



How Can Community Engagement Help the Health System in Controlling the COVID-19 Pandemic in Rural Areas?

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ABSTRACT

Aims Community engagement, as a key factor in changing behavior, can affect the prevention and management of communicable diseases in rural areas. This study aimed to determine the role of community engagement innovations in controlling the Coronavirus pandemic in rural areas.

Participants & Methods This qualitative study was carried out using observation, reviewing documents, and semi-structured interviews, for data gathering. Interviews were done by Key informant persons that were selected purposefully. All interviews were recorded, transcribed verbatim, and analyzed manually by using the thematic analysis method.

Findings Forty-five codes and three themes were obtained by open, axial, and selective coding methods. The main themes were Management and leadership, public confidence and trust, and accountability and transparency which could have many important roles in engaging people in controlling COVID-19.

Conclusion The findings show that using community engagement in rural areas can play a critical role in controlling the spread of COVID-19, but it depends on the cultural, social, and economic status of the community. In addition, promoting health literacy and a sense of responsibility for individuals for their health and the health of others can increase the success of these innovations.

Keywords Social Participation; Rural Population; COVID-19

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Introduction

Infectious diseases still play a major role in mortality and disability throughout the world and most of the disease and economic burdens occur in low and middle-income countries [1]. With the development of technology and easy transportation, the speed of infectious disease transmission has increased in the world. The spread of diseases such as SARS, Avian influenza, and Ebola has indicated that countries must always be prepared against such epidemics. Community engagement innovations are presented as a vital enabler for responding to infectious diseases in low and middle-income countries [2-5]. Furthermore, community engagement potentials, especially where the health system has few resources, are considered key sources in changing behavior and presenting health complications [6]. Based on justice in health, there is some evidence indicating that community engagement can affect the prevention and management of communicable diseases in marginalized groups [7-8]. It means the engagement of the local populations in projects, interventions, and activities include many aspects from the provision of information to active engagement [9-10]. Community engagement is considered one of the fundamental principles of primary health care included in the declaration of Alma-Ata [11]. It aims to involve people in decision-making, planning, designing, governing, service delivering, and policy-making; thus, it can range from citizen counseling (low effect on decisions) to partnership and leadership, where citizens have decision-making rights [12]. Selecting the type of engagement depends on community conditions, supportive environments for engagement, effective projects, promoted skills and empowerment, and situations where such plans are implemented. Observing the principles such as using the people familiar with the community, mobilizing local resources, creating a vision for the plan, involving individuals in monitoring the plan, having political commitment by the government and service providers to successfully implement the plans, and justifying people and stakeholders, are significant in the effective progress and continuity of the plan [13]. However, the inadequate use of appropriate local channels in publishing information can create different interpretations and weaken community engagement and informed consent [14].

The right to have access to appropriate health care for all people is emphasized in the constitution of Iran. Therefore, paying attention to primary health care in Iran is a priority, and involving volunteers has been considered to be an appropriate solution for developing healthcare services in society [15].

In this study, community engagement innovations were evaluated in the field of Coronavirus (COVID-19) control in one of the villages in East Azerbaijan province in Iran. The youth in this village always

launch different campaigns for improving the health level of the villagers, such as collecting garbage from the village, planting trees and developing green space, developing the piping of drinking water, and drainage of the village aqueduct. During the Coronavirus pandemic, they launched a campaign called "HAMMULUKHJAN," meaning "all together" to fight the Coronavirus pandemic with active screening by health workers. The present study aimed to investigate the experience of this village and present a sample for other rural areas for helping the health system in controlling the Coronavirus pandemic or other epidemics.

Participants and Methods

A qualitative study was designed. Observation, document analysis, and semi-structured interviews were used for data gathering. The inclusion criteria for the participant were, key members of the campaign and who had the most information about the campaign purpose and activities, such as the governor of the village (Dehyar), the head of the Basij, and village health workers, village council members, and volunteers. Interviews were conducted face to face. All selected people participated in the interviews and completed the consent forms for participating in the interview.

Semi-structured interviews with key informant persons such as village officials, campaign officials, and informed people selected purposively were conducted. At least 6 interviews, one-week field observation, and ten report analyses were done. Also, reviewing the related documents and following the news and reports on social media of the village were used to complete the data gathering.

Interviews were done in the station at the entrance of the village for controlling the incoming cars. Only the interviewer and participants were in the interview place. each interview lasted for 20 minutes and was done between 10 and 12 AM. Interviews were recorded and transcribed word by word and were returned to the interviewees for approval. To maintain the confidentiality of participants' information, the interviews were numbered from I1 to I6 (Table 1).

Table 1) Characteristics of the participants

Code	Educational degree	Age (Year)	Gender	Interview time
I-1	Master's degree	35	Man	10:20-10:40
I-2	Bachelor	39	Man	11:10-11:30
I-3	Diploma	42	Man	10:20-10:40
I-4	Associated degree	34	Man	10:00-10:20
I-5	Bachelor	38	Woman	11:40-12:00
I-6	Diploma	36	Woman	10:00-10:20

We increased the validity of the study by using a variety of note-taking, observing, and sampling methods, and for increasing the reliability, trained people were also used for caring the interviews,

observations, and study documents. After six interviews, data were saturated.

Data were analyzed qualitatively by thematic analysis based on Clarke and Braun ^[16]. First, the data were evaluated several times for familiarization, and then they were manually coded. Open, axial, and selective coding were used, and then the codes were categorized and sub-themes and themes were obtained.

Findings

Data analysis gave us 45 codes, six subthemes, and three main themes (Table 2).

The results of the study showed that the Main themes are management and leadership, gaining people's trust and accountability of officials, and

transparency, which are interpreted below.

• management

Results of the interviews indicated that the management of engagement was through the rural municipality and Islamic Council of the village in coordination with the rural health center, located in the village, and the engagement of the mobilization forces and the people.

“Due to the Coronavirus pandemic in the world, we decided to launch the popular campaign of HAMMEMULUKHJAN for controlling the spread of this virus. Therefore, we asked all citizens, feeling socially responsible, to promote and join this campaign for expanding the healthcare services and preventing the prevalence of this virus in our village.” [I-1]

Table 2) Results of coding the data

Codes		Subthemes	Themes
1.	Expanding the healthcare services	Managing	Management
2.	Preventing the pandemic		
3.	Supplying		
4.	Required stuff		
5.	Entering the village		
6.	Monitored		
7.	Disinfected		
8.	Announce their readiness		
9.	Sending an SMS		
10.	Campaign		
11.	Distributed among the villagers		
12.	Produce masks		
13.	Feeling social responsibility	Leading	
14.	Join this campaign		
15.	Interested in participating		
16.	Are invited		
17.	Asked all citizens	Team Work	Trust
18.	Providing shelters, thermometers, water tanks		
19.	Providing thermometer, water tanks		
20.	Providing, water tanks		
21.	Team		
22.	Preparing lunch and dinner		
23.	Cooperation of ladies		
24.	Our village	Trust Feeling	
25.	Account number of the rural municipality		
26.	Village trustees		
27.	Asked to help		
28.	As much as they could		
29.	Voluntarily costs		
30.	Volunteers		
31.	Mobilization members		
32.	Youth of the village		
33.	Hope		
34.	Helping		
35.	Us		
36.	Your efforts		
37.	God almighty		
38.	Honorary agents		
39.	Thank the residents		
40.	Can go to the “Headquarter later and receive your share.”		
41.	Dear citizens		
42.	Financial statement	Transparency	Transparency
43.	Cash donations		
44.	The spent money report is presented		
45.	Rials were collected with the participation	Accountability	

- **trust**

The respondent stated that the bank account numbers of the rural municipality and one of the village trustees were announced, and everyone was asked to help as much as they could by disinfecting the passages and controlling the entrances and exits of the village. A large group of the villagers, even those living somewhere else, deposited money into the account as much as they could.

"The account numbers of the rural municipality and one of the village trustees were announced and everyone was asked to help as much as they could for supplying the required stuff." [I-3]

The finding of the interviews indicates that providing shelters for the team at the entrance of the village, buying thermometers, and providing water tanks voluntarily by the villagers, as well paying the cost of transporting the shelter to the designated places, and preparing lunch and dinner for the volunteers were among the public contributions.

The respondents stressed that the mobilization members and the youth of the village were voluntarily stationed on three shifts of 24 hours at the entrance of the village; they measured the temperature of the people entering the village and disinfected their vehicles. If the people had a fever, the volunteers would guide them to healthcare centers (Figure 1).



Figure 1) Disinfecting the streets

"since the people entering the village are monitored and their vehicles are disinfected by the volunteer teams for preventing the spread of the Coronavirus, all of the mobilization members interested in participating in this plan are invited to announce their readiness by sending an SMS to join HAMMEMULUKHJAN campaign". [I-2]

The participants stated that a group of females in the village skilled in sewing began making fabric masks for people at one of the schools with the help of the Islamic Council of the village and the rural municipality. After being sterilized, the produced masks were distributed among the people (Figure 2).

"This is to inform you that the problem of health masks has been solved with the cooperation of female tailors. We hope to produce masks in our village. God willing, we will deliver health masks to all of the families within the next 3-4 days."

"With the help of God and efforts of people, the production of washable masks was completed according to the needs of the villagers, and they were disinfected before packaging. The masks will be distributed among the villagers by the agents of the HAMMEMULUKHJAN campaign tomorrow, March 26, 2020." [I-2]



Figure 2) Distributing the masks among the villagers

- **transparency**

The finding of interviews indicates that some villagers were employed for disinfecting the main and side streets of the village. Under the supervision of the environmental health experts, a disinfection solution was prepared and used for disinfecting the streets.

"In order to prevent the Coronavirus with the help of the HAMMEMULUKHJAN campaign and perform disinfection, the 15th phase was conducted and all of the main streets of the village were disinfected for the fifth time." [I-5]

Findings showed that disinfectant solution and 70% alcohol were purchased and delivered to people at their houses.

"In order to fight against the Coronavirus disease, the honorary agents of this campaign distributed some amount of disinfectant solution to all families in the village. May God grant them increasing success and good health for their dear families." [I-3]

Another important innovation that participants indicated is that financial and performance reports for transparency were periodically provided to the people through the social media of the village.

"Report No. 21: Financial statement, phase 2. "Dear Sir, we would like to thank the residents of Galin Qayah village and the villagers in all parts of Iran, who are in line with the popular campaign of HAMMEMULUKHJAN to fight against the pandemic of the Coronavirus with their cash donations. From the formation of this campaign until today, an amount of 305650000 Rials. was collected with the participation of respected citizens; the spent money report is presented to you in the following report:

1. Purchasing the needed equipment and tools for preparing and sewing masks at 15300000 Rials.

2. Tractor services for disinfection at 4800000 Rials.
3. Purchasing cereals and proteins for preparing lunch for the staff of the campaign for their monitoring at the entrance of the village at 3420000 Rials.
4. Purchasing battery for thermometers and gloves at 1360000 Rials.
5. Purchasing lime and transportation fee at 14600000 Rials.
6. Workers' services at 4000000 Rials.

The total cost of the second phase is 43480000 Rials. The cost of the first phase report is 75100000 Rials., which was already announced.

It should be noted that the deposit in the rural municipality account is around 55000000 Rials., which is available in the rural municipality account.

Discussion

This study was conducted to show the impact of community engagement in preventing COVID-19 in rural areas. The most important findings of this innovation are the engagement of most villagers in campaign financing, mobilization of the public resources to control the Coronavirus pandemic, establishment of teams for measuring the fever of incoming passengers, disinfection of vehicles at the entrance of the village, repeated disinfection of village roads and streets, lime spraying of main streets, preparation, sterilization, and delivery of fabric masks to people, provision of disinfectants and delivery at home. These with the training of people through social networks on maintaining social distance, how to disinfect household items, and staying home, significantly helped by controlling the spread of the disease in the village. In addition, transparency in presenting the performance reports reassured people about the authorities and their performance and helped the funds and acceptance of recommendations.

It seems that the public confidence in the campaign organizers helped their success. According to Chantler *et al.*, the engagement of communities and their leaders can be highly effective while the limits of responsibility and authority should be clarified for determining and implementing different actions for insuring national health policies [2]. Keshavarz Mohammadi *et al.* considered the adherence to principles such as the use of people familiar with the community, mobilizing local resources, having a vision for the plan, involving individuals in monitoring the plan, having the political commitment of the government and service providers to successfully implement plans, and justifying people and beneficiaries significant for making the effective progress and continuity of the plan [17], which are consistent with the findings of the present study. Other effective factors in

community engagement are the cultural, social, and economic background of the people, raising the level of health literacy, and the sense of social responsibility of individuals regarding the health care of themselves and other people. Direct training by healthcare providers and health workers, training volunteers, and health ambassadors have been among the approaches to increasing health literacy in Iran in recent years. Karimi Nodehi *et al.* mentioned that various factors affect the health of people in community engagement, including cultural, social, and economic factors and the factors related to the health system [15]. Furthermore, Rock *et al.* stated that effective education and raising public awareness could cause community engagement in health promotion by developing a participatory culture, structures, and organizations, which facilitate community engagement through planning and policy-making [18].

According to Cyril *et al.*, the empowerment of regions and communities is essential in planning and implementing community engagement; they concluded that communities affected by the disease should define some strategies for preventing the transmission and should be committed to such strategies [19]. All of these studies confirmed the findings of the present study.

Another effective factor in the success of this innovation is related to the engagement of the locals and empowerment of the volunteers for protecting the health of everyone and coordination between the village municipality, people's force, and health centers. The results of the European Union in collaboration with the European Commission study indicated that empowering people and mobilizing resources create some opportunities for creativity and innovation in societies [15]. Wager *et al.* reported that organizations and governments empower citizens in community-led initiatives to play a more effective role in forming their services, policies, and communities [20].

Finally, the frequent, accurate, and transparent reports, as well as feedback in all areas of cooperation with individuals, were considered the reasons for the public confidence in the innovation and their voluntary engagement in helping [21]. Siddiqi *et al.* described transparency as one of the criteria for good governance [22]. Also, Baltzell *et al.* found that community engagement should rely on the early involvement of frequent feedback and active community engagement [9]. Karimi Nodehi indicated that factors such as the direct and effective role of people in society and informing them, the relationship between people and officials, and involving people in all stages of decision-making could affect their engagement in providing effective health care [15].

Conclusion

Based on the findings of this study, using community engagement potentials in rural communities can help control the spread of infectious diseases, which can be related to the cultural, social, and economic status of the village. In addition, the sense of responsibility of people for their health can help advance these goals. Mobilizing local resources, political support, and providing specialized counseling by the health system can lead to public confidence and provide accurate reports on public awareness and confidence in performing things. Thus, community engagement can be considered one of the methods for helping with future planning in the decisions made by the Ministry of Health to prevent the spread of infectious diseases such as COVID-19.

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