

Assistance in Making Natural Hand Sanitizer from Lemongrass Stems and Leaves in Kepuh Village, Palimanan District, Cirebon Regency

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Abstract

The COVID-19 pandemic left many casualties. The virus attacks the human immune system, which has an impact on physical health, such as: (a) pneumonia, (b) respiratory failure, and (c) death. Hands are one of the parts of the human body that are susceptible to viruses and are the easiest medium for spreading them. Therefore, as a preventive measure to prevent the spread of the virus, hands must always be clean and sterile, which is done by using a hand sanitizer, so that the cleaning process is more effective and efficient. The purpose of this community service activity is to provide awareness to the community to prevent the spread of the virus through the habit of hand sterilization. The target of the service is the residents of the village of Kepuh with the stages of activity, namely preparation, implementation, and evaluation. Preparations were carried out by conducting a preliminary survey to see conditions in the field and obtaining permits for routine mosque activities. Implementation is carried out by cleaning, spraying, and washing mukena. Evaluation of activities is carried out for each stage by collecting and concluding data from each stage of activity. The results of the activity are the washing of mukena, and the cleanliness of the mosque, as well as disinfecting the entire inside and outside of the mosque. The organizers of the activity are lecturers and students and are assisted by the mosque's cleaning staff.

Keywords: Corona Virus, Natural Hand Sanitizer, Betel Stems and Leaves

INTRODUCTION

The COVID-19 pandemic left many fatalities due to the very easy process of spreading the COVID virus and attacking the antibodies of the exposed patient's body, causing the patient's body with weak antibodies to experience pain that cannot be said to be mild. Gandhi et al (2020:1757) revealed that the coronavirus usually only causes the common cold, but the combination of betacoronavirus-SARS-Cov and Middle East respiratory syndrome coronavirus (MERS-CoV) causes unusual symptoms such as (a) pneumonia, (b) respiratory failure, and even (c) death. At the end of 2019, a new betacoronavirus infection, named SARS-CoV-2, was reported to have spread very quickly in China's Wuhan market, which is an animal market. Initially, this virus was found in bats, then infected humans who ate it, and there is infection from human to human. This incident later became a global pandemic because the contagion process spread to all countries where its citizens had interacted with residents of Wuhan, China. As stated by Hussin et al (2020:1), this disease is caused by the SARS-CoV2 virus. The disease caused by this virus can also be very dangerous so it becomes a major topic of public health globally.

Infections that are passed from person to person make the patient infected and must self-isolate with various treatments. Drew and Adisasmita (2021:281) revealed that sufferers experience symptoms both from the respiratory tract and from outside the respiratory tract. Cough, runny nose, shortness of breath, or sore throat are respiratory symptoms, and they have the potential to increase the risk of death by 2.17 (1.26-3.72) times when compared to those who do not have respiratory symptoms. Symptoms outside the respiratory tract such as fever, headache, weakness, muscle aches, nausea, vomiting, abdominal pain, and diarrhea also increased the risk of death by 2.47 (1.43-3.72) times. The symptoms experienced appear when the body is infected with COVID-19. Cells experience destruction due to the process of forming

and multiplying viruses that stimulate the body's defense system so that they become inflamed and the body experiences the symptoms that have been described previously. When the symptoms appear, the virus has started to attack other cells. In addition to these general symptoms, this virus was found to have an effect on the heart, lungs, and brain in some cases. From the pathogenesis side, this virus is so strong that it causes complications in several organs of the body that have been mentioned above due to direct tissue invasion by the virus. There is deep inflammation and a cytokine storm. At that time, the body experiences damage to the immune system. Such conditions cause the blood to become thick due to the severe negative effects of COVID.

The easy and fast transmission process, coupled with the symptoms suffered by the patient both outside the respiratory tract and inside the respiratory tract, even has implications for multi-organ failure, causing some of the earth's population to die. The conditions that have been described have caused the WHO to implement a new policy, namely global-scale restrictions known as social distancing. In the United States, both the Democratic and Republican parties have established social distancing policies as an effort to reduce the risk of spreading disease with the same belief that the risk of transmission can be prevented. They believe that social distancing will reduce the number of people affected by COVID-19 (Allcott et al., 2020: 9). In addition to social distancing, another way that can be done to break the chain of virus spread is by implementing clean and healthy living behavior (PHBS). This PHBS habit is carried out with the aim of increasing the quality of health through the process of self-awareness of each individual so that they can implement a clean and healthy life in their daily life (Nimah and Hidayati, 2020:147). One of the PHBS habits that is being promoted is the activity of washing hands with clean water and soap. This activity has been announced by the government and has been promoted since 2016, but the fact is that the community has not fully understood and implemented it (Rosidin, 2020:43). As stated by Andriyansyah et al (2020:295), residents of Kalijambon village, Tembelang sub- district, Jombang Regency do not get used to washing their hands after every activity, so it is very possible that their hands are exposed to germs, bacteria, and even viruses.

The objectives to be achieved from this program are as follows:

- Implement one of the roles of higher education institutions as a source of knowledge and technology for the community in the form of community service dharma.
- Raising community awareness to prevent the spread of the COVID-19 virus. The output of this service activity is an article of community service.

METHOD

This community service is carried out through mentoring activities for residents carried out at the houses of traditional stakeholders. This activity was carried out to coincide with the Posyandu activity, which is a monthly activity of weighing children under five, with the target being mothers and local PKK members. The activity was carried out on August 30, 2021. This activity consists of 3 stages, namely: (a) the planning stage; (b) the implementation stage; and (c) the evaluation stage. This community service activity was carried out for one day at the Kepuh village community hall. The methods used to create this service activity are (1) the provision of tools and materials; and (2) interviews related to the practice of making hand sanitizers and using hand sanitizers.

RESULTS

The results showed that:

- The residents of Kepuh village liked the color and smell of the hand sanitizer that had been made.
- People liked the hand sanitizer that had been made because it didn't make the skin itchy and rough.
- Residents considered this natural hand sanitizer to be very efficient because the raw materials were easy to obtain and very easy to manufacture.

DISCUSSION

Planning Stage

At the planning stage, an analysis of the situation and environmental conditions of the surrounding community is carried out to find out whether it is possible to carry out socialization of assistance in making hand sanitizers. After it is deemed sufficient, the permit process is carried out to the authorities related to the implementation of activities by sorting out the time and place according to the conditions of local residents.

Implementation Stage

The next stage is the implementation stage. At this stage, local residents are given socialization as well as assistance in making hand sanitizer. As for the tools, materials and manufacturing processes, we can see as follows:

1. Tools and materials consist of:

- a) Pot
- b) 5 citronella stalks
- c) 700-1000 mL water
- d) Spray bottle

2. Manufacturing Process:

- a) Lemongrass stalks are cut - from the leaves to the stems, which are then cut into small pieces.
- b) Bruised lemongrass stalks
- c) Bring the water to a boil and add the lemongrass stalks and leaves, if using.
- d) Once it has cooled, pour it into a spray bottle.

While mentoring residents and PKK members seemed enthusiastic about participating in this activity, the activity took place with interactive dialogue with residents discussing the chemical content in lemongrass stems that can kill viruses and bacteria. The discussion also examines the importance of using hand sanitizers in the midst of a pandemic situation like today. The content of flavonoids in the stems and leaves of lemongrass function as an antiseptic that can kill bacteria. Flavonoids are obtained from the formation of complex compounds through extracellular proteins (Anggraeni and Asgnad, 2018:127).

Apart from being an anti-bacterial, lemongrass has another function, namely as an anti-mosquito liquid. Lemongrass at the time of distillation or distillation produces essential oils in the form of citronella oil. The content of citronella and geraniol in citronella oil has toxic properties that will make mosquitoes dehydrated after smelling this oil extract, which can result in death if this dehydration process continues. Mosquitoes use their sense of smell and body heat to prey on their victims, but the weak side of mosquitoes is that they cannot distinguish colors in their vision. Thus, mosquitoes only use their sense of smell to prey on their targets (Suratun and Wahyudi, 2019:94). Besides being made into spray bottles, Fatina et al. (2021:843) process essential oils obtained from the steam and water distillation process into aromatherapy candles in Ketapang Lor Village as mosquito repellents, and the results show that 57% of residents feel the effect of this candle can repel mosquitoes.

Evaluation Stage

The last stage is the evaluation stage. At the evaluation stage, it is carried out when the mentoring process is carried out. The evaluation was carried out by giving questions and answers to residents by taking a sample of five people after carrying out the mentoring process. Interviews were conducted to determine the following indicators:

- Ascertaining residents' comprehension of the process of making hand sanitizers from lemongrass stems and leaves.
- Knowing citizens' understanding of the importance of hand sanitizer use during this pandemic, which is a preventive measure for the transmission of the COVID-19 virus.
- Knowing the residents' understanding of other functions of lemongrass antiseptic liquid, which can also be used as a mosquito repellent liquid.

The results of the interview conducted with Mrs. A revealed that she was able to describe the process of making a hand sanitizer by including the tools and materials needed, and she also understood that a hand sanitizer can kill viruses and bacteria on hands so that the spread of the virus can be suppressed, and she will also use lemongrass liquid. This is to keep mosquitoes from sticking to the skin. The second interview was given to Mrs. B. She was able to tell us about the materials and tools used as well as the steps taken. She also said that hand sanitizer is very important to use in a pandemic situation like this because bad germs are invisible and when shaking hands with anyone we don't know whether our hands are exposed to the virus if they are not cleaned. He also said that mosquitoes can leave our bodies. Mrs. C was also able to explain the process of making hand sanitizers step by step and knew that the use of hand sanitizers during this pandemic is one step to protecting our hands from being exposed to viruses, which also have an additional function as mosquito killers.

Mrs. D and Mrs. E revealed that to kill the virus, it turned out to be very easy, not only using alcohol and chemicals but actually being able to use natural ingredients that were in the surrounding environment, even though they forgot the dose used, more or less, they could tell the process. In general, the processing of lemongrass, also told us that if we don't clean our hands after we touch other people's hands, of course, our hands can become a medium for the spread of the COVID-19 virus. Furthermore, even though they don't know about other benefits of anti-septic liquid as a means to prevent mosquitoes from sticking to the skin, they will try to use it and see the effectiveness of this liquid as a mosquito repellent on our skin. Based on the results of the interview, because the 5 residents were able to answer the questions well, we can know that the residents' understanding of assistance in making hand sanitizers from lemongrass leaves and stems is said to be good.

CONCLUSIONS and RECOMMENDATIONS

This mentoring activity received positive assessments from residents regarding several knowledge consists of: (a) understanding of the use of natural materials around the environment in making hand sanitizers, (b) understanding the importance of using hand sanitizers as a preventive measure in an effort to prevent the spread of the virus; and (c) understanding of the additional function of lemongrass juice as a mosquito repellent.

It is hoped that the manufacture of hand sanitizers is not just a one-time product but is expected to be a continuous process that can then create jobs for residents so that it becomes a product that can create economic value followed by programs, product packaging training, and marketing.

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APPENDIX



Figure 1. Pre-boiling



Figure 2. Final Boiling



Figure 3. Giving Hand Sanitizer



Figure 4. Enthusiasm of Residents to Try HS