EFFECTIVENESS OF ACT-M APPLICATION IN IMPROVING SCHOOL-AGE CHILDREN'S KNOWLEDGE OF HAND WASHING

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Abstract

The spread of the covid-19 virus can be done with the implementation of health protocols, one of which is proper hand washing. Children are the age at which they actively explore their environment regardless of the cleanliness of the surrounding environment. Therefore, proper education is needed on how to wash your hands properly using the right media, one of which is audiovisual provided through android-based applications. This study aims to find out the effectiveness of act-M (Let's Wash Hands-Mobile) applications against proper hand washing knowledge in school-age children. Method this study used Quasi experiments with the one group pretest and posttest design approach with the number of sampel as many as 13 people selected with purposive sampling techniques. The instruments used are mobile applications and questionnaires. Act-M applications can increase school-age children's knowledge of handwashing by average grades before intervention (65,3) and after intervention (96,5) with a p (0,001). Act-M application is effective as an educational medium to let school-age children know about how to proper hand washing measures, which is needed to prevent children from contracting the covid-19 virus.

Keywords: *ACT-M Application, Knowledge, Child, Hand Washing*

INTRODUCTION

Coronavirus Disease 2019 (Covid-19) is a new type of disease that has never been identified before in humans. The virus that causes Covid-19 is called Sars-Cov-2. Common signs and symptoms of Covid-19 infection include symptoms of acute respiratory distress such as fever, cough and shortness of breath. The average incubation period is 5-6 days with the longest incubation period being 14 days[1]. On March 2, 2020, the first case of Covid-19 was detected in Indonesia, on May 8, 2020, there were 12,776 cases and 930 deaths were reported in 34 provinces. As of March 21, 2020, in Indonesia, there were 450 cases of Covid-19; 38 of them died. Although the health risks from Covid-19 infection in children are lower than in older age groups, there are 80 million children in Indonesia (about 30 percent of the entire population) who have the potential to experience serious impacts due to various secondary impacts arising both in the short and long term. Cases of covid-19 in children appear to be fewer than adult cases, although they are actually the same. This can be because infected children show no symptoms or have only mild symptoms[2]. Transmission of covid-19 in children occurs in many family clusters.

Everyone is at risk for contracting covid-19 including children. The slow pace of transmission is affected by the virus' ability to infect, immune system and health-maintaining

behavior. Pharmacological development continues to be carried out by experts. Strategies to reduce the spread of covid-19 are to keep their distance, use masks and wash your hands[3]. Understanding individual behavior and the risks they have is important in controlling disease transmission[4]. Both adults and children have an important role in breaking the chain of transmission of Covid-19 so as not to cause new sources of transmission /*clusters* in places where the movement of people, interaction between humans and the gathering of many people[5]. People must be able to move again in the situation of the Covid-19 pandemic by adapting to new healthy, cleaner, and more obedient habits, which are implemented by all components in the community and empower all existing resources. The role of the community to be able to break the chain of transmission of Covid-19 (risk of contracting and transmitting) must be done by applying health protocols, and one element of health protocols that we must maintain is diligently cleaning hands regularly by washing hands using soap and running water or using alcohol-based antiseptic liquids/ handsanitizer[6]. Who-recommended Handrub Formulations say that washing your hands as often and in the right way (at least for 40 seconds) is one of the most important steps to prevent Covid-19 infection. Hand washing with soap is much more effective at killing germs, bacteria, and viruses than washing your hands with water alone. Soap can easily destroy the lipid membrane of Covid-19, making the Covid-19 virus inactive. Hand washing using hand sanitizer may be done in certain situations where soap and clean water are not available[7]. For that, it is very important to teach and get used to good and correct hand washing for the health of children in their growth and development.

Hand washing culture has not been fully implemented by the people of Indonesia. It is a habit that it is seen that washing hands with soap is actually done after eating only. Ideally this behavior is done before eating to reduce bacteria on the hands. Washing hands with soap is a preventive effort as a protection of the body from various diseases that are contagious. Hand washing with soap can be done when finished defecation and BAK, before food is prepared, before and after consuming food, after playing in children, after coughing or sneezing and after throwing snot[8]. The habit of washing hands using water alone cannot protect every individual from bacteria and viruses on the hands. Especially if your hands are not under running water. Washing your hands is always the best way to prevent disease. But with the outbreak of coronavirus (COVID-19), hand washing is becoming more important than ever. The coronavirus spreads easily. Hand washing can prevent the spread of germs, including the coronavirus. When we wash our hands, we do not only protect ourselves from kumat but also protect our people and the wider community[9].

Currently, many things can be done to prevent the spread of covid-19, one of which is to provide education to increase public knowledge about the importance of implementing health protocols. There are many media that can be used, one of which is video media. Video is a type of audio visualmedia, which means a learning medium that can be seen using the

sense of sight and heard using the sense of hearing. As a learning medium, video is effectively used for mass learning processes, individuals and groups 10 Edgar Dale with Dale's cone of experience theory, the theory describes the level of understanding of students in a cone of experience. In the experience cone of Edgar Dale, the video is located in the middle because it belongs to the category “Television”. This position means that video media is better than image media and audio media. Furthermore, the theory of Bruner who classifies the mode of learning into three levels, namely direct experience (enactive), pictorial experience / image (iconic), and abstract or symbolic experience[11]. Both of these theories confirm that a student will feel a more meaningful learning experience if presented a learning atmosphere that students can feel using all five senses. In other words, the more five senses that students use when learning, the more easily absorbed the learning process will be absorbed by students. Through audio visual children will be able to fulfill the task of growth and development in the form of developing attitudes towards themselves as a developing individual such as maintaining cleanliness and maintaining health on themselves. Especially in times of pandemic we have to limit all activities such as maintaining distance that requires us to often interact and communicate using media, and currently one of the media that is widely used is smartphones such as android, because it is more practical and accessible at any time.

There are many mobile system-based learning media applications that can be obtained for free by downloading (downloading) through mobile devices on *the* Play Store. However, it can also be developed by it self various learning applications Thus combining educational videos or hand washing learning with android-based applications that can be accessed through smartphones will certainly be very helpful and useful in providing fun hand washing education for an elementary school age child. ICT (Information and Communication Technology) has easily and cheaply removed the boundaries of space, time and place that have been limiting the world of education. Learning should be fun and with the help of mobile devices can be made more interactive teaching materials and multimedia so that children who will learn will find it fun because learning interactively. Mobile learning strategy (M-Learning) is a new choice in the world of learning and is very effective to achieve its goals[12].

Based on preliminary studies conducted on some parents who have school-age children stated that, there are still some children who do not know well how to wash their hands, there are still children who are reluctant and often must be reminded first to wash their hands, related information about good hand washing and true parents say children only get information from the media in general and it is not specifically intended to educate children about how to wash their hands properly. During the pandemic, many children were familiar with the use of gadgets more deeply, in addition to learning online, they also used gadgets to explore game applications and so on. With this phenomenon, discussing an educational medium in the form of games is needed to help increase children's knowledge about things

that can improve health, one of which is the implementation of health protocols during pandemics.

MATERIAL AND METHODS

It is a quantitative study with a pre-experimental design, which in this study only uses one group. The sample number used was 13 school-age children selected using purposive sampling techniques. The research begins by developing act-m applications first. The ACT-M app is about educating the importance of hand washing and hand washing steps packaged in the form of games. The study was conducted for 5 days for each respondent where on the first day pre-test and application recognition, the second day using the application, day three observation by researchers by following how the application was used directly in the child's residence, the fourth day still using the application, day 5 posttest. To analyze differences before and after intervention is used wilcoxon tests because the data is not normally distributed.

RESULTS

Knowledge Level Scores About Proper Hand Washing Before and After Intervention

Based on the data in table 1, it can be seen that the average value of knowledge before being given an intervention is, 65.3 and the average value of knowledge after being given intervention is, 96.5. From the average values, it can be seen that there is an increase in knowledge from before and after health education interventions through the ACT-M application on proper hand washing.

Table 1. Frequency distribution of knowledge level scores about proper hand washing before and after intervention

Knowledge	N	Mean	Median	Min-Max	SD
Pre test	13	65,3846	65,000	50-85	10,69687
Post test	13	96,5385	100,000	85-100	5,54700

Based on the data in table 2, it can be seen showing that the value of negatif ranks (0), which shows that no respondents experienced a decrease in knowledge score after intervention, a positive score ranks (13) which indicates that all respondents experienced an increase in knowledge score and Ties value (0) indicating that none of the respondents had a fixed score before and after being given intervention.

Table 2. Wilcoxon test results signed rank test

		N	Mean Rank	Sum Of Rank	p value
Before and after the intervention	Negative ranks	0	0,00	0,00	0,001
	Positive ranks	13	7,00	91,00	
	Ties	0			
	Total	13			

The results of the statistical two related samples test or wilcoxon test are obtained p value 0,001, where this value is smaller or < 0,05. Thus the Ho Hypothesis was rejected and Ha accepted which is ACT-M application was effective in improving school-age children's knowledge of proper hand washing.

DISCUSSION

During the current Covid-19 pandemic, there has been a focus on handwashing education and information for both health-care workers and the general public. There has been a profusion of public health messaging regarding the need of handwashing and proper handwashing practices from numerous sources. Memes and short movies geared at reaching people on their mobile devices, as well as through social media, are being used, as are traditional television, radio, print commercials, and billboards, all with the same message: efficient handwashing is critical to preventing the spread of Covid-19[13].

Our hands play an important role in the transmission of germs. Cross-transmission of these organisms occurs when we do not properly wash our hands[14]. There have been virtually constant awareness campaigns to encourage handwashing among health service staff, patients, and visitors inside healthcare systems and services. For example, the international campaign “My five moments for hand hygiene” identifies crucial occasions when health care workers should adhere to hand hygiene guidelines while interacting with patients or their surroundings[15]. Looking at this phenomenon, it can be said that hand washing greatly contributes to the occurrence of a disease. Not only in adults, in children it is also important to teach about proper hand washing, because at the age of children, they are very actively exploring their environment[14].

COVID 19 has also claimed the lives of children and people who are fit, strong, and healthy. So, in these trying and unpredictable times, basic health literacy is more important than ever. Health literacy, according to the World Health Organization, is defined as “the personal traits and social resources required for individuals and communities to access, understand, appraise, and apply information and services to make health decisions”. Health literacy encourages people and communities to take an active role in their own health care, improves health and well-being, reduces health disparities, and strengthens individual and community resilience[16]. Providing education through appropriate media such as audiovisual will be able to improve one's literacy, so that they are able to do good self-management and achieve optimal health status[17].

Audiovisual media can be the right choice in providing education, because this media combines the components of images and sounds that can make people interested in listening

to the content of a given information. When compared to traditional teaching techniques, audiovisual media training significantly improved the outcomes because it gave a visual portrayal of real-life clinical circumstances. In addition, audiovisual media increased user happiness by allowing for self-management, flexibility, and repetition. Some authors, on the other hand, pushed for a hybrid approach to learning/instruction, believing that traditional and nontraditional methods are complimentary[18]. Stories assist young children in gaining knowledge and understanding of their surroundings. As a result, early cognitive development can be aided by processing narrative material and applying knowledge obtained through stories to real-life situations. Although youngsters receive stories from a variety of sources, digital media may be one of the most common: Television and videos continue to be the most popular media among American children aged 0-8, with children aged -4 watching more than 1 hour per day on average[19].

CONCLUSION

It is important to ensure the right educational media for children to increase knowledge and also compliance in maintaining hand hygiene. In addition, a strategy using audiovisual media-based applications must be applied, because it can increase children's knowledge about proper hand washing.

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