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The Role of Mass Media and Social Media in Developing Awareness of Self-Care Behavior against the Outbreak of Covid-19

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Abstract:

Background: One of the problems that human beings usually face are Crises and the spread of communicable diseases, and they occasionally appear in societies and make many problems with human beings. Human beings need ways to prevent or reduce its possible harms, one of which seems to inform and raise or improve awareness of self-care behaviors against such incidents through mass media and social media. Therefore, this study aimed to survey the role of mass media and social media in developing awareness of self-care behavior against the outbreak of COVID-19.

Methods: In this descriptive-analytical and cross-sectional study, 500 samples taken based on Morgan and Krejcie's table as the participants, using the sampling convenience method. The data were collected by a researcher-made questionnaire, with two parts of demographic information and research questions, after considering and evaluating its validity and reliability. The data then were analyzed using descriptive and analytical statistical tests by SPSS-20 from Mar. 29/2020 to Apr. 09/2020 in Gonabad City.

Results: In terms of frequency, 53% were men and 47% were women. The participants were familiar with both mass and social media, but the use of the participants from mass media (5.3) was higher than that of social media (4.8), and vice versa in comparing in getting information and awareness, mass media (3.01) was lower in comparison with social media (3.2), as the participants said. Both of media were important in changing people's self-care behaviors, although with a small difference, mass media ranked higher than social media and other resources, and this behavior change was shown higher in women (257.6) than in men (232.8). (P-value 0.040)

Conclusion: According to the results, those in charge of the issue and the relevant managers in crises and the spread of diseases should make full use of the capabilities of these information sources and raise self-awareness with proper knowledge of the media, purposeful and optimal planning. In this way, they would keep the society away and maintain it from possible harms and dangers mostly in crises and global challenges.

Keywords: Social Media, Mass Media, Awareness, Prevention, Crisis Intervention, Outbreak, COVID-19

Introduction:

Viral diseases continue to occur and are a serious problem for public health and the health of individuals and communities. In the last 20 years, several viral pandemics, such as the acute respiratory syndrome coronavirus (SARS-CoV), have been reported between 2002 and 2003, and the H1N1 flu in 2009. MERS-CoV Middle East Respiratory Syndrome was identified first in 2012 in Saudi Arabia¹. In the period leading up to today, an epidemic of unidentified (mild) respiratory infections in Wuhan, China's largest urban area in Hubei Province was reported first to the World Health Organization's China office on December 31, 2019. Because they were initially unable to identify the causative agent, the patients referred were classified as "pneumonia patients with an unknown cause" Then, On February 11, 2020, WHO Director-General announced that the new coronavirus was a "COVID-19" virus, which stands for "Coronavirus 2019" (Cascella et al., 2020). According to studies and evidence, the Covid-19 virus is highly contagious and has a high global spread rate. At the International Health Law Meeting (IHR.2005) on January 30, 2020, the spread of the disease through WHO was announced as a matter of urgent public health concern, as it was disseminated to 18 countries through four countries from human-to-human contact(Cascella et al., 2020). At present (April 2020), along with the pandemic of COVID-19, there is a need to inform and raise awareness on this disease among different segments of the population in different communities due to lack of knowledge and prevention, control and treatment for self-care and self-controlling of people that is a significant matter.

People and communities in the affected communities should learn to protect themselves from the potential dangers and harms of the spread of this mysterious and unknown novel virus. So accessing health information, health education messages, health education, awareness of prevention, and choosing a healthy lifestyle with people helps against the coronavirus harms. Then, supporting society's access to health information will change the philosophy of disease prevention, control, and treatment, leading to the national development of health (Adeyoyin & Oyewusi, 2015).

Today, the issue of self-awareness of the issues related to people's health is considered as a necessity and literacy of people's health, which is the right of a citizen in any society. Searching for health information is a method that many people use as a tool to deal with and reduce stress. Increased incidence of specific diseases, insufficient knowledge, and limited time spent by health care professionals on patients are among the factors that motivate patients to seek health information about themselves and their illnesses, apart from formal care centers (Okhovati et al., 2016). Today, medical information is increasingly available, and people are increasingly playing a role in managing their health (Rains, 2007), as well as the need for health information and content information has increased worldwide in recent decades, and this information has often changed the behavior and decisions related to people's health (Cutrona, 2015; Wilson, 2009). Research results show that people who live with a specific disease, and even caregivers and their companions use information resources other than their physician to search for health information (Courtenay-Quirk et al., 2010).

Studies also show that people and researchers today use the Internet and the Web to search for their health information (Okhovati et al., 2016, Bigdeli, Azimi & Zare, 2010; Tennant et al., 2015; Chen et al., 2018). Information seeking increase can be largely due to, 1) the high frequency of online information resources (Metzger & Flanagin, 2011), decision-making assistance (12) and the

breadth of the Web 2 health programs (Adams, 2010), and 2) the increasing prevalence of diseases in society (Donald et al., 2011) and 3) learning and access to information technology in people's daily lives (Chen et al., 2018, Alpay et al., 2004). In this regard, Riahi et al. (2016) in his study concluded that consultation with family, friends, and others is one of the most important channels for obtaining information about the health of immigrants in Iran.

People who used the Internet to search for health information also preferred to search for their health information through search engines such as Google or Yahoo, due to the ease of use and access to up-to-date information (Okhovati et al., 2016; Gavvani, Qeisari & Jafarabadi, 2013). Studies also emphasize the important role of print resources in increasing the health awareness of individuals and researchers (Coffman & Norton, 2010). In a study, Barker (2011) showed that rural women in Malaysia mainly use mass media such as newspapers, magazines, television, and radio for getting information on their health.

In another study, Gavvani et al. (2013) showed that the most important sources for searching the health information of users of public libraries in Qazvin, a city of Iran, are "television" and "consulting with others". Lajoie et al. (2009) showed that students often get their information from friends and then the media, especially from the Internet. Dart, Gallois & Yellowlees (2008) has also shown that health-related information resources, used by different social and economic strata, are different. People with lower socioeconomic status are more likely to watch television, and the educated are more likely to use the Internet as an information source, in the field of health and prevention .

Dastani et al. (2019) also showed that students in search of health information refer more to Internet resources, especially websites and Physicians, especially specialists and subspecialty physicians. They, then, search social media, national media, and then print sources, respectively. Hernández-García and Giménez-Júlvez, (2020), reviewed the websites, providing Covid-19 prevention protocols, the results of which showed that the prevention information on the websites was not based on WHO prevention recommendations and different information is provided on these websites.

Given that people today are increasingly exposed to excessive information from digital channels and devices, such as television and mobile technology, determining how they develop their information retrieval skills and how their cognitive tendencies affect the search for information is of the great importance (Jean et al., 2015). Health information and receiving health messages seem one of the most important and fundamental things in promoting personal and social health and behavior change of self-care against the potential dangers and harms of a crisis and pandemic. This study was to survey the role of mass media and social media in developing self-care awareness against the outbreak of coronavirus (Covid-19) to change the people's self-care behavior in Gonabad city.

Methods:

In this analytical, cross-sectional study, the necessary articles and resources were surveyed by searching databases on the relevant topics. The related topics were such as crisis and communication management fields, and the impact of mass media, social media in a crisis, the spread of disease, information on Covid-19 novel virus, and those reporting knowledge and aware of self-care behaviors, or everywhere that could have information for researchers in the same

fields. In addition, through reviewing and using related keywords, and on the other hand by examining the list of information resources and searching for related articles in this field after reviewing texts and literature related to the subject, the necessary resources were selected.

In the next step, after reviewing and studying the related information resources, a two-part researcher-made questionnaire was designed to collect data. The validity of the questionnaire was approved by several experts and its Cronbach's alpha coefficient for reliability was calculated ($\alpha=0.891$). This two-part questionnaire was related to the demographic information of the participants and the main research questions. The questionnaires were uploaded on local Telegram Channels of Gonabad city, with about 30,000 members, being active and working in the period of 10 April 2020 to 20 April 2020 (10 days), which were randomly selected and determined. Then, with the permission and the consent of the Admins of the said channels, the questionnaires were uploaded officially that were legally approved by the ministry of culture and Islamic Guidance of the Islamic Republic of Iran.

According to Morgan & Krejcie Table, 380 samples were calculated from the members and audiences of the 5 local telegram channels in Gonabad city through the sampling convenience method. The desired and final samples or participants considering missed questionnaires (500), in the 5 channels mentioned, completed and returned the questionnaires back on time. The collected and received data were reviewed, recorded, analyzed and compiled. The questionnaires had 33 questions, some of which had options with a 5-part Likert point, which were prepared with Pors-Line website application (Survey.porsline.ir), which is a standard Iranian online website. The questionnaires then were uploaded with the consent and permission of loading in the said 5 local Telegram channels of the city, and after the completion of the registration, it was recorded and implemented so that it could be prepared for the next steps or analysis.

The items in these variables were in the 5-part Likert range (too much, much, little, too little, at all), and in some cases, the questions were asked with items with the option of prioritizing the media and how they performed in comparison to each other. The questions were on the field of media familiarity, membership, and the extent of their use, the level of accessibility, their difference in speed, accuracy, the level of awareness of the media and their difference from each other. Media acceptance and its confidence, daily use of them in general and their ability in communicating with each other and prioritize in terms of information and awareness, information and educational performance based on the purpose of the research were also included in the questionnaire.

To analyze the data, 5-part Likert research questions were scored from 1 to 5 (5 for the highest score or "very much" option and 1 for the lowest score or "very little" option, and their mean was calculated and considered for each item separately). We also used SPSS-20 software and the necessary descriptive statistics and Friedman's analytical tests, and due to the abnormality of the self-care score on mass media and social media ($P < 0.05$) Crosstal-Wallis test was used to compare mass media and social media in self-care behavior with participants' general variables and one-way analysis of variance. Necessary ethical principles, the confidentiality of information in the research were fully observed and the necessary and required information was provided to the participants to participate and complete the questionnaires. We conducted the plan after approving by the Vice-Chancellor for Research and Technology and final approval of the relevant field in the University with Ethical Code: (IR.GMU.REC.1399.004) date: 2020/03/25.

Results:

As the results showed, the age and the participants' level of education is shown in Table 1 as follows. 53 percent of the participants were men and 47 percent were women. The age of the participants and their level of education in this study is also shown in Table 1

Table 1: The age and the participants level of education

		Frequency	Percentage (%)
Age	Under 20	47	9.4
	21 – 25	52	10.4
	26 – 30	70	14
	31 – 35	96	19.2
	36 – 40	91	18.2
	41 - 45	51	10.2
	46 – 50	39	7.8
	51 – 55	24	4.8
	56 -60	12	2.4
	More than 60	12	2.4
	Unknown	6	1.2
Education Level	literacy campaign	1	0.2
	Elementary school	2	0.4
	Middle school	20	4
	High school	25	5
	Diploma	100	20
	Associate	43	8.6
	Bachelor	180	36
	Master's	85	17
	Ph.D. & Postdoc	44	8.8

Table 1 shows the age and the level of the participants' education from age 20 to over 60 and the level of their education from literacy campaign to Postdoc. Below is the average of the participants' acquaintance with mass media and social media, which is shown in Table 2.

Table 2: The familiarity of the participants with mass media and social media

Media	Triable	Mean	Std. deviation	Min.	Max.
The familiarity of the participants with mass media		4.020	0.8105	1	5

The familiarity of the participants with social media	4.026	0.8592	1	5
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The information in Table 2 shows that the participants were well acquainted with both media, although this familiarity was somewhat higher with social media than with mass media. It is noteworthy that the greater level of familiarity whether was a reason for more use or not, merged another question, which is discussed in Table 3.

Table 2 shows using mass media and social media around the clock by the participants, as well as the use of these media to obtain information about self-care behavior against coronavirus.

Table 3: Mass media and social media usage per day

	Mean (Hours/day)	Std. deviation
Mass media usage	5.332	3.7509
Social media usage	4.894	3.5325
Intake of the participants' self-care awareness Information against Coronavirus outbreaks from the mass media	3.01	3.596
Intake of the participants' self-care awareness Information against Coronavirus outbreaks from the social media	3.246	3.6544

The results, in Table 3, showed that, although the level of familiarity, (Table 2), of the participants with social media was higher than the mass and traditional media. It seems, oppositely, that the rate of using them did not follow this rule, and the participants in terms of using media used and benefited more from mass and traditional media (5.332) versus social media (4.894). However, when it comes to obtaining information and awareness, the issue is different again, and social media (3.246) is ahead of its rival (mass media and the public media) (3.01), which in itself indicates close competition and different types of media capabilities. To know how the participants received self-care information about coronavirus, Table 4 also was designed to show the following data.

Table 4: The average intake of the participants' self-care awareness Information against Coronavirus outbreaks from different sources

	Mean	Std. deviation
Intake of the participants' self-care awareness Information against Coronavirus outbreaks from the mass media	3.751	0.9569
Intake of the participants' self-care awareness Information against Coronavirus outbreaks from the social media	3.843	0.9000
Intake of the participants' self-care awareness Information against Coronavirus outbreaks from the friends and acquaintances	3.008	1.0676

Intake of the participants' self-care awareness Information against Coronavirus outbreaks from the Physicians and specialists	2.901	1.1963
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The information in Table 4 indicates that participants obtained the most information for self-care behaviors against the coronavirus from social media and then mass media, followed by friends and acquaintances, and finally physicians and specialists, who could have many different reasons. It is now necessary to examine whether receiving information from different sources has changed the self-care behavior of the participants and in case of a positive response, which media or information source has had more or higher impact on the participants, for which Table 5 was compiled.

Table 5: Friedman test results for comparing self-care behavior change on mass media and social media

Group	Mean	Chi-square	df	P-Value
Mass media	1.51	0.391	1	0.532
Social media	1.49			

Friedman's test results in Table 5 showed that there was no significant difference between the role of mass media and social media in changing the participant's self-care behavior ($P > 0.05$). Both media were important in changing the participant's self-care behavior, although, with a slight difference, mass and traditional media ranked higher than social media and other resources.

Due to the abnormality of the self-care score on mass media and social media ($P < 0.05$), the Crosstal-Wallis test was used to compare mass media and social media in self-care behavior with the general variables of the participants. Table 5 shows that due to the significant presence ($P < 0.05$), the role of mass media and social media in changing women's self-care behavior is more and women pay more attention to them.

Table 6: One-way analysis of variance comparing the role of mass media on participants' self-care behavior in terms of gender

Media	Group	Mean Rank	Chi-square	df	P-Value
Mass media	Male	232.87	4.227	1	0.040
	Female	257.65			
Social media	Male	230.90	4.041	1	0.044
	Female	254.83			

Table 6 shows that in terms of comparing self-care behavior between women and men by mass media and social media, both media have influenced behavior change, but with some difference that this difference has been greater in women than men. Both types of information media have been able to have a greater impact on women than men in changing their self-care behaviors and women have been more influenced than men in this field have.

Discussion:

According to the results and the aforementioned findings, the results of this study showed that the level of familiarity of the participants with mass media and social media was equal. Although, the average usage of mass media was higher than social media during day and night, but the use of social media to obtain information about the coronavirus, was higher than mass and traditional media. This can be for the reason for the level of their accessibility, interactive and multifaceted nature, non-governmental, special news and information effects, more speed and other reasons against mass or traditional as one-sided governmental media with a non-flexible framework.

In general, both mass media and social media play a major role in changing people's self-care behavior. Toosi-Razavi et al. (2013) showed that the people of Tehran watched television for an average of 3 hours and 20 minutes a day and almost all of them consider television as one of their priorities for receiving health messages. However, because of the growth of social media, the increase of information channels in the context of these media, and the increase in its use during the day and night, the method of obtaining health information and awareness about it has also changed over time.

Studies have also shown that self-care and treatment (Gray) and decision-making on how to deal with illness (Bigdeli, Azimi & Zare, 2010) have been important goals in seeking health information that is consistent with the findings of this study. Okhovati et al. (2016) also showed that people preferred to search for their health information through modern methods such as Google search engines due to the ease of use and access to up-to-date information than the traditional way of referring to books and libraries. Tennant et al. (2015) showed that 90% of respondents used Web 2 such as Facebook, Twitter, etc. to find their health information.

Dastani et al. (2019) also showed that students tend to search their health information more from accessible websites and social media than for traditional and print sources, which confirms the results of the present study, as well. Recent studies have also shown that the search behavior of health information and the resources used in it differs in different groups and segments of the population²⁰ and with the characteristics of gender, age, education and training (Longo et al, 2010; Broom, 2005; Cotten & Gupta, 2004, Lowrey & Anderson, 2006) that is consistent with the results of the present study and confirms it.

Ashrafi Rizi and Kazempour (2020) stated that media professionals and medical librarians, due to having the necessary knowledge and awareness about information production and publishing infrastructure and familiarity with information typology, can play an important role in finding the best behavioral model for a deal with crises. In addition, in the field of prevention, information literacy training and health literacy, and explaining appropriate behavior in times of crisis are other measures that media professionals and medical librarians should consider. Finally, educating people to discern credible information from unreliable information will be one of the most important steps taken by librarians and educators in the face of crises. Hernández-García and Giménez-Júlvez 2020 suggest that users refer to reputable and official websites such as the World Health Organization, (WHO) for preventable measures against COVID-19.

The results of the present study showed that mass and social media seemed as the main sources of self-care information for searching at the time of the outbreak of coronavirus. Therefore, the people might continue to refer to them for necessary information since these media played an important role in the prevention, control, and treatment of diseases and the promotion of people's health and decision-making of how to behave.

Gaining health information through social media may have several benefits in changing self-care behavior, including a better understanding of the disease, people's involvement in maintaining health, and active and preventive response to health problems. It is worth mentioning that each media has its capabilities and its audience, and these can be complementary and have news and information overlap and manage it, if they are well managed and supported and have a framework considering being free for news broadcasting and awareness and to be independence.

Conclusion

It seems that one media attracts audiences more than the other one. In general and by examining and criticizing the media and their characteristics in special and critical situations, effectiveness, efficiency, and reduction of media costs in a certain time and place can be a good choice to persuade the society with the necessary news and information. Mass and social media can be a right and friendly help for the people in reducing their stress, strain, anxiety, fear. They are also to provide the necessary and appropriate training in appropriate ways, at the right time and place, in a right method to the people and the society to promote and be diligent in developing the health of the community and not to spare any efforts.

Therefore, it is necessary for the relevant institutions and organizations, especially the Ministry of Health and the Universities of Medical Sciences, to respond appropriately to hold training courses on recognizing channels for obtaining valid medical and health information and promoting the health literacy of individuals and different segments of society. It also seems necessary to launch a single channel on social media to inform people about self-awareness and self-care behaviors against the spread of coronavirus.

Compliance with ethical guidelines

This research was reviewed and approved by the Ethics Committee in Gonabad University of Medical Sciences (Code: IR.GMU.REC.1399.004.)

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Authors' contributions

All authors contributed to designing, running, and writing all parts of the research.

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Conflict of Interest

No conflict of interest is here.

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