

Evaluating the Reliability of COVID-19 Messages from Health Care Providers via the Line Application in the COVID-19 Situation

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Abstract

The COVID-19 infection is a new disease which has spread to all countries of the world. People are worried and concerned about this disease. Thai people regularly send news or messages to their relatives and other people by social media, especially the Line application. Health care providers also influence their patients' behavior through such messaging. To evaluate the reliability of the COVID-19 messages from health care providers via the Line application and assess the factors that influence the reliability of the messages. A quantitative cross-sectional study was conducted on 99 health care providers in a Thai government hospital. Data were collected using face-to-face interviews. Each interviewee was asked to evaluate 3 COVID-19 messages which they had sent to other people on the Line application. Each message was evaluated for reliability which was assessed based on the criteria of existing web-based evaluation services. Descriptive and logistic regression analysis were performed using the R Program. The prevalence of the participants with 3 high reliability messages was 15.15%. In total there were 297 messages of which only 122 met the criteria for reliable messages (41%). The participants with reliable messages had a significantly higher rate of sending messages from news updates than the other groups. There are many messages on social media, and health care providers need to learn about the reliable messages and consider their impact on others before they make the decision to send messages to others or believe these messages.

Keywords: Health care providers; message reliability; COVID-19; Line application; social media.

1. Introduction

Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus. Most people infected with the COVID-19 virus will have mild to moderate respiratory illness and recover without requiring special treatment.

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The best way to prevent and slow down transmission is washing your hands or using an alcohol-based rub frequently and not touching your face [1]. There are now several vaccines in use and there are different types of potential vaccines for COVID-19 including inactivated or weakened virus vaccines, protein-based vaccines, viral vector vaccines and RNA and DNA vaccines [2]. There are weekly operational updates and a COVID-19 Dashboard on the WHO website to show the rising number of confirmed infected patients around the world [3-5]. Many websites recommend credible or reliable websites to people searching for and updating the COVID-19 situation [6-8]. The official Thai government response websites from the Department of Disease Control and Ministry of Health provide support and updates to the Thai people on this pandemic¹ [9] and we also have Facebook for COVID-19 [10].

Online health information is one of the best choices to encourage people to learn about the disease by themselves. The age groups 35-49 years and 50-64 years trust in online health information. People aged 65 years or older also trust in online health information no matter how hard the information is to locate and to understand [11]. Social media users need to pay attention to information credibility because online rumor may cause serious harm to individuals and society [12]. Although there are many websites offering advice to their users about detail to realize and believe articles [13-16]. There is yet no medical guideline to advise citizens about specific social media applications. There are a lot of applications which can be used to contact other people and the Line application is one of the most common applications in Thailand. Most people can both send and receive messages, files, photos and videos using this application [17-21]. The health literacy of older Thai people is limited [22]. Health care professionals have a responsibility to realize that a patient's medical decision making may be influenced based on online health information [23] and that patient's internet health information can affect their physician's and other health professionals' work [24]. Most patients trust in their health care providers [25,26].

In 2020, COVID-19 spread in Thailand, and many Thai people have been concerned about transmission, severity, and treatment of this disease, and possible vaccines, because it was a new infectious disease with no certain guidelines to give them information. Health care providers, patients and other people sent, received and shared a lot of both incorrect and credible messages via social media, especially the Line and Facebook applications. Some content caused people to be misinformed and become concerned about the COVID-19 infection because of the fake news.

2. Methods

This quantitative cross-sectional research was performed in a government hospital with 99 health care providers. An interview questionnaire was used following a pilot test. The doctor checked the reliability and the quality of the questionnaire before data collection began. It was used to collect data on the sociodemographic characteristics and details of Line messages involving COVID-19 news sent and received by the participants and evaluate the reliability of the shared COVID-19 messages. The questionnaire was prepared in the Thai language. The data collection was double checked before analysis. In this study, a health care provider was defined as a worker who had duties to take care of patients and who was practicing clinical service in the study setting.

A “high reliability” message was defined according to 3 criteria: 1. the message had to include the address or name of the writer or hospital or organization, 2. the message had to include a contact number or website or QR code or some route that the reader could contact the sender if they had any questions, and 3. the message had to include the date it was sent or received. If the message met at least 1 criterion, it was classified as a medium reliability message. If the message did not meet any of the criteria, it would be classified as a low reliability message. These messages did not evaluate the specific content in terms of correct or not.

Messages defined as unacceptable were about treatment miracles, selling products or encouraging patients not to see a doctor or to resist medicine or medical treatment. Each participant showed the researcher 3 COVID-19 sent messages on the Line application which had appeared from March to October 2020. The researcher checked the messages against the criteria to evaluate which type each message was.

Data were entered using Epidata Info then exported to the R Program for analysis. Frequencies and cross tabulations were used for the descriptive analysis of the data. Associations between each participant’s characteristics and the features of the messages and reliable messages were analyzed using binary logistic regression.

3. Ethics Statement

The Ethics Clearance Committee of Songkhla Hospital approved this study. The Ethical approval code was SKH IRB 2020-Md-IN3-0616. Data were collected after getting permission. Written informed consent was obtained from each respondent on a form attached to the interview.

4. Results

There were 99 health care providers who participated in this study (Table 1). All of them answered the questionnaires by face-to-face interviews. The median age of the respondents was 41 years, and 80.8% were female. The largest number of the participants were nurses, 38.4%, and another 24.2% were nursing assistants. More than half of the participants had either a risk of contact or had had direct contact with COVID-19 infected patients. The participants spent about 12 hours daily on the internet. The participants received an average of 6 COVID-19 messages per day, twice what they sent (3 messages).

Each participant showed the investigator 3 of their sent messages and the researcher evaluated the messages using the criteria discussed above to determine the level of the reliability of the messages. We found in this study (Table 2) that gender was not an important factor of the sent reliable messages. In terms of age, the older group (over 40, average 42.3 years old) sent at least 1 highly reliable message to their contacts. All participants had worked at the study hospital for almost the same length of time, 11 or 12 years. They all spent 3 and 4 hours on the internet each day for any reason. The participants who had at least 1 highly reliable message had significantly fewer maximum sent messages than the other group, 3 and 5 messages.

We separated the reliability of the messages into 3 groups (Table 3), high, moderate and low reliability messages. We found that different professions had significantly different levels of reliability of messages, and

the nurses sent more highly reliable messages than the other professions, while the group of doctors, dentists and pharmacists sent a very small percentage (2.4%) of low reliability messages to others.

The participants who had a risk of contact with COVID-19-infected patients had the highest reliability of messages. These workers had duties of screening patients at the front of the OPD and worked at the general wards. The same group also sent a lot of low reliability messages to others.

Table 1: Sociodemographic characteristics of the study respondents.

Predictor variables of respondents	n (%)
Age, years	
≤40	48 (48.5)
>40	51 (51.5)
Sex	
Male	19 (19.2)
Female	80 (80.8)
Profession	
Doctor/dentist	11 (11.1)
Pharmacist	5 (5.1)
Nurse	38 (38.4)
Nursing assistant	24 (24.2)
Other*	21 (21.2)
Exposure to COVID-19	
No risk	19 (19.2)
Risk of contact	45 (45.5)
Direct contact	35 (35.3)
Daily time spent on internet (Median (IQR))	12 hours (1, 14)
Maximum COVID-19 messages sent per day (Median (IQR))	3 messages (1, 20)
Maximum COVID-19 messages received per day (Median (IQR))	6 messages (1, 60)

Other*: porter, public relations officer, physiotherapist, radiographer

Table 2: Factors associated with reliable messages among health care providers.

Factors	Low or moderately reliable messages (No. of Persons)	At least 1 highly reliable message (No. of Persons)	p value
Sex, n (%)			1
Male	6 (20.7)	13 (18.6)	
Female	23 (79.3)	57 (81.4)	
Age			0.197
Mean (SD)	39.6 (9.7)	42.3 (9.6)	
Work with COVID-19, n (%)			0.922
No	5 (17.2)	14 (20)	
Risk to contact	13 (37.9)	32 (34.3)	
Direct contact	11 (44.9)	24 (45.7)	
Duration work (years)			0.242
Median (IQR)	11 (5, 13)	12 (7, 19)	
Hour internet use			0.319
Median (IQR)	3 (2, 5)	4 (2, 6)	
Maximum received messages			0.55
Median (IQR)	5 (4, 10)	6 (4, 10)	
Maximum sent messages			0.014
Median (IQR)	5 (3, 6)	3 (2, 5)	

Table 3: Factors associated with level of reliability of the messages among the study health care providers.

Factors	Low reliability messages, n (%)	Moderate reliability messages (%), n (%)	High reliability message, n (%)	p value
Profession				0.002
Doctor, dentist, and pharmacist	1 (2.4)	16 (11.9)	31 (25.4)	
Nurse	15 (36.6)	60 (44.8)	39 (32)	
Nursing assistant	14 (34.1)	26 (19.4)	32 (26.2)	
Others	11 (26.8)	32 (23.9)	20 (16.4)	
Work with COVID-19				0.814
No	8 (19.5)	23 (17.2)	26 (21.3)	
Risk to contact	20 (48.8)	59 (44)	56 (45.9)	
Direct contact	13 (31.7)	52 (38.8)	40 (32.8)	

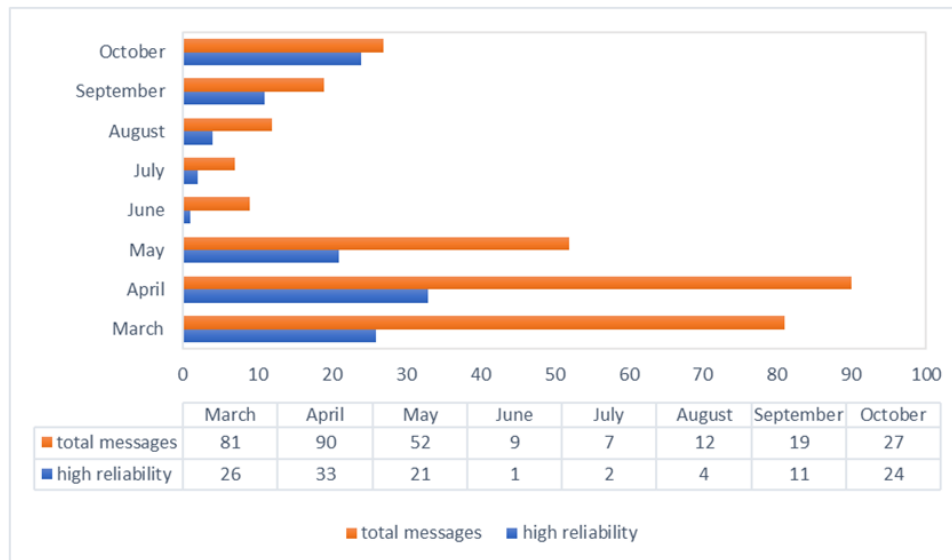


Figure 1: Sending of highly reliable messages among health care providers by month in 2020.

Figure 1 shows that the participants sent a lot of messages in March, April and May but less than half of these messages were highly reliable messages. During these months, the people in Thailand were severely concerned about the new pandemic disease. In September and October, they were sending an increasing number of messages again because of the news about the COVID-19 vaccine and the percentage of the highly reliable messages increased again.

4. Discussion

Principal finding and previous studies

This study found that the participating health care providers spent more time on the internet (12 hours per day)

than the general population who spent approximately 145/min or 2.41 hours per day on the internet [27] and 0.07-1.48 hours per day during the pandemic situation [28]. It is possible that the health care providers had to follow the pandemic situation and update their information more frequently than usual during the COVID-19 situation, thus their longer than usual time spend on the internet.

The number of sent COVID-19 messages cannot be compared to research from other countries because of the different types of application in each country. In Thailand we mainly use the Line application while other countries use other applications such as WhatsApp, WeChat, or Instagram [17-20,28]. The number of received messages was more than sent messages, which could mean that the health care providers spent more time considering the content and reliability of a message before sending them to others.

As we know social media has both beneficial and dangerous aspects [29,30]. The health care providers in Thailand usually use the Line application to send and receive messages and some of them receive these messages from relations or experts or their teachers. This application is popular, available, easy to download and use, and it is free for everyone [17].

The sending of reliable messages is important to others, especially patients, because social media influences many aspects of the patients' lives including emotional, self-esteem, information and networks. They also involve emotional expression and social comparisons [28,30].

None of the messages were about miracle cures or sales messages. All the messages were screened following the recommendations from various websites which advise on how to identify reliable news [8,15,16] Although the health care providers sent both high and poor reliability messages, only 15.15 percent sent all high reliability messages. In my opinion, this is a very low rate because every message which is sent from a health care provider is important and can influence the behavior or decisions of other people, especially patients who believe and trust in their health care providers [23].

Thailand has had a big problem in recent years about the sharing of fake news or incorrect messages and these spread easily like a real virus. Most people believe those messages although they are unbelievable news and they cannot find or search for the resources to check the correct or reliable messages. This indicate that some information sessions would be useful to help them understand that their messages are important to others and they should be more careful about what they send.

My research provides a basic and simple suggestion to help people to consider and assess the messages before they believe them and forward them to others.

5. Conclusions

There are many messages on social media, and health care providers need to learn about the reliable messages and consider their impact on others before they make the decision to send messages to others or believe these messages.

Acknowledgements

I am grateful for the data collectors and participants in this study and I would like to thank Mr. David Patterson for helping me with the English.

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