public health practices as well as life after the epidemic(37). Nazari et al. stated that many jobs, including workers, vendors, marketers, and NGOs, face financial difficulties due to insufficient financial support from the government.(38). Provide financial and health support during the epidemic, impose strict restrictions, control and close monitoring of procedures as well as compliance with the principles of honesty and transparency by officials and news agencies(16). Therefore, it seems necessary for the government and policy makers to gain mutual trust in the community by being honest and to consider programs to reduce financial pressures as well as compensate for financial losses caused by quarantine.

Another finding of this study is marital incompatibility. In this regard, past studies have shown the relationship between exposure to natural disasters or other unforeseen events and the increase in domestic violence(39). During a natural crisis for a variety of reasons such as stress due to physical imprisonment, economic disruption, slowing down the trade process, possible unemployment, shortage of raw materials, limited social support, domestic violence increases (40). Since the family is the core of society, it seems necessary for the authorities to develop programs to reduce domestic violence and its consequences.

Adherence to social and cultural pattern is another finding which can be effective in non-compliance with quarantine. Consistent with this finding, despite significant diversity across cultures, personal experience, individual and social values, hearing the virus-related news from friends and family significantly effective in understanding the risk of Novel Coronavirus (41). Cultural and religious factors as the most important factors in Iranians' understanding of the risk of Covid-19 disease(42). In Iran, numerous gatherings with religious, national, sports, political and scientific nature are held that the postponement and prohibition of these gatherings can be one of the main measures in reducing the risk of disease outbreaks (43).

The limitations of this study included, but were not exclusively, a small sample size, which thereby limited the generalizability of the results. However, these findings should be reassessed after replicating this study in other cultures and contexts.

CONCLUSION

According to the results of the present study, policymakers and government officials should by honesty, gain the necessary trust in the eyes of the people and prioritize the management of economic turmoil, and by creating the necessary facilities, provide job security for people. Also, conditions should be provided so that the daily necessities of the people can be provided to them at the lowest cost and risk. Providing the necessary training to reduce psychological signs and symptoms and domestic violence with the help of media can be a good solution. Consideration of free counseling centers by psychiatrists and psychologists can also be effective. Continuing to ban or postpone gatherings is also a good way to reduce the risk of Novel Coronavirus disease and adhere to home quarantine. The public need to aware that COVID-19 control requires collective effort where they have a significant role to play. It is crucial for the public to abide with the authority's instruction while at the same time the authority need to properly educate the public. Hence, all parties have their responsibility in fighting the COVID-19.

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