Door-to-Door Health Education to Increase Community Knowledge in Preventing Covid-19

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Abstract Coronavirus disease (COVID-19) caused by SARS-COV-2 has a very high transmission rate and can potentially cause deaths. This disease is a great public health concern globally and considered as humanitarian disaster. Person-to-person transmission of COVID-19 occurs through close contact and droplets. Therefore, the preventions should be done through wearing masks, hand washing with soap, and social distancing. The spreading of misinformation causes a low level of public awareness. It will increase the risk of spreading the disease. This community service aims to increase public knowledge about the prevention and expansion of the COVID-19 disease. One hundred target households were visited and educated during the service. We have also distributed 250 masks and 500 leaflets and put up banners in open places containing what and how to prevent COVID-19. Installation a portable hand washing sink with soap was also carried out to reduce transmission risks. Dissemination of valid information must be carried out to change people's behaviors. The involvement of all elements of society are needed to create a new normal era of life.

1. INTRODUCTION

In early December 2019, the first case of respiratory disease with pneumonia was caused by an unidentified new strain of the virus in Wuhan City, Hubei Province, China. The World Health Organization (WHO) named it Coronavirus Disease (COVID-19) on February 11th, 2020 and declared it a pandemic on March 11th, 2020 (WHO, 2020a, 2020b).

Coronaviruses are a group of disease-causing viruses transmitted from animals to humans (zoonotic), causing symptoms ranging from mild to severe. Previously, two types of coronavirus are known to cause diseases in humans and became epidemics, namely middle east respiratory syndrome coronavirus (MERS-CoV) which is transmitted through civet cats and severe acute respiratory syndrome coronavirus (SARS-CoV) via camels (Indonesian Health Ministry, 2020). Symptoms of COVID-19 include acute respiratory distress such as fever, cough, shortness of breath, and X-rays showing large pneumonia that infiltrates both lungs. The disease's incubation period is 5-6 days, and the longest is 14 days. In severe cases of COVID-19, the patients may experience pneumonia, kidney failure, and even death (Indonesian Health Ministry, 2020).

The pathogenesis, clinical spectrum, and epidemiology of COVID-19 are similar to the SARS. Comparing the genome sequences of SARS-CoV-2, SARS-CoV-1, and MERS-CoV, SARS-CoV-2 sequence bears similarities to SARS-CoV-1 but different from MERS-CoV. The amino acid sequence of SARS-CoV-2 is different from other coronaviruses, specifically in the regions of 1ab polyprotein and surface glycoprotein or S-protein (Kannan, Shaik Syed Ali, Sheeza, & Hemalatha, 2020). Although some animals have been suspected of being a reservoir for COVID-19, no animal reservoir has been confirmed to date. Several studies suggest that the human receptor for COVID-19 may be an angiotensin-converting enzyme 2 (ACE2) receptor, similar to SARS-CoV. (Kannan et al., 2020; Indonesian Health Ministry, 2020).

As of May 10th, 2020, globally, there were 4,178,097 confirmed COVID-19 cases with 283,732 deaths. The United States had the highest number of confirmed cases with 1,367,638 confirmed cases and 80,787 deaths (Worldometer, 2020a). In Indonesia, the first case of COVID-19 infection was reported on March 2nd, 2020, in Depok, West Java. In the early phase, the spread was relatively slow until the second week, and only 96 cases were recorded and were concentrated in Jakarta and its surroundings. However, the number began to rise rapidly until October 31th, 2020, and there were 410.088 cases with 13.782 deaths (Worldometer, 2020b).

Currently, there is no drug or vaccine that specifically treats or prevents COVID-19 infection (Ceylan, 2020; Kannan et al., 2020; Kumar et al., 2020; Roosa et al., 2020; Singh et al., 2020; Vannabouathong et al., 2008). The COVID-19 pandemic is a major world health crisis and as declared enemy of the humanity (Tandon, Ranjan, Chakraborty, & Suhag, 2020). In this condition, the only option is to prevent infection and prepare the health care system for a possible increase in patients' numbers.

Based on empirical evidence, COVID-19 is transmitted from person to person through close contact and droplets, so that the person who has the high risk of infection is the person who had contacted with the person infected (Indonesian Health Ministry, 2020). In principle, preventive measures for infectious diseases are carried out by closing all the entry gates (portal of entry), through which the disease (or agents) enter the human body and controlling the portals of exit. For COVID-19, the entry portals are the mouth, nose, and eyes, while the exit portal is the nose and mouth (Coroneo, 2021; Marra, Edmond, Popescu, & Perencevich, 2020). According to the Ministry of Health, actions that must be taken to prevent the spread of COVID-19 are hand washing with soap or using a hand sanitizer, avoiding touching the eyes, nose, and mouth, practicing the etiquette of coughing or sneezing by covering the nose and mouth with the inner upper arm or tissue, wearing a mask and performing hand hygiene after removing the mask, and maintaining a distance (at least one meter) from people experiencing respiratory symptoms (Indonesian Health Ministry, 2020).

There have been various reactions in society related to the COVID-19 pandemic, ranging from disbelief or fear and panic. For groups who do not believe it exists, they have possibility in risk of spreading the virus. Meanwhile, other groups will experience stress or depression. The diversity of reactions is influenced by the abundance of information that is not entirely accurate (Moudy & Syakurah, 2020) and communication failures (Dani & Mediantara, 2020). The dominant disinformation from the internet and social media will affect available information that impacts people's behavior in preventing COVID-19 (Devi Pramita Sari & Nabila Sholihah 'Atiqoh, 2020; Hafandi & Ariyanti, 2020; Jaji, 2020; Moudy & Syakurah, 2020).

Rajabasa Pemuka Village is located in Rajabasa District, Bandar Lampung City, with 7,399 villagers belonging to 1,733 families and an area of approximately 3.23 km2. Administratively, Rajabasa Pemuka Village consists of 18 Rukun Tetangga/RT (neighborhood unit). Based on the data from the Puskesmas (community health center) Rajabasa Indah, until September 30th, 2020, there had been five confirmed cases of COVID-19. Although the number of cases was relatively small, the presence of these cases in a population with a high density dominated by a non-permanent population would increase the potential for the spread of COVID-19. In addition, the Tanjungkarang Health Polytechnic is located in the Rajabasa Pemuka Village area. Two other universities are also located in the adjacent areas, namely the University of Lampung and Malahayati University.

This community service aimed to increase public knowledge about preventing the COVID-19 disease. The activities were carried out through door-to-door education, placing posters in public places, distributing leaflets and masks, and installing hand washing facilities in public places.

2. METHOD

Our community service was carried out in the Rajabasa Pemuka Village, Bandar Lampung City (Figure. 1), for three weeks in November 2020. To be more specific, activities of the community service were carried out in five RTs where confirmed cases of COVID-19 were found. The volunteers participated in these activities were five lecturers and ten students of the Tanjungkarang Health Polytechnic. The community service partners were Puskesmas Rajaba Indah, Rajabasa Pemuka Vilage, Babinkamtibmas (community police officers), Babinsa (village supervisory non-commissioned officers), and neighborhood units (RTs). The targets of this program were all households living close to those contracted the virus, and community gathering places such as stalls, shops, and mosques.

Figure 1. Map showing where Rajabasa Pemuka Village is located in Bandar Lampung City

The community service was carried out in four stages, namely: situation analysis, briefing and planning, action, and evaluation. Situation analysis was done to determine the problem, focusing on the potential spreading of cases. The coordination was carried out with partners to explain the activities to be carried out, including the strategies, objectives, and targets to be achieved. During the action phase, specific activities were carried out, and these were comprised of door-to-door counseling, installing banners in public places, and distributing leaflets and masks. During the community service, we also gave a hand washing portable unit to the target community. We installed at the mosque because it is a place where many people usually gather. The evaluation was done to assess the success of each of the activities through a focus group discussion with the program partners.

3. RESULTS AND DISCUSSION

In preventing people from contracting COVID-19, community empowerment must involve community components by exploring their potential to play a role in preventing the transmission of COVID-19 (Indonesian Health Ministry, 2020). Our community service team carried out a situation analysis with the puskesmas staff to identify the problems, potential of COVID-19 spread, and potential in the community that could be capitalized for this program. The situation analysis results showed that the confirmed cases of COVID-19 were spread in five different RTs.

The population density in each RT was not evenly distributed, and the cases in these five RTs were found in dense areas. The observation results showed that people's behavior was not supportive for the COVID-19 prevention. This can be seen from their reluctance to wear masks and keep a distance from one another. It was suspected that there was still a lack of knowledge and understanding about the transmission of COVID-19.

Based on the situation analysis results, there was a high potential for the spread of COVID-19 in residential areas of these five RTs. Person-to-person model transmission of COVID-19 occurs through close contacts and droplets (Indonesian Health Ministry, 2020). Therefore, the community service targeted all households close to the houses of those contracting the virus and places where people would usually gather. The community service team would not give education for the people contracting the virus or their family as this was the duty of Bandar Lampung City's COVID-19 task force. The community service only sought to provide education, either directly or using the media. The situation analysis was done to collect information comprising the types and forms of activities, the parties involved, the actions and strategies to be taken, and the budget needed to implement the program.

The briefing was carried out with puskesmas staff and village authority to explain plans, strategies, and targets of the activities and divide each partner's roles. The division of these roles was a form of commitment and responsibility from each partner to implement their assigned duties. It was agreed that the educational activity would be held for two weeks, and all partners would participate in the implementation of this activity by giving necessary assistance. At this stage, it was also agreed that babinkamtibmas and babinsa would act as assistants in the educational activity.

This educational activity aimed to provide the most complete and accurate information to the public about COVID-19. This information consisted of the causes of the disease, symptoms, modes of transmission, prevention methods, health protocols, groups at high risk of infection, comorbidities, and straightening out inaccurate information circulating in the community. Disinformation impacts people's behavior in preventing COVID-19 (Devi Pramita Sari & Nabila Sholihah 'Atiqoh, 2020; Hafandi & Ariyanti, 2020; Jaji, 2020; Moudy & Syakurah, 2020). In response to this problem the community service team visited every home adjacent to the houses where the infected people live, provided education for them, and gave opportunities for the families to ask questions to establish good communication. We also distributed masks and leaflets containing important information. The use of leaflets as a medium for an extension can increase public knowledge to prevent COVID-19 (Jaji, 2020).

Based on the results of the interviews with the visited families, it was found that most of them received incorrect information about COVID-19. The majority of them did not understand the purpose of using masks, washing hands, and maintaining social distance. Moudy & Syakurah (2020) state that most of the invalid information came from social media, thus causing insufficient knowledge in

preventing the transmission of COVID-19. This inadequate knowledge correlated with the low level of mask wearing (Devi Pramita Sari & Nabila Sholihah 'Atiqoh, 2020) and low social distancing (Hafandi & Ariyanti, 2020).

Apart from visiting and educating 100 households, a portable hand washing unit was also installed in the mosque of the target community. The location for the installation was chosen because the mosque was a gathering place for many of the villagers. Hopefully, the portable hand washing unit would be used by the villagers before entering and after leaving the mosque, thereby reducing the transmission risk.

Figure 2. The community services activities: (a) Door to door educational activities; (b) distribution of masks and leaflets; (c) installing banners in public places; and (d) hands–washing portable unit.

The program evaluation was carried out through a focus group discussion (FGD) with partners to assess the program's activities and discuss possible follow-ups. The evaluation results showed that the community service activities had been carried out as planned. The target community seemed to welcome the community service team and the activities. This can be seen from the number of target households who participated in the activities. A total of 100 households were visited and educated; 250 masks and 500 leaflets were distributed accompanied with explanations; five banners containing ways to prevent COVID-19 were installed in public places, and a portable hand washing unit was given to the target community. The involvement of all partners in activities was considered very active, and this could be seen from their engagement during the community service activities.

In this community service, the assessment of behavior change in preventing the spread of COVID-19 among the villagers could not be carried out due to time constraints. The provision of valid information, the distribution of masks, leaflets, and hand washing stations were expected to trigger changes in attitudes and behaviors of the target community. There are three main factors in health behaviors, namely predisposing factors (such as age, education, knowledge, religion, and culture), enabling factors (such as health facilities and information media), and reinforcing factors (such as supports from the government, religious, and community leaders) (Martini, 2019; Pudjaningrum, Wahyuningsih, & Darundiati, 2016).

All the three factors had been included in the behavioral change process during this community service activity. The education to increase knowledge was the first factor intervention. Using media to disseminate information was the second factor, and supports

from government and community leaders were the third factor. Health workers' involvement is important in changing public health behaviors (Sari, Ennimay, & Tengku, 2019). Divisions of roles must be made in community empowerment programs in preventing the transmission of COVID-19 (Indonesian Health Ministry, 2020). Finally, the results of the FGD recommended that such a community service be carried out sustainably with a wider coverage area.

4. CONCLUSION

The community service was carried out successfully as it went according to the predetermined plan and the targets were met. A total of 100 target households had been visited and educated. As many as 250 masks and 500 leaflets were distributed. Banners containing ways to prevent COVID-19 were installed in public places, and a portable hand washing unit was given to the target community. The active involvement of partners at every stage of activity showed that they had a strong commitment and responsibility for the community's social and health conditions. Future community service activity should target a wider area and involve more partners.

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CONFLICT OF INTERESTS

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