# The Role of Information Management in the Process of Digital Health Confrontation with Covid-19

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## ABSTRACT

In critical situations, the capacity of human thinking decreases, and lack of time aggravates the severity of the crisis. In such a situation, providing quality information is a hard task that would never accomplish undoubtedly without the help of information and communication technology. This study aims at reviewing how to prevent infodemic using information management and digital health. To achieve this goal, the reports and suggestions of international organizations such as the World Health Organization, UNICEF, as well as the experiences of some countries in managing covid-19 were studied. There is a framework that includes a five-step process for managing infodemic, which includes: identifying evidence, translating knowledge and science, amplifying action, quantifying impact, and coordination and governance. UNESCO, in particular, has tackled the spread of false information through the provision of Open Education Resources, networks of fact- checkers, and the provision of media and information literacy resources. It has also used digital technologies such as artificial intelligence to combat the existing pandemic in response to the crisis. Meanwhile, Countries have behaved differently in terms of controlling infodemic. Gathering reliable information and identifying fake news, monitoring the activity and content of social media, educating people on how to use social media and avoiding spreading rumors, false information, and news, creating a system of collecting data from people, and distributing reliable information from the government (which is considered as a system of data exchange and reliable information) are among the important measures taken by the governments of successful countries in managing the crisis of Covid-19.

## Introduction

A successful decision, under normal circumstances where the capacity of human thinking is normal, depends on the ability to analyze, quality information, accuracy, and focus. However, in critical situations, the capacity of human thinking decreases, and lack of time aggravates the severity of the crisis. In such a situation, providing quality information is a hard task that would never accomplish undoubtedly without the help of information and communication technology. Information management, on the other hand, is the process of collecting and processing data in order to provide quality information. The role of this process becomes more prominent with the help of information technology and it operates successfully in critical situations [1,2]. The purpose of this study is to review how to prevent infodemic using information management and digital health.

## Background

With the outbreak of the SARS viral pandemic in 2003, human society faced a phenomenon called Infodemic and has been living with this phenomenon along with the persistence of viral

pandemic diseases such as MERS and COVID-19, COVID-19. The infodemic, introduced by the United Nations and the World Health Organization on March 31, 2020, following the SARS Cov-2 crisis, has cast a frightening shadow over human society [3,4]. Infodemic is literally a portmanteau. In fact, it consists of the words information and epidemic and means the universal spread of true and false information about any phenomenon, including disease. In this case, rumor and fear are intertwined so inextricably that complicate learning a subject. This concept itself includes two concepts, namely misinformation, and disinformation. Misinformation is false information about a subject, regardless of its being intentional or unintentional. Moreover, disinformation refers to misleading or false information that is deliberately provided to deceive the audience. Historically, the term has been coined and used by some countries' security agencies to deliberately diffuse misleading information about the military, which is sometimes propounded to boost military power [5,6].

The bitter and costly experience of coexistence with viral diseases has clarified it for human society that in order to ensure its national security it needs to equip and rehabilitate health care professionals more than equip and reorganize its military [7]. In addition, the utilization of information and communication technology provides considerable preparation for the management of future pandemic-viral diseases due to the nature of pandemic-viral diseases that can be managed by observing the principle of physical distance. On the other hand, the nature of information and communication technology is such that makes it possible to track patients and provide remote health care services to people at risk [8]. Noteworthy to mention is that digital health can not only facilitate the management strategy and response to pandemic diseases, but also can curb and manage the annoying phenomenon of infodemic, which severely increases the conditions caused by the outbreak of Covid-19 based on educational and informational application [9,10]. The application of digital health (which is actually e-health with a greater focus on health) can facilitate the management strategy and response to pandemic diseases. This perspective provides a framework for the use of digital technologies in the management and response to pandemics. It also presents the methods that successful countries in using digital technologies have adopted and implemented for the planning and management of pandemic diseases, including surveillance, screening, triage, diagnosis, monitoring, contact tracing, and health care [11].

## Results

### The Necessity for Information Management in a Pandemic Crisis

In October 2020, The British Academy and the Royal Society both made an announcement about the infodemic phenomenon that the spread of Covid 19 vaccine would confront a flood of misinformation that would fill the knowledge void. They believe that the existing infidelity has five features including distrust of science, distrust of pharmaceutical companies and the government, spreading outspoken words, using emotions, and expanding echo chambers. For this reason, the Singaporean government has praised the action of the Penal Code (POFMA) on natural or legal persons who spread lies [12]. It is noteworthy that some countries, such as China, India, Singapore, and South Africa, have enacted punitive laws against individuals, organizations, sites, and social media outlets that have intentionally or unintentionally published false information about the Covid pandemic. Other countries such as Taiwan, South Korea, and Switzerland, demonstrated their commitment to democracy and the free flow of information through interaction with and with the help of the people and managed the destructive phenomenon of infodemic. In the meantime, some countries, like the United Kingdom, acted in a double standard [13-19].

The various thematic areas plagued by the pandemic of false news include the cause of the disease, misleading statistics about its prevalence and casualties, the economic effects of the Corona crisis, journalism and their discrediting; medicine (symptoms, diagnosis, and treatment), society, and social beliefs (Panic), politicization (discrediting the politicians), Internet scams, and personal life of celebrities [20]. Since 2003, some countries have gained experience in controlling infestations, preventing the circulation of false information, and strictly monitoring all social media in the country, by undergoing the outbreak of SARS and the vigilance of the pandemic. They have managed the flow of data and information from both the people and the government (a health system), and in fact, by consolidating the digital health and information management, they have been able to prevent the problem of infodemic and the spread of fake news and rumors into the society. International organizations have taken effective actions to counter the destructive effects of spreading lies, public ignorance, and the lucrative activities of some social media. Among them, the World Health Organization has introduced a framework that includes a five-step process for managing infodemic, which includes: identifying evidence, translating knowledge and science, amplifying actions, quantifying impact, and coordination and governance [21].

UNESCO, in particular, has tackled the spread of false information through the provision of Open Education Resources, Networks of fact-checkers, and the provision of media and information literacy resources. It has also used digital technologies such as artificial intelligence to combat the existing pandemic in response to the crisis [22]. What follows is a more detailed description of the framework provided by the World Health Organization for the management of the infodemic phenomenon. At the stage of identifying evidence, all scientific findings that can have a positive effect on the health of individuals and the society should be collected, examined, and

evaluated. False and misleading information also needs to be identified in collaboration with international organizations such as the World Health Organization. Governments and public health institutions are responsible for the circulation of accurate and quality information in society since they are trusted by the people. The government is obliged to check the contents of social media through the relevant and designated institutions and identify all fake news and false information.

In the translation phase of science and knowledge, health authorities should translate their scientific messages into simple and general language and into practical messages that change behavior in a way that can be easily used by everyone so that all classes of the people and even its politicians understand easily. This makes the community trust the health authorities. Cultural bias should be considered and applied to the content of the message. Local and ethnic translation is also required. The step of strengthening the action is done at the national level aiming at building trust and disseminating the right information to the right people at the right time. The government must optimize the use of social platforms through reputable and approved agencies and use all necessary media, including text, video, and infographics. Frequent and accurate messaging in culturally friendly formats is essential. Also, the timely correction of incorrect information and, if necessary, the use of the method of denial should be considered. Governments and other relevant actors need to reach out to key communities to understand their concerns and information needs, and it is best to provide advice and messages that can help these communities identify their audiences. Through this process, communities of any kind, whether religious, professional or etc., can reinforce appropriate public health messages in a way that is user-friendly leading to correct changes in behavior.

Active contacts and dialogues should be established with private sector employers, telecommunications companies, the food and agriculture sector, religious or humanitarian charities, medical and health professional associations, and the media. Community health workers, the first line of health care in many low-resource environments, must be equipped with the right information, graphics, and narrative to mobilize in communities. Strategic partnerships with the social media platforms of technology platforms and stakeholders, as well as universities and civil societies, all of which reinforce and monitor information, are also needed. Through strategic partnerships with health authorities, these platforms can prioritize and prioritize relevant information and advice, ensuring that it is seen by citizens. In the quantifying impact phase, it is necessary to collect, organize and analyze data with the participation of all key institutions to help measure and describe the information epidemic. In addition, the process of

managing fake news and social media as well as the circulation of accurate and quality information and the impact of messages and interventions should be pursued.

The coordination and governance phase emphasizes the principle of public participation and the need to continue monitoring all activities. To achieve this important coordination between stakeholders including the World Health Organization and its member countries, scientific and public health institutions, telecommunications companies and private communication institutions, government communication institutions, search engines, civil society, universities, and academies, health care workers on the front lines, and all institutions to the lowest level of local mutual support groups are required [22].

## Conclusion

Some countries, being Prudent and informed about global issues, understood the outbreak of newfound pandemic-viral diseases and the possibility of their continuation and have tried to improve their digital technologies and focused on digital health which is based on using smart phones since 2003. The use of digital technologies as well as digital health in critical outbreaks of pandemic diseases that require physical and social distance is a smart and successful plan to manage the disease. On the other hand, in addition to paying attention to the recommendations of international organizations such as the World Health Organization and UNESCO, these countries have opposed the publication of false news by creating a mechanism for the exchange of accurate data and information that is in the cycle of society and government, as well as implementing methods based on ICT.

Some countries have controlled the phenomenon of infodemic by enacting punitive laws on spreading lies about the pandemic disease, and others by interacting with the people and preventing the situation from escalating. Gathering reliable information and identifying fake news, monitoring the activity and content of social media, educating people on how to use social media and avoiding spreading rumors false information, and news, creating a system of collecting data from people, and distributing reliable information from the government (which is considered as a system of data exchange and reliable information) are among the important measures taken by the governments of successful countries in managing the crisis of Covid-19.

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