

Health Education Intervention with Social Media Reminder and Audiovisual Approach to Improve Medication Compliance and Tuberculosis Prevention Behavior

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ABSTRACT

Tuberculosis is a disease that is difficult to treat even though it has been controlled with the Directly Observed Treatment, Short-course chemotherapy (DOTS) strategy since 1995. This study aims to analyze the effect of health education interventions with social media reminder and audiovisual approaches on medication adherence and behavior. prevention of tuberculosis transmission at the Wonoayu Health Center, Sidoarjo, Indonesia. The design of this study was a non-equivalent control group pretest-posttest. The research subjects were 70 tuberculosis patients who were selected by purposive sampling technique. After collecting data on compliance and prevention, data analysis was carried out using the t-test. The p value of the difference in adherence test was 0.000, while the difference in prevention behavior was 0.000. Furthermore, it was concluded that the health education intervention with a social media reminder and audiovisual approach was effective in increasing medication adherence and preventing tuberculosis transmission.

Keywords: tuberculosis; health education; medication adherence; Tuberculosis prevention behavior

INTRODUCTION

Background

Tuberculosis is one of the infectious diseases that spread throughout the world and is a public health problem because of its high morbidity and mortality. ⁽¹⁾ This disease is difficult to treat even though the control strategy is Directly Observed Treatment, Short-course chemotherapy (DOTS) has been implemented since 1995. This is because it takes a long time for treatment and really requires patient compliance. Along with the increasing prevalence of tuberculosis, the treatment of tuberculosis patients apart from emphasizing treatment, is now also focusing on empowering patients to be actively involved in treatment. However, the empowerment of tuberculosis patients is still low. More and more cases of multiple drug resistance (MDR) are problems that arise as risks, one of which is due to drug withdrawal factors. This makes the level of complexity of the tuberculosis problem even higher. ⁽²⁾

The 2018 Indonesia Health Profile places tuberculosis as the first priority in disease control, because this disease has a broad impact on quality of life, economy, and also high mortality. One of the influential factors in efforts to suppress or control the incidence of tuberculosis is the success of treatment. The notification rate for all tuberculosis cases in 2018 was 214 per 100,000 population. This is an increase compared to 2017 of 169 per 100,000 population. The treatment success rate for all cases of tuberculosis was 84.6%. The cure rate for all cases that must be achieved is at least 85.0%, while the treatment success rate for all cases is at least 90.0%. This figure is still below the success rate target from WHO which sets a target of >85%. ⁽³⁾

TB is estimated to still attack 9.6 million people and cause 1.2 million deaths in Indonesia. In 2017, 324,539 cases of tuberculosis were found, and in 2018 there was an increase to 330,910 cases. The highest number of reported cases were in the provinces of East Java, Central Java and West Java. Tuberculosis cases in the three provinces accounted for 38% of the total number of new cases in Indonesia. ⁽³⁾ Indonesia ranks 12th in the epidemiological burden of tuberculosis in 2019 among 30 countries with a high tuberculosis burden. ⁽⁴⁾

East Java is one of the provinces in Indonesia with a high incidence of tuberculosis. Based on data obtained from the Basic Health Research (Riskesdas) in 2018, the incidence of pulmonary tuberculosis in East Java was 0.2%. This figure continues to increase every year, namely in 2016: 3660 cases, 2017: 3896 cases, 2018: 3914 cases, and in 2018: 3926 cases spread across 19 districts/cities, including Sidoarjo Regency. ⁽⁵⁾

Wonoayu District is one of the districts that contributes to the high incidence of pulmonary tuberculosis in Sidoarjo Regency. The number of cases of pulmonary tuberculosis in Sidoarjo Regency in 2014 was 699 cases (52%), in 2015 was 748 cases (56.6%), in 2016 was 853 cases (62%), in 2017 was 942 cases, in 2018 was 678 cases were added with old cases (relapse) 8 cases, and in 2019 there were 970 cases with the total number of cases of pulmonary tuberculosis was 1,822 cases. ⁽⁶⁾

Treatment and care for tuberculosis is a long process that requires good management strategies. The sooner a tuberculosis patient can find out his disease, the better for him to implement a self-management program. For this to happen, clients must receive health education so that the empowerment of clients in performing self-care can be increased. ⁽⁷⁾ This empowerment includes knowledge and behavior / active actions of clients in care, compliance in treatment and prevention of tuberculosis transmission. Health education interventions help clients acquire and practice the skills they need to implement a specific disease medical regimen, guide health behavior change and provide emotional support to enable clients to control their illness. ⁽⁸⁾

Health education is an effort to influence and invite other people, whether individuals, groups or communities to carry out healthy living behaviors. ⁽⁹⁾ By being given health education, it is hoped that tuberculosis patients have good compliance and can improve their health status. Health education can be done through various media. The media used can be in the form of audiovisual media and reminders. Regular and frequent contact with clients by telephone can improve compliance and achieve progress towards the client's treatment process. In one study, education also concluded that social media reminders increase access to information, the effectiveness of cooperative learning and motivation. ⁽¹⁰⁾

Purpose

The use of audiovisual media in health education is supported by research by Tuong, et al. ⁽¹¹⁾ which states that video health education interventions can effectively change client behavior in breast self-examination and medication adherence. In addition, reminder media such as SMS reminders can be used to increase compliance with type 2 DM clients. This is in accordance with research by Vervloet, et al. ⁽¹²⁾ which explains that clients who are frequently reminded via SMS have higher awareness of drug use than those who do not receive medication. sms (42.9% vs 18.2%, p=0.041). Meanwhile, research on health education interventions with social media reminder and audiovisual approaches on medication adherence and behavior to prevent tuberculosis transmission has not been explained, so research needs to be done.

METHODS

Design and Research Subject

This type of research was a quasi-experimental, which applies a pretest-posttest non-equivalent control group design. The study was conducted on 70 tuberculosis patients at the Wonoayu Health Center, Sidoarjo, Indonesia, selected by purposive sampling technique. Inclusion criteria for research subjects were: 1) primary pulmonary tuberculosis patients who had entered the intensive treatment phase (1-2 months first) recorded in the medical record; 2) pulmonary tuberculosis patients aged 26-45 years; 3) can read and write; 4) have an Android phone with the Whatsapp application and can play videos. Meanwhile, the exclusion criteria were: 1) patients with musculoskeletal, hearing, psychiatric, hearing and vision disorders; 2) patients with complications; 3) tuberculosis patients who attack other than the lungs; 4) tuberculosis patients who are pregnant or breastfeeding. The drop out criteria were: 1) did not follow the complete phase of the research; 2) moving house.

Variables

The independent variable in this study was health education with a social media reminder and audiovisual approach. While the dependent variables were adherence to medication and the behavior of preventing tuberculosis transmission.

Data Collection and Analysis

Data were collected through observation and then analyzed using t test.

RESULTS

Medication Compliance

Analysis of medication adherence before and after being given the intervention showed there was a significant difference from the average score of adherence to taking medication before and after the intervention and standard education was given to all components, both in the treatment group and in the control group with p value = 0.001. While the delta test showed that there was a significant difference between the treatment group and the control group with p value = 0.001.

Tuberculosis Prevention Behavior

Analysis of the behavior of preventing tuberculosis transmission before and after the intervention was given showed that there was a significant difference from the average score of the transmission prevention behavior before and after the intervention and standard education was given to all components, both in the treatment group and in the control group with p value = 0.000. While the delta test showed that there was a significant difference between the treatment group and the control group with p value = 0.000.

DISCUSSION

Health Education to Improve Drug-Drinking Behavior for Tuberculosis Patients

Based on the mean value of pretest and posttest, the treatment group experienced a significant increase after being given the intervention than the control group. Clients are given knowledge about tuberculosis drugs which include types of drugs, benefits of taking medication, side effects of taking medication and follow-up if medication side effects occur. The behavior of taking medication for tuberculosis patients in this study is defined as an activity, behavior, or behavior of the client in carrying out treatment rules in order to recover from tuberculosis. The behavior of taking medication for tuberculosis patients is very important in order to achieve optimal recovery, so that transmission to families and communities can be avoided. If the client has stopped taking tuberculosis medication, the client's behavior is not a behavior that can cure tuberculosis. Never stop taking medication is a client's behavior is not obedient in carrying out the rules of treatment.

The results of this study are in line with the research conducted by Fitri (2018), which concludes that there is a relationship between providing education and medication adherence. Education and knowledge are dominant factors that influence drug adherence in pulmonary tuberculosis patients. The success or failure of tuberculosis treatment depends on the knowledge of the client, so that it affects whether there is an effort from oneself or the motivation and support for treatment completely will affect the client's adherence to taking the drug.

Another study conducted by Ariyani (2016) stated that the provision of education can have an influence on a person's adherence to pulmonary tuberculosis treatment, where a lack of understanding of the seriousness of the disease and the results obtained if untreated causes a person's low adherence. Therefore, a good understanding of information regarding the treatment of tuberculosis is very important for clients to have. ⁽¹³⁾

The purpose of treatment for tuberculosis clients is not just to give drugs, but also to monitor and provide knowledge about this disease. In the DOTS program, it is strived for clients who have received drugs or prescriptions to continue to buy or take drugs, take medication regularly and return to control to assess treatment results.

The role of the family as a Drug Swallowing Supervisor (PMO) is very necessary to ensure the client's compliance with swallowing drugs. PMO is needed in the intensive (early) stage. Clients receive medication every day and are monitored directly to prevent resistance to all anti-tuberculosis drugs, especially Rifampicin. If the intensive stage of treatment is given correctly, usually the infectious client becomes non-infectious within 2 weeks. Most of the smear positive tuberculosis patients became smear negative (conversion) within 2 months (at the end of intensive treatment). The role of a supervisor swallowing medication or behavior assessed consists of efforts to increase patient compliance to take medication regularly and uninterruptedly, increase patient compliance to come for treatment / control and re-examine sputum according to the specified time. Family motivation and support in improving medication adherence in patients will be very much needed and will be very helpful in improving medication adherence. This is evident from the results of research on several respondents who said that the amount of family support and always being reminded to take their medicine on time were the main reasons why they were obedient.

Health Education to Improve Tuberculosis Prevention Behavior

Based on the mean value of pretest and posttest, the treatment group experienced a significant improvement after being given the intervention than the control group. The effect of health education on transmission prevention behavior can be achieved by increasing the client's perception, helping to overcome the obstacles faced in preventing transmission through home visits every week for four visits, researchers interact and discuss directly with clients.

Similar research conducted by Rizana (2016) on the effect of health education on changes in knowledge, attitudes and behavior of tuberculosis clients. The results of this study indicate that there is an effect of providing health education on the behavior of tuberculosis patients. ⁽¹⁴⁾ Research conducted by Umami (2016) on the effect of health education on tuberculosis on increasing knowledge, attitudes and behavior of clients in preventing tuberculosis transmission, stated that there was an increase in the behavior of pulmonary tuberculosis patients in preventing disease transmission after being given education. ⁽¹⁵⁾ Changes in behavior with education will produce effective changes if carried out through the "participatory discussion" method, namely in providing information not only in one direction but in two directions. This means that the community actively participates through discussions about the information it receives. ⁽⁹⁾

Health education provided to clients is a means of accessing information. Access to good information will increase understanding both the ways and the benefits of preventing the transmission of tuberculosis. This is reinforced by the finding that one that is closely related to patient behavior in preventing prevention is good access to information. ⁽¹⁶⁾

Most of the components of preventing tuberculosis transmission were carried out by patients in the treatment group. For the components of using masks, it was recorded that more were included in the good category. This is important because it needs serious attention. Because when coughing or sneezing tuberculosis patients can spread germs into the air in the form of phlegm splashes. One stone can produce about 3000 sputum sprinkling. ⁽²⁾

The prevention component in the form of cough etiquette is also in the good category. The client covers the mouth when coughing and sneezing, using a tissue or hand, then washing hands. For saliva and phlegm that comes out when coughing, most patients store it in a special place or pot when at home, and if they leave the house, the client expels saliva and phlegm by covering it with soil. Clients also avoid too close contact and do not face directly when talking to other people. In addition, patients in the intervention group mostly opened their windows in the morning and closed them in the afternoon. This is so that sunlight enters the room, especially the client's bedroom. During sleep breaks, most of the respondents sleep separately with other family members. Client bedding such as pillows and mattresses are dried once a week.

CONCLUSION

Based on the results of the study, it can be concluded that and the discussion that has been carried out, it can be concluded that health education interventions with social media reminder and audiovisual approaches are effective in increasing medication adherence and preventing tuberculosis transmission.

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