Health Communication in the New Age: The Role of Social Media on the Behavior and Choices of Self-medication for Covid-19

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Research Article

Health Communication in the New Age: The Role of Social Media on the Behavior and Choices of Self-medication for Covid-19

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Abstract

During the early phase of second wave of Covid pandemic in Indonesia, the number of infected individuals increasing rapidly and exceed the capacity of the hospitals. Sick people who cannot be admitted to the hospital were forced to conduct self-isolation. During that time, a lot of information about covid drugs was circulating on social media and tempt sick people or those who care for them to buy drugs like those in social media chain messages. The aim of this study is to reveal the role of social media on the behavior and choices of self-medication for covid-19 among post-infected individual or to healthy people who are forced to take care of infected people independently. This simple cross-setional, questionairre based study conducted in the 1st and 2nd week of August 2021. Out of 308 respondents, 123 are male and 185 female. Most of the respondents has high level of education (University or diploma). 216 subjects are positive patients infected with covid and 92 people were taking care of their family members. most of the respondents obtain information regarding Covid self-medication actively, and they consider the information reliable, regardless their educational background. Nevertheless, most of them also consider the need to cross-checking the information.

Keywords: Antivirus; Telemedicine; Placebo Effect; Infodemics; Cross-checking

Introduction

Coronavirus disease-19 (COVID-19) pandemic is still haunting the world, including Indonesia. It is an infectious disease caused by the SARS-CoV-2 virus [1]. Most infected person usuallt will undergo mild to moderate respiratory derangement, which was not permanent and recover without the necessary of any special medication[2]. However, some will become seriously ill and require medical attention. Older people and those with underlying medical conditions like cardiovascular disease, diabetes, chronic respiratory disease, or cancer are more likely to develop serious illness [2,3]. Anyone can get infected with COVID-19 and the probability to undergo seriously ill or die at any age is always possible [3].

Although improvements have been made, especially in clinical management, gaps in daily practice are still found in the com-

munity [4]. As Indonesia enters the second wave of the pandemic, around June 2021, the morbidity and mortality due to Covid and its complication is skyrockets [5].

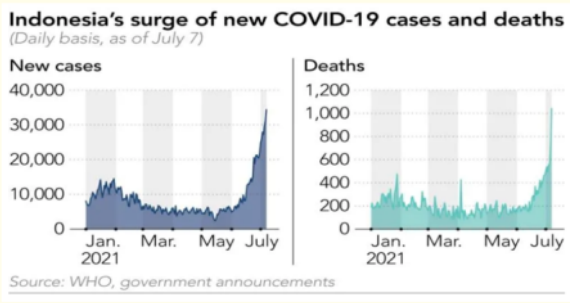

Figure 1: The rise of Indonesia's daily new confirmed cases, started on June 2021. The surge in cases have caused hospital overloads, oxygen shortages, and other related consequences of increased number of infected people [6] with modification.

During those tough days, the previously ongoing surge of COVID-19 cases in Indonesia appears to be driven by the Delta variant of concern, which is more rapidly transmitted, can cause reinfection and deaths of patients in all age groups, as indicated by WHO and the Ministry of Health [7]. Hospitals are struggling to cope with the steep increase in the number of cases in a very short time, despite the efforts to install additional facilities such as emergency tents in the hospitals, as well as additional isolation facilities. The media, including Kompas and Antaranews, has reported a number of deaths before patients were able to receive treatment, sometimes due to the disruption of oxygen supply to hospitals, and sometimes when patients were self-isolating [8].

This condition causes those who do not receive proper treatment at the hospital and are then forced to underwent self-isolation and then make every effort to get treatment [9]. There is a lot of news about the treatment of Covid milling about, especially on social media [10,11]. The form of the message can be in the form of text, images or a combination of text with images [12].

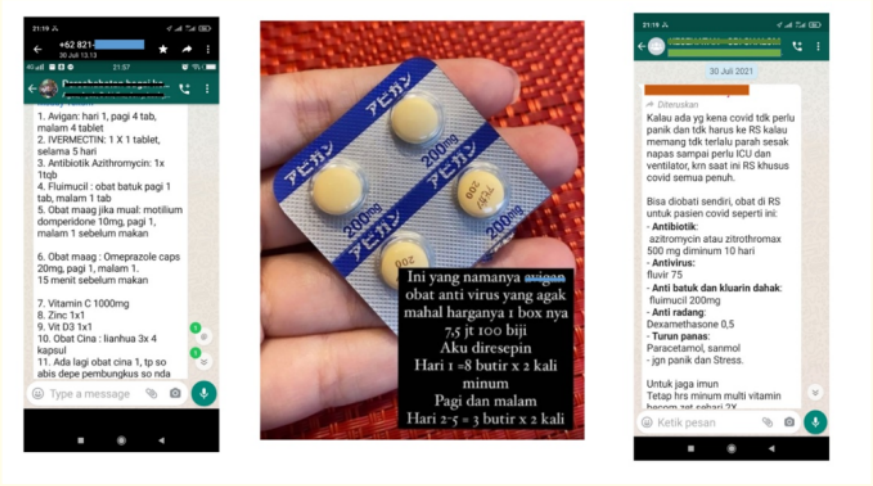

Figure 2: Example of screenshot view in a famous social media platform regarding Covid medication which is widely spread when the case of covid increases in Indonesia.

The truth regarding such health-related information, especially when it comes to drugs or medication, is still being debated, but because the news seems to be packaged convincingly, even citing the names of famous experts, then this message is very likely to be

considered as the truth, especially for those who feel hopeless because of their unresolved illness [13,14]. For those who are sick but do not receive adequate treatment, the news regarding self-treatment in the social media chain message seems to be a potent way out for their illness [15,16]. Even though the government has tried to facilitate reliable telemedicine through the Halodoc™ program, but still dis-information spread rapidly, especially in the group of infected individuals but unfortunately cannot be hospitalized for various reasons [11-16]. The aim of this study is to reveal the role of social media on the behavior and choices of self-medication for covid-19 among post-infected individual or to healthy people who are forced to take care of infected people independently.

Materials and Methods

This simple cross-sectional study is using an e-questionnaire disseminated through the snowball method via popular social media platform named WhatsApp™. The questionaire comprise of two major section, the first section was the informed consent which contain explanation of the reasons and objectives of the study and ends with a statement that if the prospective respondent has understood and is willing to participate, they are welcome to continue answering the questionnaire questions. The second section comprises of two part, the demographic and the perception regarding covid self-medication.

The link to the questionairre is as follows: https://forms.gle/Xc2qtFZRnWH8Ut3n9. Questionnaire distributed from August, 1st to 14th, 2021. We sent the link through a number of Whatsapp group with an additional message so that this message can be forwarded to people who are or have been sick with covid, or to those who have independently helped care for infected people who are self-isolating theirselves. All data collected were further organized in MS Excel™ and then exported to SPSS 21™ and analyzed and interpreted using suitable statistic test.

Results

During 14 days of distributing the questionnaire, we managed to collect as many as 308 respondents who were willing to participate in the study. Their demographic characteristics as follows. There are 123 male (39.9%) and 185 female (60.1%) with their mean age is 34.73 years old, with the youngest age is 11 years old, and the oldest is 70. Most of our respondents has higher level of educational background (University or Diploma) as many as 232 subjects (75.3%).

Out of 308 respondents, as many as 216 subjects (70.1%) are those who experience illness themselves and 92 people (29.9%) who take care of their family members, independently. In the context of diagnosis, 69 subjects (22.4%) underwent antigen swab examination, 120 subjects (39%) conducted PCR test and 119 subjects first underwent antigen swab test and then followed by PCR confirmation (38.6%).

Regarding the type of social media used, WhatsApp™ is the most widely used platform by our respondents, used by as many as 295 respondents (95.77%), and the rest (8 subjects/4.23%) used other type of social media platform. We also asked why our respondents use certain social media platforms and as a result, most of them choose one type only because it is easy to use or user-friendly (109 subjects/35.4%) and best suits their needs (96 subjects/31.2%).

In the questionnaire, we asked several close-ended and open-ended questions. Table 1 showed us lists of answers from closed-ended questions regarding respondents' perception and preference of covid self-medication.

Most of our respondents obtain information about Covid medication actively (n = 184, 59.74%). It means that they take the initiative by starting to ask questions about covid medication to friend or family, or even doctor. In conjunction with that, as many as 210 (68.18%) of our respondent's consider the information is reliable, although there are also those who doubt it (n = 93, 30.19%). Furthermore, we found out that most of our respondent (n = 280, 90.9%) still assume that the information received must still be crosschecked first.

Then let's look at the results of the questionnaire related to the covid drug in the chain message. Most of our respondents stated that the drug on the list is not easy to get (238 person choose the answer "NO" to the question, or 77.27%). "Not easy to get" (Table 1) can only means at least 2 things: (1) that even though the drug is probably available in the pharmacy, but it does not mean that they will get it directly, or immediately after they ask for it to the pharmacist, or (2) because of there are so many demand in the community, it make the pharmacy run out of stock and there is no longer available medicine at that time.

Furthermore, in the context of drug-taking behavior, we asked whether the drug after it was obtained was then taken according

		n	%
How do respondents get information about covid medication	Actively Passively	184 124	59.74 40.25
Respondent's perception of the reliability of the information	Yes No Doubtful	210 5 93	68.18 1.62 30.19
Respondents' perceptions of the need for cross-checking	Yes No	292 16	94.8 5.19
Respondents' perceptions of the need for cross-checking information	Yes No	280 28	90.9 9.09
Drugs mentioned in the message are actually easy to get	Yes No	70 238	22.72 77.27
All drugs are taken according to the instructions/rules	Yes No	279 29	90.58 9.42
The respondents take all the medicine until it was finished	Yes No	218 90	70.77 29.22
Drugs need to be re-purchased, extending the duration of consumption	Yes No	75 233	24.35 75.64
Unwanted effects while taking the medicine	Yes No	70 238	22.72 72.72
Any supervision from a doctor while taking medication	Yes No	231 77	75 25
Already feel the benefits after taking the medicine	Yes No	283 25	91.88 8.11
Should such messages be restricted on social media	Yes No	138 170	44.8 55.19

Table 1: Data Regarding Respondents perception's of Covid Self-medication in Social media.

to the instruction. Most of our respondents reply "Yes" to those questions (n = 279, 90.58%). Furthermore, we asked whether our respondent took all the medicine until it was all consumed. Our respondents mostly say "Yes" to that question (n = 218, 70.77%). But regarding to the practice on re-purchased or extending the duration of consumption, most of our respondents did not agree with it (n = 233, 75.64%). We also asked about any unwanted effect due the medicine and most of them reply "No" (n = 238, 72,72%).

Most of the answers to closed questions regarding doctor's supervision during treatment revealed that the majority did think that it was necessary to be supervised by a doctor (n = 231, 75%). Interestingly, although most of the practice of taking these self-medication drugs without the supervision of the relevant authorities, most of respondents feel improvement after starting treatment. (n = 283, 91.88%). The last closed question is whether after everything has improved, the respondent then agrees that messages like this should still be carefully restricted in circulation in the community. Most of our respondents reply" No" to that question. (n = 170, 55.19%).

Next, the respondent's answers to several open-ended questions related to COVID-19 self-medication will be presented.

Questions	Answers
In your opinion, what motivates you to believe such news/information?	Urgency It's been proven through other people's testimonials Reliable source, trustworthy Self-experience from previous illness
How do you sort out the news/information about Covid so that you can then accept the news/information as the truth?	Cross check to people who have been sick before Cross check via reliable internet source Cross check to doctor/medical staff Looking for other supporting sources/not relying on only one source
If you answered Yes to the question "repurchase the drug" state the reason (short sentence)	Not yet healed Still have symptoms Prolonged side effect of covid → need further treatment

Table 2: List of some answers to the open-ended question regarding covid self-medication.

Discussion

The covid fear actually spreading and accelerating even ahead of the velocity of the pandemic itself. The widely spread information across the globe is sometimes facilitates by prejudice or erroneous information [15]. Eventhough digital technologies ar e actually being harnessed for the public-health response to COVID-19 worldwide, but nowadays it can give impact to both side: positively and negatively [17].

Most of our respondents have a higher education background (75.3% have a diploma or bachelor's degree), and due to their level

of eductaion, most of them have the ability to actively search for the information regarding covid self-medication (143 out of 232 subjects/61.63%); but in the context of closed ended question "respondent's perception of the reliability of the information" most of them actually have confidence in the truth and the reliability of the information (157 out of 232 subjects/67.67% regarding the truth and 144 out of 232 subjects/62.06%). Nevertheless, most of our respondents with higher level of education considered cross-checking the information to a more reliable source is a must. Particularly, according to Barua., *et al.* credibility evaluation of misinformation strongly predicts the COVID-19 individual responses with positive influences and religious misinformation beliefs as well as conspiracy beliefs and general misinformation beliefs come next and influence negatively [18].

When people do not have a choice for the best priority, then the alternative is to choose an option that can be done. In the context of covid, when you are positive due to PCR test, and immediately you think you are very sick, but unfortunately you cannot admitted to the hospital due to the absence of an inpatient room or medical condition is considered still possible for self-isolation, then isolating yourself, try to make everything as comfort as possible and having your own medication available sounds reliefing [19,20]. This is the reason why the practice of self-medication is encouraged. Self-medication actually the practice of selecting and administering drugs to oneself or family without a physician's prescription or consulting a doctor in case of minor illnesses or self-diagnosed conditions [21].

This practice (self-medication) more often cause both direct and indirect effect. Direct effect of self medication are (1)increased tolerance to antibiotics and other subsequent health issues such as pathogen resistance, (2) increased morbidity and even mortality (3) inappropriate treatment and even (4) cross reaction between substance. Another area of concern with regard to self-medication is stockpiling, which leads to a shortage of these very necessary drugs in the market. Drugs that are certified for COVID-19 treatment have several proven uses and stockpiling these substances leaves other people that are actually in need devoid of these essential medications [21-23].

Media close coverage of coronavirus and 'blown-up' hoax or fraud information covered as it is packaged in such a way as to be solid news increased in number, enormously. These are mixed with strict geographical lockdowns, extended quarantines, and financial and social difficulties induced mass fear and caused psychological stress to the community [10]. The unscientific cures or treatment option and unverified medicines endorsed by the non-authority proved harmful and truly a waste of resources (financial, time, or energy [19,20]. The social media played a worldwide role in this and there should be some effort to prevent it [14,24,25].

This condition of information overload regarding a certain diseases has been termed as "infodemics" by WHO considering its fake nature, which triggered discrimination and stigma of disease along with the failure of rapid response policies [15]. The findings of the study conducted by Alshareef., *et al.* in Saudi Arabian general population indicate that the prevalence of understanding regarding unverified information, but are accepting of the practice of sharing information without evidence on social media platforms, with the belief that such information does not cause actual harm to the general public, but instead would be beneficial [26]. Just as the result of our findings in Indonesia, WhatsApp™ was the most preferred social media platform for information traffic (in this case receiving and sharing) among its users, followed by Twitter™ and Snapchat™ [26].

Covid pandemic actually revealed the positive support of digital technologies [27]. They are being exploited massively to support the public-health response to COVID-19 regionally and even globally, including case identification, contact tracing, population surveillance, and evaluation of interventions on the basis of mobility data and communication with the public [27,28]. These lists of rapid responses attachment billions of mobile phones no matter the distance, inter-connection between devices, large online datasets made available, relatively low-cost computing resources and advances with improvement in machine learning and natural language processing [29].

Higher education and trust in official information from the authority or government bodies contributed to decreasing belief in COVID-19 myths and false information among individuals [13,30]. Trust in news from social media, interpersonal communication and clerics contributed to increasing belief in COVID-19 myths and false information, which in turn contributed to less critical social media posting practices, thereby exacerbated the infodemic [31,32]. Media literacy training contributed negatively to surging critical social media posting practices, thereby played a role in mitigating the in-

fodemic [33]. Further study needed to be conducted in onrder to measure how depth is this kind of training affect our respondents ability to contribute to this infodemics.

Based on the result of this qualitative study, we learnt that motivation of our respondents to believe in such information one of them is because of (1) urgency of the respondent, or (2) already proven through other people's testimonial, or (3) reliable source, trustworthy or (4) self-experience from previous illness. It is very interesting to direct attention to focus more on urgency. The result showed us that the public wants to know what the authority know, what they are doing about it and what the public/society can or should do [17]. All stakeholder must focus on mitigating infodemics and its implications at the social front while strategic planning to control current and future pandemics [15].

Effective risk communication is always a strategic resource that can contribute to the success of the public health response in many countries by promoting sustainable change in behaviour [34]. In an ideal situation, there would be time to plan, setting up a communication strategy and an action guide. But times such as these require immediate skills to communicate with the public [35]. Risk communication is an integral component of public health risk management and a core capacity under the International Health Regulations [34,35]. What follows are some suggestions, principles and templates to guide all of the stakeholder through. Protecting health and averting preventable deaths is the mission that all parties should share. All stakeholder must ensure that public health communication is timely, transparent, based on correct information and science, but also honest and frank, showing empathy and understanding about the public's concerns. This type of communication will be essential to ensure that people understand the risks of COVID-19 and follow authorities' recommendations; and these two things must be understood as an effort to protect and maintain sustainability of the health condition [24].The future of public health is likely to become increasingly digital.

Conclusion

We concluded that most of our respondents obtain information regarding Covid self-medication actively, and they consider the information reliable, regardless their educational background. Nevertheless, most of them also consider the need to cross-checking the information.

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