Pandemic Covid-19: Android Application "Mh Mobile" Is A Solution For Leprosy Patients

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Abstract: Leprosy has not disappeared; this old disease still exists today in our country. Eliminating leprosy requires extra effort, one of which is using technology. Human activity in modern times uses technology. One of the technologies that everyone has is a smartphone. The challenge during a pandemic condition is that it is very risky for people with leprosy if they have to go to a community health center or hospital. This research was conducted with a quasi-experimental design with a pre-post control group design with a sample size of 70 people. The intervention was carried out using the media in the form of the android application "MH Mobile" in the treatment group. Change in Knowledge and adherence as measured by a validated questionnaire. The questionnaire was measured before and after the intervention and then tested using the Wilcoxon and Mann-Whitney tests. Statistical analysis showed that there was an effect of MH Mobile on knowledge and adherence ($p = 0.000$). There were significant changes in the two groups between before and after the intervention. The MH Mobile android application can be an effective means of providing education about leprosy as an effort to increase knowledge during the pandemic era 19

Keyword*:* Infectious Desease, MH Mobile, Android application, Knowledge, Adherence, Covid-19

1. Introduction

The spread of the corona virus initially had a profound impact on the economic and social world, but now the biggest impact is being felt by the world of health [1]. The Covid19 pandemic has affected all health systems from the level of public health centers to referral hospitals [2]. Leprosy sufferers who should be used to routine visits to public health centers now have to go through complicated procedures because of the increasing covid cases [3].

Covid will also be able to attack everyone, including people affected by leprosy, if they do not take good precautions and endurance [4]. Leprosy has not disappeared; this old disease still exists today in our country [5]. Clients with chronic illnesses and healthy individuals are also targeted in preventive measures. Symptoms of leprosy are the presence of white or red patches on the skin. The patches are not itchy, painless, but numb (lack of feeling or numbness) [6]. The spots are often found on the elbows because there are nerves that are close to the skin surface, there are also spots that are located around the cheekbones (face), ears, or shoulders (body) [7]. Also, some sufferers show symptoms in the form of scattered red rash, and some have signs of dehydrated skin (not sweating) and hair loss in their eyebrows [8]. Because they do not feel pain, do not itch, sufferers tend to be ignorant. Even though the disease continues, it has the potential to transmit and cause disability [9]. The presence of leprosy sufferers who have not consumed leprosy drugs or treated irregularly is a source of infection. Patients can transmit germs through respiratory fluid splashes or contact through skin wounds [10].

Human activities in modern times use technology [6]. One of the technologies that everyone has is a smartphone. Smartphones that are loved by the public today are smartphones with the Android operating system [11]. Android is an operating system that is easy to develop. People who are new to Android development are also able to create simple Android-based applications. Seeing the product of Android, now it is bringing up ideas or solutions to solve the problem of leprosy using an Android-based application. The application is information, calendar, and alarm then opens the medication calendar and checks the list, which indicates that the leprosy patient is taking medication every day [12]. This application requires users to enter and write a history of diagnosis. Every day the patient will be reminded by notification to take medication. Patients can also open other menus to find out information about leprosy [13].

Based on the description above, the researchers focused their research on providing the MH Mobile application to leprosy sufferers during the pandemic. Thus, it is hoped that this application can increase the knowledge and

compliance of lepers so that nurses and families can provide optimal service for clients. The prevalence of leprosy still haunts Indonesian society so that the increasing trend of Knowledge and Compliance has shifted from conventional methods to Android applications, thus demanding increased utilization of services and technology.

2. Method Location and design of research

This research is a quasi-experimental quantitative study with a nonrandomized control group pretest posttest design. This research was conducted at the Puskesmas in Malang district which has leprosy patients.

Population and Sample

The study population was leprosy sufferers and their families who were registered at the Puskesmas in Malang district. The research sample was taken by purposive sampling by selecting samples between populations according to the inclusion and exclusion criteria and being willing to participate in the research by signing an informed consent. The number of samples is 70 people, consisting of 35 intervention groups and 35 as control groups.

Method of collecting data

This research was conducted during a pandemic, so that when coordinating, use personal protective equipment and maintain a distance according to health protocols. Prior to use, the application has gone through trial stages and focus group discussions with various fields. Respondents were divided into two groups, namely: 1) The respondent group used the android application "MH Mobile"; 2) Respondent Groups Using Modules. The research will be carried out in Malang Regency. In this study, the sampling technique used was purposive sampling technique. With the following criteria: Leprosy sufferers and their families, have a companion taking medication, are able to read and write, have enough Android phones to install applications and data packages (treatment group).

Picture 1. MH Mobile application menu

The application menu consists of knowledge articles about leprosy, treatment, side effects, etc.

3. Result

The results in the study were divided into 2, namely demographically and the effects of crosstabulation pre and post after treatment using the MH Mobile android application.

Table 1. Frequency Distribution of Respondent Characteristics Based on Demographic Data

No	Variable	F	%
1.	**Age**		
	7-18 Year	5	7,00
	18-25 Year	23	32,0
	25-30 Year	17	24,0
	> 30 Year	25	35,0
2.	**Gender**		
	Man	39	56,0
	Women	31	44,0
3.	**Education**		
	SD	45	64,0
	SMP	13	18,0
	SMA	12	17,0
4.	**Job**		
	Private	17	24,0
	Farmer	33	47,0
	Does not work	20	28,0

Based on table 1 above, it shows that the distribution of the characteristics of respondents based on age is the highest, namely at the age above 30 years as many as 25 (35.0%), and the smallest is at the age of 7-8 years as much as 5 (5.00%). The distribution of the characteristics of respondents based on gender was mostly male, which was 39 (56%). The most dominant distribution of respondent characteristics based on the latest education is at elementary school age as much as 45 (64.0%). Distribution of respondent characteristics based on job status, namely 17 (24.0%) private sector respondents and 33 (47.0%) farmers, while 20 (28.0%) respondents did not work.

Table 2. Results of cross-tabulation pre and post after treatment using the MH Mobile android application.

Variable	MH Mobile		Module	
	Pre	Post	Pre	Post
Knowledge	50,56	90,56	40,34	60,45
P Value	0,000		0,006	
Adherence	10	34	5	6
P Value	0,000		0,100	

Based on table 2, it can be seen that there was an increase in knowledge in the MH mobile and module groups. This increase in knowledge was seen significantly in the MH Mobile group as evidenced by a P value of 0.000 compared to the module which was only 0.006. Meanwhile, the increase in adherence was seen in the intervention group using MH mobile.

4. Discussion

According to the research results, it is known that all respondents have previously received information about leprosy. This is not surprising considering the material on leprosy. Knowledge is the result of knowing someone who is obtained from the effects of senses, namely the senses of sight, hearing, smell, taste and touch. Knowledge about leprosy is an essential factor and affects the behaviour of individuals, families, and even communities [14].

The results of the analysis showed that there were significant differences in the level of Knowledge in each group. In the intervention group. This indicates a significant difference in respondents' Knowledge between before and after using the MH Mobile application. This is in line with research conducted by Ratiyun et al [15]. which also shows a significant increase in Knowledge after respondents were given health education through the android application [16].

The results showed that there was an effect of MH Mobile on respondents' adherence to therapy. MH Mobile makes it easy to identify problems and resolve drug-related problems, symptoms and drug side effects. so that patients can adhere to their therapeutic treatment safely and correctly and take their medication regularly [17]. Knowledge will be formed when someone has heard something that will attract that person to know more about something [18]. This is in line with previous research which states that extension plays a role in increasing knowledge [19]. The effectiveness of providing audiovisual and tutorial-based education to someone can increase adherence to therapy [17]. Based on the descriptive characteristics of respondents in terms of the productive age group 25-40 years [20].

Besides, through the Wilcoxon test, it was found that the control group also experienced significant changes in Knowledge and adherence. This can happen because the respondent received a Module. Although each group is known to have a substantial increase in Knowledge and adherence between before and after treatment, after the Mann Whitney test was carried out, it was found that the intervention group experienced a more significant increase in the mean Knowledge and adherence compared to the group given MH Mobile. So that the MH Mobile android application can be said to be quite useful in increasing the Knowledge of respondents in the intervention group, this study is in line with research conducted by Safitri, et al. [21]. which also shows an influence on the use of android applications as a medium for health education in increasing respondents' Knowledge [22].

The majority of respondents' education is junior high school having knowledge of leprosy [23], this is in line with the research that there is a significant relationship between knowledge and compliance [24]. Research where there is a significant relationship between the knowledge variable and the compliance variable with the statistical test results is p = 0.000, the p value is below the value ˛ = 0.05 which means that it has a relationship before the start of the MH Mobile intervention.

5. Conclusion

MH Mobile android application can be an effective means of providing education about leprosy as an effort to increase Knowledge and to prevent complications and side effects of drugs. The MH Mobile android application can be an alternative media that can be used as a means of health education

6. Conflict of Interest

The authors have disclosed no conflict of interest, financial or otherwise.

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