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Designing a Database based on Medical Staffs' Experiences: Commentary on COVID-19

Somayeh Panahi[1], Hasan Ashrafi rizi[1*]

[1] Medical Library and Information Science Department, Health Information Technology Research Center, Isfahan University of Medical Sciences, Isfahan, Iran

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***Corresponding Author:**
Hasan Ashrafi rizi
Medical Library and Information Science Department, Health Information Technology Research Center, Isfahan University of Medical Sciences, Isfahan, Iran.

Email:
hassanashrafi@mng.mui.ac.ir

Tel:
+98-9132365178

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Introduction

COVID-19 is considered to be one of the crises that occurred at the end of 2019. It seems that the chain of crises never ends, and the occurrence of events is unavoidable. Normally, declaring an emergency for the hospital's medical staff is the first reaction from the health authorities in each country concerning all crises. Thus, the medical staff will start their activities to rescue, transfer, hospitalize and release of the injured people. According to health regulations, the surveillance system must promptly expand its activity based on crisis recognition, including the continuous and regular collection of data related to public health, aggregation, analysis, and assessment of the health status (1). A common element of crises is the lack of time to make accurate and timely decisions (2). Although some commentators believe that the social nature of COVID-19 is different from other crises (3), the experience gained from other crises can be useful. World Health Organization (WHO) has currently faced a major challenge in confronting COVID-19. So, their only reference to deal with this crisis is using previously recorded experiences about other similar coronaviruses, such as Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome(MERS) and some of the published information from other countries involved in the crisis. There is some documentation available in databases,but the vast experience of medical staff has been neglected. There is a chance that each medical staff had valuable experiences that would be forgotten over time. Indeed, medical staff is one of the main groups involved in dealing with the

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crisis and certainly gain much experience in this area. Therefore, health practitioners can use the experience of medical staff as tacit knowledgerepositories to manage crises during them or in case of facing future ones because their experiences are considered as primary information sources.

In this regard, in order to reduce the extent of damages, costs, and human casualties, the approach of recording and sharing their experiences should be taken into consideration at the national and even global levels. Authors have tried to address this important topic as well as the features of this database to encourage health managers to design it and to encourage medical staff to record and share their experiences.

Materials and Methods

Proposing current topics regarding a particular topic is one of the main features of commentary. At the same time, the authors of these types of articles intend to speculate the subject's future direction and try to attract other researchers' attention to the topic (4). Accordingly, the authors of this commentary believe that the medical staff spent hours in close contact with patients, so their experience can be valuable and authentic. The authors suggest designing a database to maintain medical staffs' experiences and to help during the crisis. Throughout this study, the authors followed the main features to develop a database.

Designing a database based on medical staffs' experiences

Designing a database based on the experiences of the medical staff regarding the crises as well as other epidemics or pandemics is suggested in order to synergize the experiences of medical staff and reduce the damage of the next crises. The main framework for this database can include the following features:

- Possibility of accessing the database by medical staff (this may especially include physicians, general practitioners, nurses,and health professionals) in order to record their experiences or biographies consideringtheir privacy;
- Providing patients' access to the recorded data in the database based on the experiences of medical staff;
- Recording the Minimum Data Set (MDS) about the experiences of the medical staff (including the date of first symptom onset, the main complaint, the cause and duration of hospitalization, as well as other information about the effectiveness, disorders or side effects of drugs, etc.);
- Providing Frequently Asked Questions (FAQ) to encourage medical staff to record relevant experiences;
- Assigning a universally unique identifier for each medical staff (to prevent duplicate recordingthe data (noise) and future research);
- Providing the possibility to suggest new research topics to researchers;
- Using Internet of Things[1] (IoT)applications in database designing in order to communicate between medical staff and researchers, collect medical data quickly, discover medicine, increase treatment options, reduce costs through remote monitoring (5);
- Including Artificial Intelligence (A.I.) in the design of the database to achieve opportunities such as data mining and data analysis, as well as the possibility of content analyzing and reporting to health professionals (6).

Conclusion

Decision-making based on the medical staffs' experiences, as well as the scientific evidence, can be more reliable and even psychologically soothing for people in crisis, which is evidence-based medicine. For instance, in the global crisis of COVID-19, a large number of medical staff around the world contracted the disease. After recovery, they shared various experiences of their illness, including the cause of illness, the history of the illness, the length of hospitalization, the period of recovery and quarantine at home, as well asmany other symptomsthrough cyberspace (in the form of

[1] The Internet of Things in general refers to the objects and equipment of our environment that is connected to the Internet and can be controlled and managed by applications available on smartphones and tablets.

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manuscripts, audio, video calls, etc.) with people all over the world. Since the medical staffs'narration of their disease experiences is often in the form of a detailed diary, including the date of first symptom onset, the main complaint and the causes of the patients' referring to the clinic or hospitalization, as well as other information about taking medications and their results and effectiveness of each medication is presented with precise and clear medical terms. Therefore, the medical staff and the general publictried to follow or implement their recommendations if the source of those experiences was reliable. Indeed,the experiences of the medical staff as a physician and sometimes as a patient will be very valuable and instructive. In general, what has been neglected in the scientific platforms may be the recording of the tacit and implicit knowledge of experienced professionals. Finally, suggestions for designing a specific database in order to record and share experiences regarding pandemic diseases such as COVID-19 is a response to some of the health system's concerns for crisis management; because this database can help to share, to process the information and to make better clinical decisions in future crises as compared to all other medical's platforms such as the Ministry of Health, Treatment and Medical Training which is a website providing general health information to various groups. The information on this website is mostly based on public and executive decisions in the field of health care. However, the proposed database is the result of the staffs'experience who got involved in a crisis. In addition to their obvious knowledge, their tacit knowledge should be recorded based on the desire of the relevant experts. These experiences have never been stored on the website. At the same time, all kinds of reporting and analysis are possible in databases, while on the website, such a possibility is not accessible. Besides, database audiences are often experts in various fields, while websites usually have a general audience. Indeed, evidence-based medicine output, which is the most important method in patients' diagnosing, treatment and rehabilitation,is nothing more than a combination of scientific evidence, the experience of the physicians and other colleagues, and attention to patient values. The proposed database will respond to the medical staffs' needs for accurate and timely decision-making, so designing and launching this database is recommended to the Ministry of Health and Medical Education (in Iran), as well as the World Health Organization (WHO).

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