Research Paper

Health Literacy about COVID-19 in People with Infertility in Iran

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ABSTRACT

Background: Given the limitations infertility in infertile individuals, they fear facing this epidemic and losing hope for fertility. We want to see to what extent they trust the authorities in preventing this epidemic. This can be achieved through sufficient health literacy.

Methods: Monitoring behavioral and cultural insights during the pandemic is a useful tool to identify health literacy related to COVID-19(find, understand, judge, follow). Data were collected using the European Health Literacy Scale and the COVID-19 Knowledge. The survey of this descriptive cross-sectional study was conducted for 1 year, with a sample of 384 individuals with infertility aged between 18 and 76 years old who were referred to the Royan Institute. Health literacy includes 4 sub-indices that measure a person's ability, information, and knowledge in the field of health.

Results: Studies show that the level of health literacy itself was related to gender, age, education level, economic and social base, and people's job fields. About 68 percent of the respondents have been infected with COVID-19 at least once, and "understanding" and "following" mean levels were the same. However, "judging" mean levels were the lowest literacy level. Gender, educational level, household, who lived with, and finding the information, the only index of health literacy, have statistically significant effects on the history of infection with COVID-19. In accordance with the findings of this research, the importance of health literacy in the field of the spread of COVID-19 has been confirmed in previous studies.

Conclusion: So, in the end, it can be concluded that in Iran, the effort to improve the level of health literacy of the society will undoubtedly reduce the incidence of COVID-19 and any other possible global disease in the future. Health and specialized training in this field can be helpful and effective.

Keywords: COVID-19, Health Literacy, Infertility, Iran

Introduction

The COVID-19 virus began spreading around the world in early spring 2020, causing deep crises in many countries. People with infertility living in conditions and everyday lives have been profoundly affected by the COVID-19 pandemic [1]. It affected the continuation of all non-emergency medical treatment and the clients potentially suffer from restrictions like people with infertility. This study aimed to evaluate the health literacy of infertile couples.

In fact, the people with infertility wait more than one year to have a child, and they are concerned about any risk that affects them or their hope for having a child in the future [2]. Undoubtedly, reducing the risk of infection with the coronavirus requires recognizing the variables associated with it. Centers for Disease Control and Prevention defined Personal health literacy as the degree to which individuals can find, understand, and use information and services to inform health-related decisions and actions for themselves and others [3]. Health literacy is the ability to "access, understand, appraise and communicate health-related information" [4]. Health literacy in this context measures finding, understanding, and judging the reliability of the information about COVID-19, understanding the restrictions and recommendations, and following them to protect themselves from COVID-19; understanding and following recommendations on when to stay home and when to engage in social activities were not easy [5].

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People need to have good health literacy during the COVID-19 pandemic, as it can help them make informed decisions and protect themselves from the virus.

There is not much evidence on how COVID-19 affects people with infertility, but some studies suggest that Half of Iran's population has limited health literacy. The ratio of that limitation was more in men than women, and then in individuals over 55 years old, unemployed people, housewives, and retirees is more common[6, 7]. Therefore, health literacy can be considered as one of the important factors in contracting COVID-19 [8].

It may not be very easy for a person with infertility to find the information they need related to COVID-19, as there is no systematic and comprehensive evidence on the association of COVID-19 with female fertility[9]. Most of the studies are still ongoing or have limited sample sizes. There may also be conflicting or confusing information from different sources. However, some reliable sources that may provide some guidance are:

- The American Society for Reproductive Medicine (ASRM)
- The European Society of Human Reproduction and Embryology (ESHRE)
- The International Federation of Fertility Societies (IFFS)

These organizations have issued some statements and recommendations on how to manage fertility treatments and pregnancy during the pandemic. However, those guides are usually used by professionals rather than lay people.

It may not be very difficult for a person with infertility to understand information about what to do if they think they have COVID-19, as the general advice is the same for everyone. The common symptoms of COVID-19 are fever, cough, and shortness of breath[10]. If a person has these symptoms, they should:

- Stay at home and isolate themselves from others
- Contact their health care provider or local health authority
- Follow the instructions given by their health care provider or local health authority
- Monitor their symptoms and seek medical attention if they worsen

However, if a person with infertility is undergoing fertility treatments or is pregnant, they may have some additional concerns or questions. In that case, they should also:

- Inform their fertility clinic or obstetrician about their situation
- Follow the guidelines and recommendations issued by their fertility clinic or obstetrician
- Consult the reliable sources mentioned in the above guidance for more information

It may be somewhat difficult for a person with infertility to judge if the information about COVID-19 in the media is reliable, as there are many sources of misinformation and fake news that may spread fear or confusion. Some examples of false or misleading claims are:

- The COVID-19 virus can be transmitted through sexual intercourse or semen [11]
- The COVID-19 pandemic has increased the risk of miscarriage or birth defects [12]

These claims are not supported by scientific evidence and have been debunked by experts. To judge if the information about COVID-19 in the media is reliable[13-15], a person with infertility should:

- Check the source and date of the information
- Look for evidence and references to support the claims
- Compare the information with other credible sources
- Consult their health care provider or fertility specialist if in doubt

It may not be very difficult for a person with infertility to understand the restrictions of authorities regarding COVID-19, as they are mostly the same for everyone. The general restrictions of authorities regarding COVID-19 are:

- Wear a mask or face covering when in public or indoors
- Maintain physical distancing of at least 1.5 meters from others[16]
- Avoid large gatherings and crowded places[17]
- Wash your hands frequently and use alcohol-based sanitizer
- Get vaccinated if eligible and follow the local vaccination guidelines

However, if a person with infertility is undergoing fertility treatments or is pregnant, they may have some additional restrictions or considerations. For example:

- Some fertility clinics may have suspended or limited their services due to the pandemic [18]
- Some fertility societies may have advised against becoming pregnant during this time [19]
- Some pregnant women may have to follow specific precautions during childbirth and the postnatal period [20]

These restrictions or considerations may vary depending on the local situation and the individual circumstances. Therefore, a person with infertility should:

- Contact their fertility clinic or obstetrician for the latest updates and recommendations
- Follow the guidelines and advice issued by their fertility clinic or obstetrician
- Consult the reliable sources mentioned in the above guidance for more information

It may not be very difficult for a person with infertility to “follow” the recommendations on how to protect themselves from COVID-19, as they are mostly the

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same for everyone. The main recommendations on how to protect yourself from COVID-19 are the same as "understanding" general restrictions of authorities regarding COVID-19:

However, if a person with infertility is undergoing fertility treatments or is pregnant, they may have some additional challenges or concerns. For example:

- They may have to visit their fertility clinic or obstetrician more often and face potential exposure to the virus
- They may have to deal with stress, anxiety, or depression related to their fertility or pregnancy during the pandemic
- They may have to cope with isolation, loneliness, or a lack of support from their family or friends

These challenges or concerns may affect their physical and mental health and their ability to follow the recommendations. Therefore, a person with infertility should:

- Take extra precautions when visiting their fertility clinic or obstetrician and follow their instructions
- Seek professional help or counseling if they experience any emotional distress or mental health issues
- Stay connected and communicate with their loved ones and seek their support

It may be somewhat difficult for a person with infertility to understand the recommendations about when to stay at home from work or school, and when not to, as they may vary depending on the local situation and the individual circumstances. The general recommendations about when to stay at home from work or school are:

- If you have any symptoms of COVID-19, such as fever, cough, sore throat, loss of taste or smell, etc.
- If you have been in close contact with someone who has COVID-19 or is suspected to have COVID-19
- If you have tested positive for COVID-19 or are waiting for your test results
- If you have been advised by your health care provider or public health authority to self-isolate or quarantine [21]

However, if a person with infertility is undergoing fertility treatments or is pregnant, they may have some additional considerations or exceptions. For example:

- They may have to visit their fertility clinic or obstetrician for essential appointments or procedures
- They may have to balance their work and child care responsibilities if they have children who are also staying at home
- They may have to face discrimination or stigma at their workplace or school due to their fertility or pregnancy status

These considerations or exceptions may affect their decision and ability to stay at home from work or school. Therefore, a person with infertility should:

- Follow the local guidelines and regulations regarding COVID-19 and stay-at-home orders
- Inform their employer or school about their situation and request flexible arrangements or accommodations if needed
- Seek legal advice or protection if they experience any harassment or discrimination due to their fertility or pregnancy status

It may be somewhat difficult for a person with infertility to understand the recommendations about when to engage in social activities and when not to, as they may depend on the local situation and the individual's preferences. The general recommendations about when to engage in social activities are[22]:

- If they are fully vaccinated against COVID-19 and have no symptoms or exposure to the virus
- If they follow the local guidelines and regulations regarding COVID-19 and social gatherings
- If they choose low-risk activities, such as outdoor, small, or well-ventilated events
- If they wear a mask or face covering and maintain physical distancing from others

However, if a person with infertility is undergoing fertility treatments or is pregnant, they may have some additional challenges or concerns[22, 23]. For example:

- They may have a higher risk of severe illness or complications from COVID-19
- They may have a lower desire or motivation to socialize due to their fertility or pregnancy issues
- They may have to deal with stress, anxiety, or depression related to their fertility or pregnancy during the pandemic

These challenges or concerns may affect their decision and ability to engage in social activities. Therefore, a person with infertility should:

- Consult their fertility clinic or obstetrician before engaging in any social activities and follow their advice
- Weigh the benefits and risks of socializing for their physical and mental health and well-being
- Seek professional help or counseling if they experience any emotional distress or mental health issues

It may not be very difficult for a person with infertility to "follow" the recommendations about when to engage in social activities, and when not to, as they are mostly the same for everyone. The main recommendations on when to engage in social activities are the same as when to "understand" the recommendations about when to engage in social activities

However, if a person with infertility is undergoing fertility treatments or is pregnant, they may have some

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additional considerations or exceptions[22]. For example:

- They may have to avoid certain activities that may pose a risk to their fertility or pregnancy, such as contact sports, alcohol consumption, or smoking
- They may have to balance their social and personal needs with their fertility or pregnancy goals and plans
- They may have to cope with isolation, loneliness, or a lack of support from their family or friends

These considerations or exceptions may affect their ability and willingness to follow the recommendations[23]. Therefore, a person with infertility should:

- Follow the advice of their fertility clinic or obstetrician regarding any social activities and restrictions
- Communicate and negotiate with their partner, family, or friends about their social preferences and expectations
- Seek support groups or communities of people who share similar experiences or challenges with infertility or pregnancy

This study aimed to investigate the relationship between some of the most important individual characteristics and health literacy variables with the likelihood of infection with the coronavirus.

Method

Monitoring behavioral and cultural insights during the pandemic is a useful tool to identify health literacy related to COVID-19(find, understand, judge, follow). This item is related to Assessment of ease/difficulty in finding information on symptoms, finding out what to do if infected, understand what authorities say, judge reliability of information, follow recommendations, decide on prevention behaviors [5]. By accepting to fill out the questionnaire, informed consent was given. It was providing the participant with an informed consent form (ICF) that outlines the study's purpose, procedures, risks, benefits, and other relevant information. Data were collected using a questionnaire designed according to the "survey tool and guidance" provided by the World Health Organization (WHO) [24]. A survey was conducted from 2021-11-10 to 2022-11-10, with a sample of 384 individuals with infertility who were recruited through convenience sampling.

The standard "forward-backward" translation procedure was used to translate the survey tool and guidance from English into Persian. The original English version was translated into Persian by two independent translators who were native Persian speakers with proficiency in English. The two forward translations were compared and synthesized into one common version by the research team. This version was then back-translated by a bilingual expert who had no knowledge of the wording of the original English version of survey tool and guidance. Both English versions were then compared and minor discrepancies were corrected. Ten clients were asked to complete the provisional version of questionnaire as a pilot study. Further corrections were subsequently completed, and the final version was made available for this study.

Then 3 questions from COVID-19 Knowledge constructed by Dr. Kamaran Bagheri Lankarani team [25] were added.

Respondents report the prevalence of an item on a 7-point scale, ranging from 0 (Very difficult) to 7 (Very easy). Summing all item scores. Scale scores range from 0- 54, with higher scores indicating higher levels of field.

Descriptive statistics were applied to all variables. The association was calculated using the chi-square test. Logistic regression was also used to predict the output variable. A p- value of <0.05 was considered to indicate statistical significance.

Results

Overall, 384 people with an age mean and SD of (35.73±7.75) completed the questionnaire. The questionnaire was the Farsi version of world Health Organization survey tool, which monitors knowledge, risk perceptions, and preventive behaviors on COVID-19. Of them 57.3 and 42.7% were female and male, respectively. Their education level was 61.2% higher education, 25% diploma, and 13.5% under diploma.

Most of them were housewives (64.2%), employed (31.5%), the rest were retired (1.4%) and unemployed (0.7%). From them, only 25.3% stated they were health professionals. Only 7.7% stated they have a chronic illness. The health literacy factors were as follows: finding the information (1 item), understanding (4 items), appraisal (1 item), and decision making/behavioral intention (3 items), as shown in Table 1.

In the 2nd table, the health literacy level was reported. For this reason, the scores of respondents as Likert 7-level scores were assessed. Then the questions in 4 level of finding, understanding, judging, and following were categorized. The table showed, finding and understanding mean levels (combination of 4 questions' scores) and following (combination of 2 questions' scores) were the same. However, the judging mean level was the lowest. In the next table, we will see the effect of Health literacy variables on the probability of COVID-19 infection.

In the 3rd table of the research variables on the probability of covid infection using binary logistic regression was presented. As it showed, gender and educational level as a categorical variable are sociodemographic variables. For each unit increase in the level of education, the odds of infection with COVID-19 were 4 times higher. Out of health variables, just finding information related to COVID-19 was

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negatively significant. It means for each one unit decreasing of finding information related to COVID-19, the odds of COVID-19 infection changes as 0.482 times. In other word, better ability to find information was associated with lower odds of infection.

The results were classified by each parameter of health literacy as follows.

Finding Information Related to COVID-19

Most of the people found it easy (34.5). Out of 214 females, 85 found it easy (22.19), and out of 157 males, 43 found it easy (11.6%), and they related positively significant (P≤ 01).

Most of the people found it easy (34.6). Out of 231 who were higher education, 101 found it easy (27.3), and out of 15 who were elementary, 2 found it easy (0.5%), and they related positively significantly (P≤ 01).

To Understand Information about what to do if you think you Have COVID-19

Most of the people found it easy (37.5%). Out of 212 females, 85 found it easy (23.1%), and out of 156 males, 53 found it easy (14.4%), and they related positively significantly (P< 02).

Most of the people found it easy (37.6%). Out of 230 who were higher education, 100 found it easy (27.2%) and), and out of 15 who were elementary, 3 found it easy (0.8%), and they related positively significantly (P≤ 01).

To Judge if the Information about COVID-19 in the Media is Reliable

Most of the people found it medium (35.8%). Out of 228 who were higher education, 89 found it medium (24.9%) and), and out of 14 who were elementary, 34 found it medium (1.1%), and they related positively significantly (P≤ 01).

To Understand the Restrictions and Recommendations of Authorities Regarding COVID-19

Most of the people found it easy (35.1%). Out of 213 females, 80 found it easy (21.6%), and out of 157 males,50 found it easy (13.5%), and they related positively significantly (P= 03).

Most of the people found it easy (35.2%). Out of 232 who were higher education, 87 found it easy (23.6%), and out of 15 who were elementary, 7 found it easy (1.9%), and they related positively significantly (P≤ 01).

Most of the people who understand what to do if they think they have COVID-19 found it easy (37.5%). Out of 137 who were understand restrictions and recommendations of authorities, 69 found it easy (18.9%), 2 people found it a little bit difficult/ very difficult (0.5%), and they related positively significantly (P≤ 01).

To Follow the Recommendations on how to Protect Yourself from COVID-19

Most of the people found it easy (30.6). Out of 230 who were higher education, 74 found it easy (20.1%) and), and out of 15 who were elementary, 7 found it easy (1.9%), and they related positively significantly (P≤ 01).

Table 1. Socio-demographic characteristics of people with infertility about COVID-19

Variable levels	Frequency	Valid Percent
Gender		
Female	220	57.3
Male	164	42.7
Education Level		
Elementary	17	4.4
Senior high school	35	9.1
Diploma	96	25.1
Higher education	235	61.4
Job situation		
Employed	88	31.5
Retired	4	1.4
Unemployed	2	.7
Housewife	179	64.2
Student	6	2.2
Age ranges		
<= 290	59	15.9
300 - 490	297	80.1
500 - 690	13	3.5
700+	2	.5
Health professional		
No	271	74.7
Yes	92	25.3
Having a chronic illness		
No	332	88.3
Yes	29	7.7
Don't know	15	4
Living area		
Urban	369	96.3
Rural	14	3.7
Household besides yourself		
I live alone	16	4.3
I live with children under 18	67	17.9
I live with people in a COVID-19 risk group (people over 65 years and/or with chronic disease)	25	6.7
None of the above	265	70.7
I live with children under 18 & people in a COVID-19 risk group	2	.5
COVID-19 personal experience		
No	118	31.9
Yes	252	68.1
If "yes": Was it		
Mild	151	74.4
Severe	52	25.6
Was it		
Confirmed by a test	63	58.3
Not confirmed by a test	45	41.7
know people in your immediate social environment who are or have been infected with COVID-19 (suspected or confirmed		
No	84	22.6
Yes	288	77.4
If "yes": you know someone who died from COVID-19		
No	130	39.5
Yes	199	60.5
Total	384	
Private financial situation		
Improved	43	11.3
over the past three months		
Remains the same	153	40.3
Worse	153	40.3
Don't know	31	8.2

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Table 2. Health literacy level of People with Infertility about COVID-19

	Find the information you need related to COVID-19.	understand	Judge if the information about COVID-19 in the media is reliable?	follow
Valid	371	361	359	367
Missing	13	23	25	17
Mean	5.35	20.93	3.92	10.30
Std. Deviation	1.53	4.88	1.63	2.95
Minimum	1	5	1	2
Maximum	7	28	7	14
Percentiles				
25	4	18	30	8
50	6	22	40	11
75	7	25	50	12

Table 3. Probability of covid infection

	B	Sig.	Exp(B)	95% for EXP(B)	
				Lower	Upper
Grouped age	-130	58	.357	.123	136
What is your sex?	-2.573	50	76	06	102
What is the educational level?	1.388	05	408	1.530	10.501
Job code	-.705	97	.494	.215	1.136
Are you a health professional?	.862	.244	2.369	.556	10.100
If you live in Tehran, in which district do you live	.147	53	1.158	.998	1.344
Who lives in your household besides yourself?	-.874	32	.417	.188	.927
Please assess your private financial situation over the past three months:	-.421	.374	.657	.260	1.660
How easy or difficult would you say it is to find the information you need related to COVID-19?	-.729	31	.482	.248	.936
How easy or difficult would you say it is to judge if the information about COVID-19 in the media is reliable?	.132	.540	1.141	.749	1.738
understand	-.105	.329	.900	.729	1.111
follow	80	.581	183	.816	1.438
Constant	9.598	58	14737.721		

To Understand Recommendations about when to stay at Home from Work/school, and when not to

Most of the people found it easy (30.4%). Out of 230 who were higher education, 77 found it easy (20.9%) and), and out of 15 who were elementary, 6 found it easy (1.6%), and they related positively significantly (P≤ 01).

To Understand Recommendations about when to Engage in Social Activities, and when not to

Most of the people found it easy (32.1%). Out of 231 who were higher education, 90 found it easy (24.5%) and), and out of 15 who were elementary, 2 found it easy (0.5%), and they related positively significantly (P≤ 01).

Most of the people who understand what to do if they think they have COVID-19 found it easy (37.6%). Out of 137 who decided when to engage in social easy, 61 found it easy (16.8%),3 found it difficult to "very difficult" (0.8%), and they related positively significantly (P≤ 01).

To Follow Recommendations about when to Engage in Social Activities, and when not to

Most of the people found it easy (29.9). Out of 230 who were higher education, 81 found it easy (22), out of 15 who were elementary, 2 found it easy (0.5%), and they related positively significantly (P≤ 01).

PaaKarri and Okan believed that "health literacy should be seen in relation to social responsibility and solidarity, and is needed from both people in need of information and services and the individuals who provide them and assure their accessibility for the general population" [8].

Most of the people who understand what to do if they think they have COVID-19 found it easy (37.7). Out of 137 who follow the recommendations about when to engage in social, 56 found it easy (15.4), 2 found it very difficult (0.6%), and they related positively significantly (P≤ 01).

The results of a study showed that self-care behavior scores are explained by health literacy and general health in COVID-19 patients [26].

Discussion

The outbreak of COVID-19 can be known as the latest global outbreak of viral disease, which is considered to be a disruption in the natural process of mortality, it has been consequences on social, economic, environmental, technological, political, and health. The World Health Organization called it COVID-19, which is a pandemic, and announced it as an extraordinary health situation. The method of transmission of COVID-19 and getting the disease among many people from society, and the increase in the mortality rate caused by it are the most important health, demographic, and social issues in the last two years that the country faced it. A survey study among samples of Iranian users of online social networks concluded that religious and cultural, political, cognitive, social, and emotional factors in Iranians' understanding of the risk of COVID-19 disease are effective [27]. In fact, it can lead them to contracting or not contracting Covid-19. Despite this, one of the most important variables to

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consider in discussions of infectious viruses, including COVID-19, is the health literacy index of a society's population.

Health literacy includes 5 sub-indices that measure a person's ability, information, and knowledge in the field of health. Studies show that the level of health literacy itself was related to social and demographic variables Such as gender, age, education level, economic and social base, and people's job fields [28-33]. In the current study, this issue is presented among the people with infertility referred to the Royan Institute between 18 and 76 years old using the survey method and the standard survey questionnaire tool. The findings of this research showed that about 68 percent of the respondents have been infected with COVID-19 at least once, and "understanding" and "following" mean levels were the same. However, "judging" mean levels were the lowest of a literacy level. Gender, educational level, household, and those who found the information, the only index of health literacy, have a statistically significant effect on the history of infection with COVID-19 [34]. This principle means that either the individual differences of people in terms of social, demographic, and economic variables in explaining the subject, or the level of literacy as the health of people in the society, is important. In accordance with the findings of this research, the importance of health literacy in the field of the spread of COVID-19 has been confirmed in previous studies [8, 35, 36].

Also, since the present study showed that health literacy can reduce the possibility of contracting the COVID-19 virus, this finding can be considered in line with the findings of other studies in Turkey, which showed that health literacy has a statistically significant effect on the use of the COVID-19 vaccine and subsequently it reduces the possibility of contracting COVID-19 [37] by considering how important is the future child for couple with infertility. A study in Punjab, India, has shown that health literacy among university students positively predicts their awareness and protective behaviors towards COVID-19 [38]. Students with health literacy are more aware of COVID-19 and have a higher probability of adopting health protection. The findings of the above study express the importance of health literacy in adopting protective behaviors when confronting to covid-19 and not being infected, which can also be considered consistent with the results of the present study. In this context, a study among university students in America has shown that both health literacy and e-health literacy were independently associated with overall compliance with primary preventive practices against COVID-19 [39]. This finding can somehow confirm the findings of the present study.

Conclusion

Previous studies have emphasized that countries should improve the health literacy of citizens, which can help people to reduce the risk of infection and understand the reasons for social responsibility and disease prevention [40]. Also, health officials and professionals should routinely report health literacy to assess the readiness of individuals and communities for any disease outbreak and strengthen the environment and public health policies. So, in the end, it can be concluded that in Iran, the effort to improve the level of health literacy of the society may reduce the incidence of COVID-19 and any other possible global disease in the future. Health and specialized training in this field can be helpful and effective.

Benefits in decisions related to policy making in the health system have not been assessed; the outbreak of COVID-19 showed that still necessary preparations should be made to deal with possible epidemics in the future. The results of this study showed that, on the one hand, by controlling the characteristics of people's background, health literacy is a significantly influential variable for contracting the COVID-19 virus, and on the other hand, health literacy of a small (11.2%) part of the population is at a very difficult level. Therefore, it can be said based on the results of this study paying attention to the education of the population, with an emphasis on promoting health literacy are essential in the health policy system and should be taken into account in policies related to the field of health.

Conflict of Interest

According to the authors of this article, there is no conflict of interest.

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The authors hereby express their gratitude to all participants in the survey of this study, and express their consent. This research is in the framework of studies with the code of ethics IR.ACECR.ROYAN.REC.140099 approved by Royan Institute.

Practical Implications

Improving health literacy helps reduce infection risk and fosters social responsibility officials should routinley assess literacy to prepare for outbreak. In Iran,boosting health literacy may lower COVID-19 and future disease incidence.

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Author's Contributions

Narges Bagheri-Lankarani: Conceptualization; Main contributor, study design, data collection, writing – original draft. Reza Omani-Samani: study design. Maryam Mohammadi: formal analysis, writing – original draft. Zahra Kazemi-Hajiabad: data collection. Zahra Ezabadi:data collection. Ahmad Vosough-Dizaj & Marayam Hafezi: review, and editing final version.

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Ethical Considerations

We ensure that all research conducted will respect participant confidentiality, adhere to ethical guidelines, and contribute to the academic community with honesty and integrity.

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