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Group Discussion and Booklet for Tuberculosis Prevention in Manado

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Abstract

The study aims to determine the effect of using focus group discussions and booklets for the prevention of tuberculosis in Manado. Type of Research "A quasi-experimental design with Pre and Post Test Group ". The population is tuberculosis patients who seek treatment at the Public Health Center as many as 200 cases. Samples were taken using the Slovin formula and met the inclusion criteria of 113 respondents. Collecting data by providing counseling using booklets, and Group discussions. The data was processed using the "Wilcoxon Test" statistical test. The results showed that the gender of women was 69(61%), high school education 66(58,4%), housewife occupation 43(38,1%), average age 43,75+Std.15,095. Result of research: cause of pre test 96(85%), post test 105(92,92%) p0,000, pre test 63(55,8%) post test 90(79,64%), p0,000; source of pre-test transmission 75(66.4%) post-test 91(80.53%), p0.000, risk of pre-test transmission 67(53.9%), post-test 93(82.30%) p0.000, seeking treatment pre test 97(85.8%, post test 109(96.46%), p0.000, prevention pre test 75(66.4%), post test 101(89.38%), p0.000, recovery pre test 109(96.5%) post test 107(94.7%) p0.000, treatment 107(94.7%), post test 110(97.34%), p0.000, nutritious food pre test 100(88.5%) post test 105(92.92%), p0.000.- Conclusion: There is a significant effect between the use of focus group discussions and booklets in improving the knowledge, attitudes, and behavior of respondents. Suggestion: Continue to carry out health education to improve the knowledge, attitudes, and behavior of patients.

Introduction

Tuberculosis is a communicable disea-se still to community problem etiology of mycobacterium tuberculosis (M.TB) transmitted when an individual with TB expels the bacteria into the air through coughing. Approximately a quarter of the world's population is infected with M.TB, and it is one of the leading causes of death of ten causes of death worldwide and the leading cause of death (Jeremiah et al., 2022; Mohammed et al., 2020). Multisectoral involvement in risk factors such as poverty, malnutrition, HIV infection, diabetes, and smoking can increase morbidity and mortality (Chakaya et al., 2021; Cintron et al., 2021). TB cases in Indonesia have decreased by 200,000. The TB incidence rate in 2019 was 842,000 cases, making Indonesia the country be at the third largest TB burden in the world after India and China (Kemenkes RI, 2018). One of the efforts to control and prevent the spread of TB disease is through health promotion using a combination of lectures and audiovisual media to influence changes in knowledge and attitudes of TB patients in TB prevention (Malini et al., 2021).

Prevention of TB transmission through contact between family members is by providing education about TB disease through clean and healthy life behavior (PHBS) using posters and leaflets as well as providing additional food and masks to families showing an increase in knowledge about pulmonary TB (Malini et al., 2021). Traditional health promotion media, such as leaflets and posters, are still useful in the digital era. Especially for adult respondents.

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This form of media is more effective when combined with other media such as video, telephone interaction, games, and others (Lailatul et al., 2019).

In 2019, TB remained the most common cause of death from an infectious pathogen. Globally, an estimated 10.0 million people have TB disease, and there are an estimated 1.2 million TB deaths among HIV-negative people and an additional 208,000 deaths among people living with HIV. Adults accounted for 88%, while children, aged <15 years were 12% of all people with TB. Most people with TB in 2019 were in Southeast Asia (44%), Africa (25%), and the Western Pacific (18%), with smaller percentages in the Eastern Mediterranean (8.2%), America (2.9%), and Europe (2.5%). Eight countries account for two-thirds of the global total: India (26%), Indonesia (8.5%), China (8.4%), Philippines (6.0%), Pakistan (5.7%), Nigeria (4 .4%), Bangladesh (3.6%), and South Africa (3.6%) (Chakaya et al., 2021).

The prevalence rate of TB cases in the city of Manado is still high, namely 990 cases. The highest case notification rate is the Tuminting Health Center with 153, Ranotana Weru with 120, Paniki Bawah with 115, Tikala with only 107, and Sario 110 cases. Overall, cases of TB-positive were treated as many as 1,044, with a cure rate of 912 (87.36%). The problems identified in this study are: "Does the use of health promotion methods and media affect efforts to prevent pulmonary tuberculosis in five Public Health Centers in Manado City? The purpose of this study is to first prepare health promotion methods and media, and use health promotion methods and media to increase knowledge and change patients' attitudes and behavior about TB. In addition, the importance of this study is to disseminate information about TB, its causes, symptoms, sources of transmission, risk of transmission, treatment-seeking behavior, prevention behavior, perceptions of healing, treatment protocols, and behavior regarding the consumption of nutritious foods (Cintron et al., 2021; WHO, 2021).

Method

This type of analytic observation research, with Pre and Post Test One Group Design, took place in five health centers in Manado from January to October 2022. The population is all patients who seek treatment at five health centers as many as 200 respondents. Determination of the location using cluster sampling by dividing the population into 5 groups. Public Health Center representing the East, West, North, South, and Central regions in Manado with the highest TB cases. Sampling using incidental sampling met the inclusion criteria, namely being willing to come to the research location as amount of 113 respondents. The independent variable is the counseling method with group discussion, booklets, and the dependent variable is the change in the behavior of the patient regarding efforts to prevent pulmonary TB disease. A pre-test was conducted on the variables to be studied, then the provision of counseling and group discussion actions with booklets. Later, a post-test was carried out. The data collected are processed and presented in a frequency distribution table. Statistical analysis was by the Wilcoxon test to examine the effect of health education on changes in patient behavior. The results are presented and discussed for each variable by comparing the results of previous studies. This research has obtained research ethics feasibility with the Health Research Ethics Commission number: KEPK. 01/05/092/2022. May 25, 2022.

Results and Discussion

TABLE 1. Distribution of Gender, Education and Occupation of Tuberculosis Respondents at the Manado City Health Center in 2022

Variables	n	(%)
Gender :		
Male	44	38,9
Female	69	61,1
Education :		
Primary School	14	12,4
Secondary School	18	15,9
High School	66	58,4
University	15	13,3
Occupation :		
Household	43	38,1
Laborer	15	13,3
Student/No Working	18	15,9
Business	25	22,1
Civil Employer	12	10.6

Source: Primary Data, 2022

Table 1 above shows that most of the respondents are female, as many as 69 respondents (61.1%), most of the education level is equivalent to High School, namely 66 respondents (58.4%), and most respondents have jobs as housewives as many as 43 respondents (38.1%).

The above data shows that the average age of respondents is 43.75+Std. The deviation is 15.095, the median is 43, the minimum value is 16, and the maximum is 77.

TABLE 2. Distribution of Pre Test and Post Test Research Variables and Result Wilcoxon Test Statistics

Variables	Pretest		Posttest		Test Statistics	
	n	(%)	n	(%)	Z	p-Value
Knowing of Cause :						
a. Yes	96	85	105	92,92	-8.544b	.000
b. No	17	15	8	7,08		
Signs and Symptoms :						
a. Yes	63	55,8	90	79,64	-9.192b	.000
b. No	50	44,2	23	20,36		
Transmission Sources :						
a. Yes	75	66,4	91	80,53	-9.232b	.000
b. No	38	33,6	22	19,47		
Transmission Risk :						
a. Yes	67	59,3	93	82,30	-9.239b	.000
b. No	46	40,7	20	17,70		
Seek Behavior of Health						
a. Yes	97	85,8	109	96,46	-9.232b	.000
b. No	16	14,2	4	3,54		
Behavior of Prevention Care:						
a. Do	75	66,4	101	89.23	-9.232b	.000
b. No	38	33,6	12	10,62		
Seek Behavior of Health Care:						
a. Do	109	96,5	111	98,23	-9.231b	.000
b. No	4	3,5	2	1,77		
Can be cure						
a. Yes	107	94,7	110	97,34	-9.239b	.000
b. No	6	5,3	3	2,66		
Behavior of nutrition						
a. Do	100	88,5	105	92,92	-9.239b	.000
b. No	13	11,5	8	7,08		

Source: Primary Data., 2022

“Wilcoxon, α 0,05 *Significance p<0,05

Based on the data in table 2 regarding the results of pre-test and post-test on research variables, it shows that most respondents stated that knowing the cause of TB was 96 respondents (85%) and after giving health education actions increased to 105 respondents (92.92%), respondents knew and feel symptoms before health education by 63 respondents (55.8%), after post test to 90 (79.64%); sources of transmission were 75 (66.4), post test results were 91 (80.53%); risk of transmission of pre test results 67 (53.9%) and post test 93 (82.30%); behavior seeking treatment, the results of the pre-test respondents said that they made efforts to seek treatment at health care facilities as many as 97 (85.8%) and post-test 109 (96.46%); respondents who made efforts to prevent TB transmission from pre-test results were 75 (66.4%) and post-test were 101 (89.38%); Respondents' perceptions of TB cure before health education actions were 109 (96.5%) saying that TB could be cured, and after post test 111 (98.23%); the results of the pre test regarding behavior regarding TB treatment, most respondents carried out the treatment protocol according to the doctor's advice as many as 107 (94.7%) and increased and after the post test it was 110 (97.34); the results of the pre-test on the behavior of practicing eating nutritious food as many as 100 (88.5%) said they did, and improved after health education as much as 100 (92.92%).

This research is analytic with the "Pre and Post Test One Group Design" carried out in five Public Health Centers in Manado City for 7 months from April to October 2022. The research method used counseling methods with group discussion and booklet media. Before counseling about TB, a questionnaire was given to measure the respondents' initial knowledge, attitudes, and actions regarding TB. After that counseling was carried out using booklet media, and then the final measurement was carried out using a questionnaire. Respondents who participated in this study amounted to 113 TB patients. The variables measured in this study were the causes of TB, symptoms of TB, sources of TB transmission, risk of TB transmission, behavior seeking treatment, respondents' behavior of prevention, perceptions about TB cure, perceptions about treatment, and behavior about nutrition, as well as demographic data of respondents including gender, education, working, and age of the respondent.

Demographic data of respondents in this study showed that most were female, with as many as 69 respondents (61.1%). In contrast with (Evelyn, 2021), most education levels are equivalent to High School, as amount 66 respondents (58.4%), and most respondents have jobs as housewives, as many as 43 respondents (38.1%). The mean age of respondents is 43.75+Std. The deviation is 15.095. The median is 43, a minimum score of 16, and a maximum of 77. The results of this study, when compared with the results of research by (Evelyn, 2021), most of the age group was 46-55, as many as 18 (35,3%), with low education, as many as 18(35,3%)(Evelyn, 2021), unemployed 95(54,9) as control and case 92(53,2%) (Diriba & Awulachew, 2022), male as many as 27 (84.4%), junior high school graduates as many as 11 (34.3%), doesn't work 13 (40.6%). These results as suited to research by (Kigozi et al., 2017).

The results of the study on the knowledge, attitudes, and behavior of respondents about TB increased after health education was carried out with counseling methods and the use of booklet media where the p-value was 0.000 <p0.05., About the causes of TB, TB symptoms, TB transmission sources, TB transmission risk, behavior Seeking Treatment, Prevention Behavior, Perceptions of TB Healing, and Perceptions of Nutrition for Pre Test and Post Test. So it can be concluded that "there is an effect of using health promotion methods and media on changes in the behavior of TB respondents about the causes of TB, TB symptoms, Sources of TB Transmission, Risk of TB Transmission, Treatment Seeking Behavior, Prevention Behavior, Perceptions of TB Cure, Perceptions of Treatment and Behavior of Nutrition in five Manado City Health Centers. It is in line with the results Kigozi et al. (2017), which found that in the intervention group, there was an increase in the behavioral score of 28.46, with p0.000.-meaning that health education with audiovisual media could improve the respondent's behavior in preventing TB (Austa et al., 2022).

Respondents' knowledge about the causes of pre-test TB mostly answered correctly

96 respondents (85%) after the post-test health education increased to 113 (100%), p0.000. The cause of TB is Mycobacterium Tuberculosis (M.TB), said that TB germs (Mycobacterium Tuberculosis) are Rod-shaped and acid resistant so it is often known as Acid Resistant Basil (BTA) (Lailatul et al., 2019; Puspitasari et al., 2022; Saputra et al., 2020). TB germs are so small that TB germs in inhaled droplet nuclei can enter the alveoli and affect the lung parenchyma and cause pulmonary TB. But these germs can infect other organs (extrapulmonary TB) such as the pleura, lymph nodes, bones, and other extrapulmonary organs.

Based on the results of data collection that using a questionnaire about symptoms of TB, most of the respondents 65 respondents (55.8%) knew the symptoms of TB, after health education, there was an increase of 90 respondents (79.6%), p-value 0.000. Symptoms of TB disease depend on the location of the lesion, so it can show clinical manifestations as follows: Cough for more than 2 weeks, Cough with sputum, and cough with blood. May be accompanied by chest pain and shortness of breath with other symptoms including malaise, weight loss, Decreased appetite, Chills, Fever, and Night sweats. It may be because respondents are not aware of what is experienced as symptoms of TB, but after being given education health, respondents become understanding of the signs and symptoms of TB (Ngigi & Busolo, 2018).

Regarding the source of TB transmission, from 113 respondents who answered correctly were as many as 75 respondents (66.4%), post-test by 91 respondents (80.5%), p0.000. A significant source of transmission is the sprinkling of sputum of TB patients and equipment that has not been cleaned. Pulmonary TB transmission is related to house conditions with a solid category, and there are smear-positive pulmonary TB patients because the source of pulmonary TB transmission is smear-positive pulmonary TB patients. So not all dense residential houses are always at risk of developing pulmonary TB if there are no smear-positive pulmonary TB patients in the house. It is also possible that pulmonary TB transmission can occur in families that are not densely populated or densely populated if there are smear-positive pulmonary TB patients in the house (Asyary et al., 2017; Havumaki et al., 2021). Very significant risk factors for transmission are close contact, smoking, HIV/AIDs status, BCG immunization, income, and class I narcotics users (Diriba & Awulachew, 2022; Havumaki et al., 2021).

The pre-test on the risk of transmission was 67 (53.9%) in knowing the risk of transmission, the post-test was 93 (82.30%), and the p-value was 0.000. The most vital risk of TB transmission is people living in the same house with TB sufferers, close contact with TB sufferers, people with poor nutrition, smokers, alcohol drinkers, people with HIV/AIDs, and people with diabetes mellitus (DM). Methods Prevention of the risk of transmission through health education is very vital. Especially regarding education using video partners has been shown to increase the knowledge and behavior of respondents. Respondents who received the intervention had a higher level of knowledge and attitude scores than those who did not receive the videotaped education intervention, and this difference was statistically significant (WHO, 2021), (Lailatul , 2019; Carwile et al., 2022; Nthiga et al., 2017). The results of this study using booklets and health education are different from the research (WHO, 2021). But the increasing knowledge, attitudes, and behavior are also very significant, as well as (Diriba & Awulachew, 2022). The results of respondents' pre-test of behavior seeking treatment to health care facilities were 97 (85.8%) and post-test 109(96.46%), p0.000. It is probably because the respondents paid attention to the material provided and the motivation to use booklet media (Austa et al., 2022).

This result is also in line with the Ministry of Health saying that it is necessary to use the latest technology to monitor treatment, for example, the use of technology-based information systems such as the use of software on mobile phones, short messages as reminders to take medication, and recording internet-based TB treatment monitoring, and interactive educational materials. The use of the latest technology in tuberculosis monitoring is aimed at facilitating contact between tuberculosis patients, treatment monitors

and treatment service providers during the treatment process (Kementerian Kesehatan RI, 2020). The behavior of respondents who made efforts to prevent TB transmission from pre-test results was 75 (66.4%), and post-test was 101 (89.38%), p0.000, respondents' perceptions of TB cure before health education were 109 (96.5) %) said that TB could be cured, and after the post-test, 111 (98.23%), p0.000. The results of the pre-test regarding behavior regarding TB treatment, most respondents carried out the treatment protocol according to the doctor's advice, as many as 107 (94.7%). After the post-test, it was 110 (97.34), p0.000. The results of the pre-test on the behavior of practicing eating nutritious food were 100 (88.5%) said they did, and improved after health education was 100 (92.92%), p0.000 (Nthiga et al., 2017; Wang et al., 2022).

The results of this study when compared with existing epidemiological evidence, population characteristics and the health system carried out in Indonesia, the stakeholders have made a consensus on the order of the gaps in the prevention of tuberculosis in Indonesia as follows: Individu was diagnosed with tuberculosis but not starting treatment; People with symptoms of tuberculosis who do not seek treatment; Individu with tuberculosis who come to a health facility but are not detected of tuberculosis; People diagnosed with tuberculosis and treated by health care providers but not reported to the program; Persons with reported tuberculosis treatment but who did not recover or did not complete their treatment; People affected with tuberculosis or at high risk of becoming ill with tuberculosis (Kementerian Kesehatan RI, 2020; Malini et al., 2021; Puspitasari et al., 2022; Amare et al., 2022).

People with tuberculosis or its symptoms that have not/not accessed health services are 43%, and only 31% seek self-medication based on the results of the 2013-2014 Tuberculosis Prevalence Survey. It largely contributed to the low coverage of Tuberculosis treatment which only reached 67% (61-73%) in 2018. It means there are still around 33% (27%-39%) of tuberculosis cases that are neither diagnosed nor reported. People with symptoms of tuberculosis do not access health services due to lack of knowledge about it. Knowledge about tuberculosis is vital in affecting treatment seeking (Amare et al., 2022). Of those who reported coughing for 14 days or coughing up blood or abnormal lung radiographs, only 26% sought treatment at a health facility. 43% did not seek treatment, and 31% did self-medication. The proportion who did not seek treatment was higher in men. About the reason, 75% did not seek treatment because they felt their symptoms were not serious(Kementerian Kesehatan RI, 2020; Kigozi et al., 2017). Of those who reported coughing 14 days or coughing up blood or abnormal lung X-rays, 77% knew the main symptoms of Tuberculosis, 66% knew how it is transmitted, and 76% knew that it is curable. However, only 22% know that TB treatment is free (Kementerian Kesehatan RI, 2020; Amare et al., 2022)

Behavior about nutrition from the pre-test results, as many as 100 (88.5%) said they practice consuming nutritious food after the post-test increased by 105 (92.92%). Eating nutritious food is very important in maintaining the immune system, especially in increasing the body's immune system to fight infection with TB germs (Nthiga et al., 2017; Carwile et al., 2022; Wang et al., 2022; Tesfaye et al., 2021).

Conclusion

The use of health education methods in the form of counseling using booklet media significantly increases the knowledge, behavior, and perception of TB patients about the causes, symptoms, transmission sources, transmission risk, treatment-seeking behavior, prevention behavior, perceptions about cure of TB, treatment behavior and behavior to consume nutritious food. It is recommended for health workers, those in charge of TB transmission prevention and control programs to continue educating patients, families, and communities by disseminating information as widely as possible about TB.

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