Behavioral Changes in the Community Following COVID-19 Pandemics; A Conceptual Model Derived from a Grounded Theory Study in Iran

Mohammad Hossein Kaveh[1], PhD; Shirin Ahmadnia[2], PhD; Mohadeseh Motamed-Jahromi[3], PhD; Fazlollah Ahmadi[4], PhD

[1]Research Center for Health Sciences, Institute of Health, Department of Health Promotion, School of Health, Shiraz University of Medical Sciences, Shiraz, Iran
[2]Faculty of social sciences, Allameh Tabataba'i University, Tehran, Iran
[3]Department of Medical-Surgical Nursing, School of Nursing, Fasa University of Medical Sciences, Fasa, Iran
[4]Department of Nursing, School of Medical Sciences, Tarbiat Modares University, Tehran, Iran

Correspondence:
Mohadeseh Motamed-Jahromi,
Department of Medical-Surgical Nursing, School of Nursing, Fasa University of Medical Science, Avicenna Square, P.O. Box: 74616-86688, Fars, Iran
Tel: +98 71 53350994
Fax: +98 71 53357091
Email: mohadesehmotamed@gmail.com
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Abstract

Background: COVID-19 epidemic in Iran has imposed a heavy social, economic, political, and psychosocial burden and caused devastating social problems. On the other hand, it has also led to promising social cohesion. This study aimed to explore the community-wide changes following the COVID-19 pandemic and to understand how these changes may affect the Iranian community.

Methods: This qualitative study used the grounded theory approach and conducted from May 2020 to March 2021 at Shiraz University of Medical Sciences, Shiraz, Iran. Adopting a purposive sampling approach, 15 faculty members in different fields participated in this study, and 17 interviews were performed.

Results: This study indicated that the core phenomenon in the social change process was "struggling for survival and livelihood". Therefore, people tried to identify and choose strategies to deal with or repel COVID-19 disease as a life-threatening situation. A set of contextual factors influenced their choice. The media and the performance of organizations as intervening conditions also played an important role in this process. Finally, this complex process led to constructive and destructive outcomes in society.

Conclusion: The COVID-19 epidemic caused various multifaceted social changes in the Iranian community. Some social consequences were constructive and contributed to community development, while others jeopardized community development goals. Therefore, the paradigm model developed in this study can help policymakers and social planners develop programs to promote community health.

Introduction

It was not long before a serious respiratory illness was reported in Wuhan, China, in December 2019; the world faced a major health shock with its rapid spread to many countries.[1] The start of the COVID-19 epidemic in Iran was officially reported on February 18, 2020, and Iran, like other countries, faced an increasing number of debilitating sufferings and mortalities that imposed a heavy social, economic, political, and psychosocial burden.[2, 3] Accordingly, strict policies and regulations were established, including social distancing, home quarantine, and severe restrictions on socio-economic activities as the main strategies for controlling the

pandemic.[4, 5] Many workers lost their jobs and most mass activities and social events were suspended due to new public health regulations.[6] These confinements exacerbated social loneliness and isolation, causing devastating social and economic problems.[7]

In contrast to the black side, the bright side of the disease brought about some beautiful and promising social events and campaigns. For example, community-led/grassroots-initiated movements were formed to support high-risk or less-favored disadvantaged social groups such as the elderly, street children, the homeless, and the needy. In addition, significant positive changes were created in people's lifestyles, health habits, and behaviors.[8]

Few studies have examined the social or economic effects of epidemics, including COVID-19, Ebola, MERS, and SARS. For example, some researchers stated that the COVID-19 epidemic created and even worsened some root social problems, such as poverty and inequality.[9] The others found that the Ebola epidemic negatively impacted public trust in Libyan social organizations and faced people's social and economic life with an irreparable challenge.[10]

The reality is that changes following epidemics such as COVID-19 vary according to the cultural, social, ethnic, and economic characteristics of societies which shows the need for cross-cultural research. For example, as the Iranian people grapple with international sanctions at the same time as the COVID-19 epidemic, the socially destructive effects of COVID-19 seem to be more pronounced. Therefore, due to the varied positive and negative social consequences of the COVID-19 outbreak, further research is necessary to understand the effects of this pandemic with a holistic approach. To the best of researchers' knowledge, no study examining the social effects of COVID-19 in Iranhas been found. Therefore, this study aimed to explore the community-wide changes following the COVID-19 pandemic and to understand how these changes may affect the Iranian community.

Methods

This qualitative study was conducted based on the grounded theory approach from May 2020 to March 2021 at Shiraz University of Medical Sciences, Shiraz, Iran. Interviews lasted for one month and the rest of the time was devoted to transcribing verbatim, data analysis, theory mapping, and manuscript writing. The research population included fifteen faculty members in the fields of public health, sociology, health promotion, occupational health, environmental health, nursing, psychology, health economics, and management. The participants were selected considering the main question and using theoretical sampling and maximum variation. Inclusion criteria were three years of work experience and willingness to participate in the study. The only exclusion criterion was dissatisfaction with the interview recording (Table 1).

Face-to-face semi-structured interviews were conducted to collect data by the third author privately at the participants' workplace. Interviews were transcribed verbatim after audio-recording them with participants' permission. Fifteen participants were interviewed, lasting 45-90 minutes. In addition, the first and sixth participants were interviewed twice to remove misunderstandings during the coding process and ambiguous cases. In total, 17 interviews were performed with 15 participants.

The interviews began with some main questions, including "What changes occurred in the social life of the people with the onset of the COVID-19 pandemic?", "What strategies or measures do you think people use to counter this disease?", "What would be the possible consequences of these social changes?" Then probing questions were used based on the participants' responses, such as "Could you please explain more?"

Table 1: Demographic characteristics of the participants

Participants	Gender	Age (Year)	Professional background	Experience (Year)
1	Male	53	Health promotion	27
2	Male	42	Sociology	5
3	Female	43	Health promotion	11
4	Male	35	Public health	6
5	Male	56	Occupational health	28
6	Male	41	Health economics	8
7	Male	42	Occupational health	5
8	Female	43	Psychology	15
9	Male	47	Sociology	12
10	Female	42	Nursing	6
11	Male	45	Health promotion	15
12	Male	40	Management	5
13	Male	38	Psychology	4
14	Female	51	Environmental Health	19
15	Female	39	Nursing	8

Corbin and Strauss's approach was used for data analysis through three levels: open coding, axial coding, and theoretical integration.[11] The transcripts were coded line by line in open coding and generated categories and subcategories. In axial coding, a paradigm model links categories and subcategories together. Finally, in theoretical integration, a storyline was written and a theoretical framework was developed.

Lincoln and Guba's criteria, including credibility, dependability, confirmability, and transferability, were used to confirm trustworthiness.[12] For credibility, the interview protocol was tested in two pilot interview sessions and audited by the lead researcher (first author). In addition, debriefing sessions with research team members were held weekly. To assess confirmability, researchers tried to avoid the influence of their views on the interview process and to allow participants to express their views and experiences freely and also an expert audited a sample of the audio recorded file in the interview session. In addition, the researchers held reflexive journals and frequent meetings with each other to monitor the research process. A team approach was used to increase the dependability of the findings, so in addition to the two-member research team, independent auditors participated in the data analysis. Finally, the authors sought to increase the transferability of the findings as much as possible by involving different experts in various fields with several years of experience in health research, education, and practice.

This study was approved by the Research Council of Shiraz University of Medical Sciences, Shiraz, Iran (IR.SUMS.REC.1399.296). At the beginning of the research, written informed consent was obtained from the participants for the interviews, and they were ensured that their personal information would be kept confidential.

Results

Data analysis led to the development of 147 initial codes, 28 subcategories, and 13 categories. Following this, a theoretical scheme was developed for the community's consequences of the COVID-19 outbreak. The concept of "struggling for survival and livelihood" was the core category. When confronted with COVID-19 threats, people choose adaptive or maladaptive strategies. Their choice is influenced by contextual conditions such as cultural norms and values, socioeconomic status, spirituality/religion, past community experiences, community resources, and literacy skills. In addition, the media, governing bodies, and community organizations, especially health care departments, play an important role in this process as intervening conditions. Finally, this complex process may lead to constructive or destructive results (Figure 1).

Casual Conditions

Most of the participants considered COVID-19 as a serious threat and a factor that endangers people's lives and livelihoods.
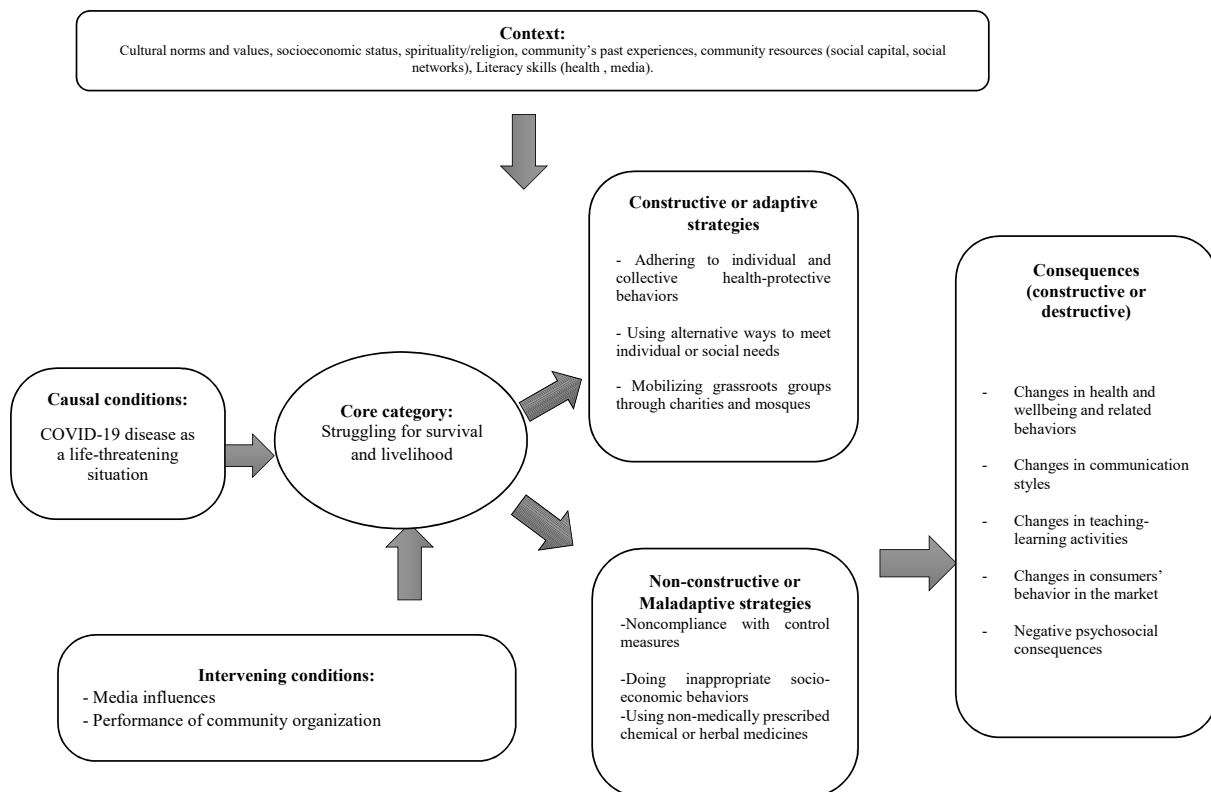

Figure 1: Paradigm model of social consequences following COVID-19 outbreak.

"...People are anxious and worried, and they are afraid that if they get sick, is there anyone to take care of them? Are they dying...?" (p7)

"...Many people are afraid that as the disease spreads in the community, they distance themselves from their friends and relatives and are even afraid that they will no longer be able to afford living expenses..." (p12)

Core Category: Struggling for Survival and Livelihood

Fear and perception of threat are great motivators to avoid factors and situations that can lead to undesirable consequences. From the participants' point of view, the perceived threat from COVID-19 motivates people to struggle to survive and provide living resources for themselves or vulnerable groups in the community. The study's findings showed that people's efforts to survive and maintain livelihood were divided into two sub-categories: individual and collective. Participant 6 stated:

"…I see that the demand for masks and disinfectants is increasing, or people are rushing to the shops. This issue shows that they want to avoid getting sick and are worried about being able to get the food they need…" (p6)

"...In this situation, we see some people doing things in groups. For example, they act voluntarily with some of their friends to provide the necessary materials for the elderly in their neighborhood to prevent the transmission of the disease to the elderly..." (p3)

Strategies

Participants identified various strategies or solutions that people might use for survival when they face the COVID-19 threat. The coding process generated two categories of strategies: adaptive and maladaptive. On the bright and positive side of the COVID-19 pandemic, most participants believe that the understanding of the importance of individual preventive behaviors in people is increasing. As participant 11 stated:

"...Compared to the past, more people, not all though, have realized the importance of behaviors to prevent respiratory infections, use masks and wash their hands more often ...."

"... I think moderate self-care is being formed *and people are advising each other about their health..." (p6).*

The findings show that people have identified alternative ways to meet some of their communicative or social needs.

"... Now, some people are communicating with their friends or relatives via social media like WhatsApp and Telegram, instead of face-to-face meeting..." (p14).

Higher use of the internet to order and purchase the required goods is another alternative method identified and expressed by some participants.

Other activities that many participants mentioned included forming and mobilizing grassroots groups through charities and mosques to provide required materials for needy families and hospitals. *"… Fortunately, a significant portion of the supplies for Ali-Asghar Hospital, a referral center during the COVID-19 epidemic in Shiraz, Iran, is now being provided by a group of donors. Mosques also play a good role in collecting and organizing public donations. For example, in some mosques, groups of volunteers provide masks for health care workers...." (P4).*

From the participants' point of view, anxiety and fear of getting sick can lead to maladaptive responses. Refusing to wear a mask, unnecessary travel, going to crowded environments, purchasing and storing food and detergents beyond the usual weekly or monthly needs, hoarding needed materials and goods of the people, and offering goods at higher prices can be mentioned as examples of maladaptive actions referred to by the participants:

"...Some people continue to go shopping and leisure trips. It seems they are denying the risk of COVID-19. I wish they at least used a mask..." (p11).

"...This panic-buying is hurting the community. Food and sanitation hoarding have also been a problem..." (p4).

Recommendations to use some herbal remedies to prevent the threat of COVID-19 was another study finding, which was referred to in the interviewees' statements.

"...One of the things we are seeing on the rise these days is people turning to certain foods, such as garlic or herbs, which often have a medicinal aspect..." (p15).

Contextual Conditions

In response to the question of what factors/conditions may explain different or diverse behaviors among people, the respondents mentioned that those with positive past experiences in terms of social trust would respond better.

"... Culture and economy are important. But our people are mostly altruistic and religious. In addition, our people have experienced helping each other in times of Iran-Iraq war, massive earthquakes like what happened in Bam city." (p8)

From the participants' view, religious values and beliefs in Iranian society play an important role in turning to health-promoting behaviors and supportive public actions.

"... The fact that some people try individually or collectively to meet the needs of others is related to their religious beliefs. We have many verses in the Qur'an and the many narrations of our Prophet and

Imams [PBUT] who emphasize helping the needy....” (P1).

Another participant emphasized the useful role of NGOs.

“...There are many charities in the country that arise from the cultural characteristics of our people. They play an important role in organizing grassroots activities such as helping the needy. ...” (P12)

They also referred to literacy and education levels as important determinants of people's behaviors.

“...Levels of health literacy, people's knowledge of diseases, and the ability to distinguish between true and false information affect people's behaviors. Many people still do not know where to get the necessary information about diseases” (P7).

Intervening Conditions

Some participants found that how the COVID-19 pandemic news was disseminated through the media affected people's perceptions of the threat.

Participant 15 said: *“...The fact that we are witnessing people rushing to the market to buy a particular product or substance is partly due to the messages they receive through social media; For example, when it is said that consuming garlic effectively prevents coronavirus disease....”*

The performance of various organizations, including healthcare authorities, in providing the necessities of COVID-19 prevention also significantly impacts how people respond.

“...If the organizations responsible for monitoring and controlling the supply of goods and prices in the market do not perform their duties well, people will be more concerned about meeting their needs” (P3).

Consequences

This complex process of adapting to the COVID-19 threat ultimately leads to the consequences we presented into two subcategories: constructive and destructive outcomes.

Some of the destructive adverse outcomes identified by the participants were psychological, including anxiety, stress, obsession, and fear of stigma. In addition, participants identified internal (individual) or external (environmental) factors as determining their occurrence. For example, participant 14 said:

“...This disease is really scary, and I have to wash my hands too many times. I think I'm becoming an obsessive person ....”

“...Early in the outbreak, I had a student from a city where Corona was widely reported. Although he was not sick, he stopped coming to university because everyone kept a distance from him...” (P2).

Some participants pointed to several social problems due to the COVID-19 outbreak, including distrust, the disintegration of social networks, and reduced participation.

“...This disease damages some activities that require teamwork and causes them to be interrupted or delayed.…” (P3).

“...A very bad thing that happened in the city was that the deputy of health in the university announced the centers for delivering masks, gels, and so on. People went there, and there was nothing to buy. People become very angry; when there is anything, why are you misleading... after all?” (P5).

Lack of learning and the closure of educational institutions were also the devastating consequences of the outbreak of COVID-19, the effects of which will become more apparent in the long term.

“…I think no training is as effective as face-to-face training. The students did not learn anything this semester…” (P9).

Economic activities, occupations, and trade have disrupted and downgraded due to the outbreak of COVID-19.

“...Many people lost their jobs and even went bankrupt; some of them never even imagined something like this would happen, such as restaurant owners...” (p11).

On the other hand, one of the constructive outcomes of this pandemic was that people realized the value of health and the role and importance of lifestyle in promoting health. The disease also made people appreciate social interactions, which became restricted due to the lockdown.

“...People learned that if they take health advice seriously, they will not get sick...” (p8).

“...What a pity, once there were days when we went to parties without any worries, celebrated, and met with our loved ones...” (p15).

Another positive constructive result was the creation of a sense of community unity and cooperation among the people since people were actively involved in charity activities:

“…In Iran, suddenly empathy and cooperation went hand in hand, and people took part in charitable activity, began to establish NGOs and take care of themselves …” (p7).

People learned to use other modes and means of communication and sales, and cyberspace partially replaced face-to-face interactions.

“…Although I do not prefer virtual interactions, in this situation is a good solution. Of course, in my opinion, online shopping is very convenient…” (p10).

Discussion

This study highlights that the COVID-19 pandemic generated various multi-faceted changes in the

community. Resulting in a range of consequences. Some consequences positively help community development, but destructive ones can endanger community development goals. As a final synthesis, we drew a paradigm model that shows how different factors/conditions influence the core category, strategies, and ultimately social consequences.

According to the results, the COVID-19 outbreak as a serious life-threatening condition causes people to search for ways of self-protection. The more severe the threat is perceived, the greater the pressure to change behavior.[13] Perceived threat and seriousness are great motivators that make people change their behavior to avoid adverse outcomes.[14]

People may take rational (constructive) or irrational (non-constructive) strategies in dealing with threats, resulting from COVID-19. For example, people may adopt health-protective behaviors and participate in the protective initiatives of the community and reduce the disease damage , as the constructive strategies In addition, similar to findings from other countries, some Iranian people participate in charitable activities by forming helping groups or collaborating with NGOs during COVID-19 epidemics.[15, 16]

The results demonstrated that the use of social media networks and cyber-communication increased in times of infectious disease outbreaks. Online communication is an appropriate strategy in situations where face-to-face interactions are limited.[17] Another strategy is to replace e-commerce to meet the economic needs of the people. Japanese researchers believe that the outbreak of the novel coronavirus has led to a new pattern of consumption, such as a sharp increase in demand for online services and purchases.[18]

Sociocultural norms were among the important contextual factors influencing people's behaviors at individual and community levels. So that during the COVID-19 outbreak, some people engaged in risky behaviors, such as refusing to wear a mask, inappropriate socio-economic behaviors, such as hoarding, and the use of non-medically prescribed chemical or herbal medicines.[19] Researchers suggest psychological disabilities, health threats, and lack of information during an epidemic can lead to negative responses in individuals.[20]

Spirituality/religious beliefs and values are also important factors influencing or regulating people's behaviors. Adherence to religious beliefs can increase social connections and cohesion by encouraging healthy behaviors and extending social support networks.[21] For example, Prophet Mohammad recommended a prevention strategy: "If you hear that plague or any other dangerous infectious disease has broken out in a land, do not go to it; but if it breaks out in a land where you are living, stay at home in your city".[22] In the holy Quran, God said: "Eat from clean foods and do good deeds" (The Qur'an 23:51).

In addition, as a main social responsibility in Islam, God has required all people except the poor to give a portion of their wealth to the needy.[23] These facts imply that identification of and designing health communication messages focusing on religious values could significantly contribute to promoting health-protective behaviors, particularly during infection epidemics.[24]

The other contextual condition was socioeconomic statuses, literacy skills, and past experiences. Poverty is associated with poor living conditions, low accessibility, and decreased ability to purchase health services/goods.[25] According to participants, low media literacy leads to trust in unreliable information, following cyberspace recommendations without assessing validity, and sending unreliable messages. Some researchers stated that people's choices, social responsibility, and behavioral insights during the COVID-19 outbreak are placed in the toolbox of health literacy.[14] The community's past experiences on volunteer initiatives and participation in times of public disasters such as war, earthquakes, and floods also influence how people act in new crises like the COVID-19 epidemic.[26]

This study showed that traditional media and cyber-communication technologies could potentially have positive or negative effects during public disasters. The media with suitable messages can increase the perceived threat and health-protective behavior, improve emotional health through counseling services and develop grassroots and voluntary activities.[27, 28] On the negative side, the media may spread false information and rumors about the disease, report the pandemic news with unrealistic magnification, and use negative frames.[29] Another challenging issue is a massive infodemic which makes it difficult to find the right and reliable information during the COVID-19 pandemic.[30] This issue demonstrates the necessity of planned efforts to improve health literacy, including media and digital health literacy in society.[31]

Public and private community organizations can play significant roles in controlling or mitigating the negative effects of the COVID-19 epidemic in society.[32] First, community organizations can facilitate the development of community-based initiatives and people's participation to meet the needs of disadvantaged groups.[33] Second, integrating primary health care into hospital services and building alliances between the public and private health sectors will contribute to meeting community's health needs.[34] Third, adequate access to reasonably priced goods and services reduces people's worries and significantly improves consumers' behaviors. This requires the proper coordinated functioning of manufacturing companies, providers, and regulatory agencies.[35]

The present study's findings revealed a relatively wide range of destructive and constructive

consequences of the COVID-19 pandemic in the community. Increased mortality and disease, acute fear of COVID-19, stress, anxiety, depression, severe fatigue, sleep disturbance, and burnout of healthcare workers are some but not all of the negative psychosocial consequences that occurred during the COVID-19 pandemic.[36] In addition, the COVID-19 pandemic has exacerbated social isolation, social stigma, discriminatory attitudes and actions, and increased distrust and xenophobia.[37, 38] The cessation of face-to-face education, lack of students' access to the Internet and necessary educational material, and lack of teachers' e-learning competencies are the other consequences of the COVID-19 outbreak that have disrupted public and higher education, and it seems these problems exist in most countries.[5, 39]

Fortunately, the COVID-19 outbreak had a bright side and increased people's attention to the importance of adhering to personal and social health measures. Human interactions were highlighted, and people were encouraged to participate in voluntary and benevolent work. The sense of community strengthened; so that, many people mobilized spontaneously or through the leadership of NGOs, mosques, and charities to meet the needs of hospitals and disadvantaged groups in the community.[40] In addition, with the spread of e-learning, the skills of teachers and students in using this technology increased, and they became more aware of its advantages.[41] People appreciated communication and information technologies for meeting their economic needs.[42] Many people also became aware of the capabilities of information and communication technologies, including social media, for human interaction and contact with friends and relatives.[43]

The study's main strength was that we used a qualitative approach to explore the process of social change during the outbreak of COVID-19, which has received global attention in a small number of studies. However, this study may have some limitations inherent in most qualitative studies. For example, although we used the maximum variation strategy to select the participants, the generalization of findings may be limited because of conducting research and selecting participants at only one of the universities in Shiraz. In addition, it seems some findings can't also be generalized to other countries and cultures because of cultural, political, and socio-economic differences.

Conclusion

This study showed that the COVID-19 pandemic was associated with widespread social changes and consequences, constructive and non-constructive. The paradigm model developed in this study can help formulate new hypotheses and design future studies. In addition, the findings of this study can help policymakers and social planners develop programs to promote community health.

Acknowledgment

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