



Improvement of Knowledge and Attitudes on Tuberculosis Patients with Poster Calendar and Leaflet

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Abstract

Background: Leaflet and poster calendars are one medium to provide health education to patients with pulmonary tuberculosis on the treatment of pulmonary Tuberculosis. The purpose of this research for media want to effectivity leaflet and poster calendars on health promotion to improve the knowledge and attitudes of pulmonary tuberculosis treatment at the Martubung Public Health Center.

Methods: Research is a quasi-experimental design with pre-test and post-test group. The population in this study were all patients with pulmonary tuberculosis treatment in Martubung Public Health Center and analyzed with the wilcoxon test.

Results: The results of the study using the wilcoxon test showed that the leaflet could increase the pretest value of 10 knowledge to 11.03 ($p < 0.001$) and the attitude of having a pretest value of 41.77 to 45.7 ($p < 0.001$). The wilcoxon test results show that the poster calendar can increase the pretest knowledge value from 8.7 to 11.97 ($p < 0.001$) and the pretest attitude value from 43.7 to 50.27 ($p < 0.001$).

Conclusions: The media are most effective in improving knowledge and attitudes about the treatment of patients with pulmonary tuberculosis disease in Martubung Public Health Center is media poster calendar from the average value based on the pre-test and post-test conducted.

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INTRODUCTION

Tuberculosis (TB) is an infectious disease caused by TB (*Mycobacterium tuberculosis*), most of the TBC germs attack the lungs, but can also attack other organs of the body (Rosandali, 2016). Pulmonary tuberculosis caused by *Mycobacterium tuberculosis* is a chronic (chronic) disease that has long been known by the wider community and is feared because it is contagious (Purniti, 2015).

Based on data from the Ministry of Health in 2017, it knows that out of 194,853 people suffering from pulmonary tuberculosis in Indonesia, only 161,365 people (82.8%) experienced a cure rate for pulmonary tuberculosis patients with complete treatment, only 14,964 cases (7.7%) (Kemenkes RI, 2017). Strategies for improving quality must be hard-wired into how National TB Programs are organized, to ensure greater equity in TB service provision and implementation of evidence-based practices and clinical guidelines (J.A.Reid, 2020).

Ministry of Health data report shows that North Sumatra Province is one of the regions with the fourth-highest number of BTA positive sufferers in Indonesia, with 18,095 positive AFB cases. North Sumatra Province has a low number of complete treatments where pulmonary tuberculosis patients who receive complete treatment are only 635 people or only 3.5% (Kemenkes RI, 2017)

North Sumatra Provincial Health Office data in 2012 shows that Medan City is one of the areas with the highest detection rate of BTA (+) pulmonary tuberculosis in North Sumatra Province with 89.42 people. Based on data from the Medan Municipal Health Office in 2018, it shows that the prevalence of pulmonary tuberculosis sufferers in Medan City is relatively high, where almost all districts have problems with pulmonary TB. The data from the Medan City Health Department report in 2018 showed that there were 26,330 suspected pulmonary tuberculosis cases in Medan City with 2,570 cases of pulmonary tuberculosis in Medan City. Medan City is an area that has a high risk of MDR TB; this is inseparable from the increasing prevalence of pulmonary tuberculosis patients in Medan City and the cure rate for pulmonary tuberculosis patients who did not meet the set

target, namely 85%.

The 2017 Medan City Health Profile data shows that as many as 2,893 people who received BTA (+) treatment and who experienced a cure were 2,163 people (75%) even though the Ministry of Health had set a target for curing pulmonary tuberculosis of 85%. Martubung Public Health Center is one of the areas that has a dense population of 132,584 people with a female population of 85,232 people and a male population of 47,352 people, based on data from the profile of the Medan City Health Service in 2018 (Dinas Kesehatan Kota Medan, 2019).

Knowledge of TB patients about TB treatment comes from print media, electronic media, family and counselling provided (Siregar, 2018). Multidrug-resistant tuberculosis (MDR TB) patients have started taking pulmonary tuberculosis drugs and undergoing routine treatment because they are aware and know the dangers they will get if they stop taking the drug to the healing process of their disease (Lailatul, 2015).

Improvement of guidance and quality of service in Pulmonary TB prevention program by involving the family with giving information is expected, so the patient will make prevention efforts to pulmonary tuberculosis disease to support local government effort in decreasing pulmonary TB incidence (Pratiwi, 2019). Leaflets in the mother tongue will improve nurse / family-patient communication in tuberculosis treatment so that the tuberculosis treatment program can succeed (Guix-Comellas, 2017).

METHODS

This type of research is a quasi-experiment with a pretest-posttest design. This study used two groups, namely the group that given counselling treatment with poster calendar and the other groups' given extension treatment with leaflet media.

The study population was all pulmonary tuberculosis patients who received treatment at the Martubung Public Health Center, Medan City. The sampling method referred to as respondents in this study was purposive sampling (sample design based on specific considerations made by researchers) as many as 60 people who divided into two groups, namely,

leaflet media and poster calendar.

The data collection tool in this study was a structured questionnaire containing some questions which the respondents filled in themselves when distributed. This provision applied when the pre and post-tests carried out for both groups regarding knowledge and attitudes about pulmonary tuberculosis treatment. Secondary data is data obtained from Martubung Public Health Center demographic and geographic data of the research area in Martubung Village, documents studies, and health journals related to this research.

Univariate data analysis carried out to obtain an overview of the frequency distribution of respondents. This analysis used to obtain an overview of the independent variable (health education media, poster calendar of treatment and health education leaflet media) and the dependent variable (knowledge and attitudes about childhood pulmonary tuberculosis disease). Bivariate analysis carried out to test the effect of media poster calendars and leaflets in increasing the knowledge and attitudes of patients about pulmonary tuberculosis disease at the Martubung Public Health Center in Medan City using wilcoxon test statistics.

RESULTS AND DISCUSSIONS

This research was conducted on 30 respondents who received counselling about TB treatment using leaflet media and poster calendar.



Figure 1: Poster Calendar about Tuberculosis Treatment



Figure 2: Leaflet about Tuberculosis Treatment

The wilcoxon test results obtained p-value = 0.001, meaning that statistically, it shows there is a relationship between knowledge and counselling with leaflet media. In contrast, the counselling group that was given poster calendar experienced an average increase from 8.7 to 11.97 with p = (0.001) <0.05 means that there is a significant change in knowledge in the group using poster calendar.

The wilcoxon test results obtained p-value = 0.001, meaning that statistically, it shows that there is a relationship between attitudes and counselling with leaflet media. In contrast, the counselling group that was given poster calendar experienced an average increase from 43.7 to 50.27 with p = (0.0001) <0.05 means that there is a significant change in knowledge in the group using poster calendar.

Table 1. Analysis Score Knowledge and Attitude Treatment of TB on Leaflet and Poster Calendar

		Knowledge		p
		Mean		
Leaflet	Pretest	10		<0,001
	Posttest	11,03		
Poster Calendar	Pretest	8,7		<0,001
	Posttest	11,97		
Attitude				
Leaflet	Pretest	41,77		<0,001
	Posttest	45,7		
Poster Calendar	Pretest	43,7		<0,001
	Posttest	50,27		

Knowledge is the result of knowing, and this happens after someone senses a specific object (Buaton, 2019). Without knowledge, a

person has no basis for making decisions and determining actions against the problems at hand (Azhar, 2014).

Tuberculosis (TB) is one of the public health problems that cannot be overcome. The problem is caused by several factors, one of which is the non-compliance of patients with treatment (Owa, 2020)

The provision of information by the Drug Swallow Supervisor (PMO) will greatly impact TB patients' knowledge in taking medication (Ashari, 2020). Knowledge about TB treatment will be related to the consumption of TB drugs so that it can reduce TB cases in Indonesia (Setyaningrum, 2019).

The results of the analysis using the Wilcoxon test obtained a probability value (p) < 0.001 , which means that the leaflet and poster calendar was effective in increasing knowledge about pulmonary tuberculosis. The results of Karuniawati (2019) research show that cadres distribute guidebooks and leaflets so that they can increase the knowledge of pulmonary tuberculosis patients about pulmonary tuberculosis disease. Khaerani (2020) stated providing health education with the media will increase knowledge and attitudes towards health problems. Providing health education using the media will make the target group more interested in paying attention to the material presented. Supports an effective strategy to improve patients' attitudes, adherence, and quality of life with pulmonary TB and increase knowledge about TB treatment (Swarjana, 2019).

The low level of knowledge of pulmonary tuberculosis patients about pulmonary tuberculosis is inseparable from the community in the work area of Martubung Public Health Center who has a low level of education such as having graduated from junior high school and some people have only graduated from elementary school. The education level of pulmonary tuberculosis patients will determine whether or not pulmonary tuberculosis patients easily absorb and understand the information given to them (Nasution, 2019). Health workers at the Lung TB program at Martubung Public Health Center must be active in giving explanations

about Lung TB and pulmonary tuberculosis treatment to pulmonary tuberculosis patients and Supervisors swallowed drugs (PMO) in the hope that they will be given an explanation of pulmonary tuberculosis disease and pulmonary tuberculosis treatment to pulmonary tuberculosis patients and PMO will increase their knowledge about pulmonary tuberculosis disease. The result revealed Simamora (2017) that education using module approach affects the role of health cadres in TB case

Health education using leaflet has a positive effect on increasing public knowledge and attitudes. Learning media is one of the determining factors in the continuity of the learning process that needs serious attention from the teacher. The results of this study are in line with Siregar (2020) that the use of leaflets with a size of 20x30 cm containing 200-400 words, the content of the words must capture with one reading. For example, leaflets about diseases caused by certain behavior.

For poster calendar, the results of the analysis using the Wilcoxon test showed an average score of knowledge before treatment was 8.7 with a minimum value of 6 and a maximum value of 12 while the average after treatment was 11.97 with a minimum value of 10 and a maximum value. 13. Besides, many respondents had increased knowledge of 27 respondents, and some respondents did not experience increased knowledge (fixed knowledge before and after counselling using poster calendar) as many as three people. For the probability value (p) < 0.001 , which means the poster calendar is effective in increasing knowledge about pulmonary tuberculosis.

Retnaningtyas (2020) show that the calendar application is an effective method of increasing knowledge. Majid (2018) stated health education using calendar media is recommended to be accompanied by health education methods such as lectures, demonstrations or other methods. Participants can understand what the implementation team says, but the implementation team finds it difficult when asked by the participants.

Calendar media as an alternative media for health education expected to increase knowledge and behavior more 15% (Usmaran,

2019). Health promotion is something that needs intensely because the program can increase knowledge, attitudes and community participation (Syahputri, 2020).

The use of appropriate media will increase people's attention to the topic to be studied, with the help of media, people's interest and motivation can increase. The community will be more concentrated, and it is hoped that the learning process will be better so that in the end the community's learning achievement can be improved (Respati, 2016).

The existence of messages in the health promotion media will make the community, groups or individuals gain knowledge about nutrition and better health. This knowledge is then expected to form a right attitude, and in the end, it is hoped that it can influence the actions behavior of nutrition and health in the target group (Prameswari, 2018).

The increase in knowledge that occurs in the poster calendar group can occur due to exposure to poster calendar that conveys messages about prevention and treatment as well as information on the Gregorian calendar. Poster calendar are made in a more straightforward but attractive form because the visual images are large enough and can be affixed to the walls of the house so that the messages conveyed are easy to understand and re-read by respondents who are mostly primary school and junior high school educators through the pictures and messages on the posters calendar. Thus, the object regarding the treatment of pulmonary tuberculosis on poster-calendar media has been very effective in increasing the respondents' knowledge.

Changes in attitudes as in behavior change theory influenced by factors of knowledge, beliefs/beliefs based on perceived needs and benefits, the presence of such knowledge as in previous knowledge are obtained from sensing results (Jannah, 2020). One is obtained in education or the learning with leaflets that provide information and education about the importance of treating pulmonary tuberculosis.

Based on the results of the analysis using the wilcoxon test, the probability value (p) < 0.001 means that the leaflet media is effective in improving attitudes about pulmonary

tuberculosis.

Illustrates that the average respondent shows the effect of health promotion using leaflet media on respondents about the treatment of pulmonary tuberculosis disease.

In line with the research of Barus (2019) which also shows that health education can improve attitudes, the most massive increase in knowledge is in the group given leaflet media compared to the group given other media. The results of research that are not much different are expressed by Saiful (2014), which shows that extension using leaflet media can improve public attitudes about the prevention of pulmonary tuberculosis disease.

Health promotion using calendars has benefits to provide health information as well because it is practical, and for attractiveness, calendars can be printed with various color and design variations. So that health promotion activity using a calendar will be more effective and efficient.

The results of the analysis using wilcoxon test showed that an average number of attitudes before treatment was 43.7 with a minimum value of 38 and a maximum value of 49, while the attitude after treatment obtained an average of 50.27 with a minimum value of 45 and a maximum value of 53. All respondents experienced an increase in attitude. Leaflets have been shown to improve attitudes about Tuberculosis treatment. Interventions that were carried out using the media turned out to make respondents more interested in paying attention to the problems described and made it easier for respondents to understand these problems to be resolved.

Health office, and health workers conduct health promotion, about the dangers of smoking in the home using the media calendar so that people can improve attitudes that will have an impact on the behavior of people who smoke in the home. The results of this study Respati (2016) show the calendar is a tool that can simplify the education and monitoring process. The implementation of the poster calendar requires excellent cooperation between cadres and the community. The community must be aware, willing, and able to participate actively.

Media using leaflets will allow the

media to touch aspects of belief, belief, emotion, attitude and can further change a person's behavior. The increase in attitudes in the counselling group with leaflet media is due to the leaflet media being able to convey messages that can be accepted by the communicants and the communicants feel touched by aspects of their attitude so that they provide a positive attitude towards the treatment of pulmonary tuberculosis.

Aulia (2020) said poster calendar is more effective than leaflet media because poster calendar media made in the form of calendars. Poster calendar is a short message in the form of pictures and images in poster calendar can also be in the form of paintings, illustrations, cartoons, pictures or photos. Media poster calendars are made to influence people, give short messages.

Calendar media can affect respondents' knowledge because calendar media can be used as an effective learning tool for respondents to read and be exposed to the information contained in the media. The calendar design that contains material that is easy to understand and is equipped with bright colours and images can attract respondents to read it. Besides, the calendar used as the medium in this study is small so that the respondent can read it while sitting and relaxing.

In this study, a poster calendar intervention gives, the information received by a subject to affect a change in attitude requires repetition so that the process and understanding occur in the subject when viewing poster calendar, the respondent will get various knowledge from his activities every day. Changes and increases in the value of knowledge and attitude are possible because of various things related to the nutritional education process, including material that is available and made in media that attracts interest and interesting educational methods.

When verbal information is provided to the patients, they often tend to forget it. Visual aids or pictograms, as they are commonly known, are tools that are widely used for imparting knowledge to patients (Shrestha, 2018).

The repetition of messages that respondents get when every day they see the

date on the poster calendar will be able to help change attitudes. It is related to building trust and confidence from each repetition of information provided so that the respondent will receive and understand the message conveyed. Then the respondent can determine attitudes by those conveyed, including the attitude of pulmonary tuberculosis patients about pulmonary tuberculosis treatment.

The results of this study will contribute to pulmonary TB treatment interventions, especially efforts to improve treatment and attitudes of pulmonary TB sufferers in treatment. Health education using the media poster calendar is proven to increase the knowledge and attitudes of pulmonary TB sufferers about pulmonary TB treatment that saturate them. Patients with pulmonary tuberculosis often experience withdrawal because they are bored and do not understand the treatment they are taking. If pulmonary TB patients understand the treatment they are doing, pulmonary TB treatment interventions can run smoothly, and the success rate of pulmonary TB treatment will increase.

CONCLUSION

Poster calendar and leaflet media are an influential health education effort to improve the knowledge and attitudes of pulmonary tuberculosis patients about pulmonary tuberculosis treatment in the Martubung Public Health Center, where this can be seen from the increase in the average score obtained before and after the intervention.

The most influential media in increasing the knowledge and attitudes of pulmonary tuberculosis patients about the treatment of pulmonary tuberculosis in the working area of the Martubung Public Health Center is a poster calendar of the average value based on the results of the pre-test and post-test conducted.

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