



Social determinants and tuberculosis incidents on empowerment case finding in Majene district[☆]



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Abstract

Objective: This study aims to increase the empowerment of active case finding through counseling the Flipchart containing the social determinants of Tuberculosis.

Methods: The research use qualitative and quantitative method. The subjects of the study were 200 samples obtained by using Slovin formula. Data collected using questionnaire and in-depth interview with the samples. Data analysis using Path Analysis statistics to find the link between knowledge and attitudes toward TB incidence (2,521) for quantitative data tested by Wilcoxon.

Results: Average score of knowledge before 41.86 and after intervention 102.34 with a value of $p=0.001$ and attitudes showed that there were differences before and after intervention where the value of $p=0.001$ discussion and conclusions; knowledge of attitudes and case-finding actions before and after intervention increased.

Conclusion: The result of the study showing that the model of flipchart intervention to increase knowledge of housewives and cadres finding TB cases.

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Introduction

Classical tuberculosis which appears to be a problem in 4.0 region where WHO reports TB is one of the top 10 causes

of death and a leading cause of infectious agents, causes around 1.3 million deaths among HIV-negative people and around 300,000 deaths from TB among HIV-positive people. It is estimated that around 10 million new TB cases are equivalent to 133 cases per 100,000 population.¹

The study was conducted in Majene Regency, West Sulawesi Province, the data obtained at Totoli Health Center illustrated the last five years TB incidence, namely in 2014=27 patients (39%); 2015=28 patients (42%); 2016=18 patients (28%); 2017=31 patients (51%) and 2018=54 patients (62%) this data reflects that in the Totoli public health center region from year to year did not show

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progress in controlling tuberculosis even though the program's efforts had been maximally carried out in accordance with the rare activities recommended. The Indonesian Ministry of Health is interesting to examine what factors make the incidence of TB in Totoli Public Health Center continue from year by year.

Why is it important that we look for the best alternative about this case finding method because if the discovery fails it means the number of patients being treated is also reduced as a result of the TB control program being less successful. West Sulawesi currently has a high incidence rate of 422 per 100,000 population and a very low case finding rate of 25%.² The high incidence of incidents that have not been matched with high case findings stimulates research to find the right case finding method. scientific accountability.

The link between the rate of incident and the social determinant conditions of tuberculosis according to K. Lonnroth's theory about the link between socio-economic and proximate risk factors of TB,³ we can predict temporarily that Mandar ethnic communities in Majene Regency are in a densely populated environment, poor ventilation, polluted air supported by low socio-economic conditions, risk of infection and TB disease. This study to increase the empowerment of active case finding through counseling the Flipchart containing the social determinants of Tuberculosis.

Method

Design

The type of research was an operational research with descriptive analytic design and quasi experiment.

Population and study setting

This research was conducted in Majene Regency, West Sulawesi, during April to December 2018. The population for the quantitative study was a potential group consisting of community and religious leaders, groups of cadres, and housewives sampling based on quota. 200 samples obtained from the Slovin formula.

Variables

The variables of this study were age, gender, income and education were analyzed in qualitative method. While the variable like effectiveness of the flipchart that had been modified with the determinants of TB social analyzed by using quantitative method. The incidents of tuberculosis obtained from Totoli Health Center illustrated the last five years TB incidence. Age in this study is the length of life of respondents from birth to research. Gender are the biological characteristics of respondents seen from outward appearance. Income is money that gained by the respondent from their work every month. Education in this research is the level of respondent's knowledge and attitudes about prevention and spread of TB incidence. All the variables in qualitative method obtained from interview by using questionnaire and in-depth interview with the respondents. Variable effectiveness of the flipchart to increase the

knowledge and attitudes about prevention and spread of TB incidence. Data collected by using pre-test and post-test questionnaire.

Data collection

Data collection for qualitative was done with FGDs, questionnaires and in-depth data interviews in tabulations with excel were processed with SPSS the results were confirmed back to representatives of community leaders to ensure valid data. Quantitative data based on the number of samples drawn by sampling quota based on the number of potential groups obtained by the number of samples varies by group.

Data analysis

Qualitative data collected was estimated and analyzed based on behavioral patterns and real conditions at the research location and the pattern of identity obtained from the public health center reporting, then the environmental conditions were obtained through field data collection. Quantitative data obtained from 200 respondents that given pretest format about TB was calculated for value, then counseling intervention with flipchart media containing TB social determinants of knowledge and understanding of TB data was analyzed with path analysis and Wilcoxon statistical results to determine whether there was knowledge and attitude change after intervention.

Ethical aspect

Ethical permission has been obtained from the ethics committee Faculty of Public Health Hasanuddin University. All subjects were given informed consent before being included in the study.

Results

Based on the data of 200 respondents obtained by the most female sex (58.5%). Age shows the highest number of respondents in the age group 31–40 (62.5%). The highest level of education is at the elementary school level (62.5%). Distribution of respondents according to Employment, the highest number of respondents working is unclear (31.5%), and the distribution of family income per month for the most respondents is in the range of IDR. 500,001-Rp. 1,000,000 which is as much (43.0%).

Gender in this study obtained 58.5% of female respondents and 41.5% of male respondents. According to the Totoli Health Center report, there were 54 cases of TB distributed to Rangas villages, 32 cases (59%), of which 23 were women (72%) and 9 were men (28%). The study found that the percentage of cases in women was higher than men because of Mandar's women, doing more activities and interacting with other communities.

Environmental data obtained by using the questionnaire illustrated as in [Table 1](#).

Table 1 Distribution of respondents by residential environment.

Variable	Amount	
	n = 200	%
<i>House size</i>		
<12 m	131	65.5
13–45 m	66	33
>45 m	3	1.5
<i>Density</i>		
<4 people	57	28.5
5–10 people	138	69.0
>10 people	5	2.5

Path analysis

Based on the variables of age, gender, income, education on the level of knowledge and attitudes about prevention and spread of TB incidence incidents were carried out tracing the path closest to the TB incident.

Based on the path analysis image can be interpreted that there are 4 exogenous variables and 2 endogenous variables can be explained as follows.

Sex variable (0.644) education (1.586) age (0.784) income (0.229) has a *t*-statistic value < 1.96 indicating that the variable does not significantly affect knowledge. Whereas for attitudes, sex variable (1.146) education (0.497) age (1.039) income (0.624) has a *t*-statistic value < 1.96 indicating that the variable does not significantly influence attitudes. However, significant knowledge

variables directly influence people’s attitudes toward patients with pulmonary tuberculosis with a *t*-statistical value (2.521) which means greater than 1.96. Based on these data it can be interpreted that knowledge directly influences attitudes toward the incidence of tuberculosis in Mandar ethnic communities (Fig. 1).

Variable intervention study (quantitative)

Research was conducted to determine the effectiveness of the flipchart that had been modified with the determinants of TB social. This research is quasi-experimental with the subject of research of 200 potential groups (Table 2).

Test wilcoxon

Before performing the Wilcoxon test the data normality test was obtained and the data wasn’t normally distributed so that the Wilcoxon signed Ranks Test was used.

In the Table 3, above the value of $Z = -6.879$ is obtained and the value of $p = 0.001 < 0.05$, it could be interpreted that there was an effect of conducting FGDs with the flipchart method on respondents’ understanding of tuberculosis.

Discussion

The analysis of the data found that there was an increase the knowledge of respondents after an intervention in the form of a focus group discussion using the flipchart method as a promotional medium. The results were supported by previous research which suggested that by promoting TB

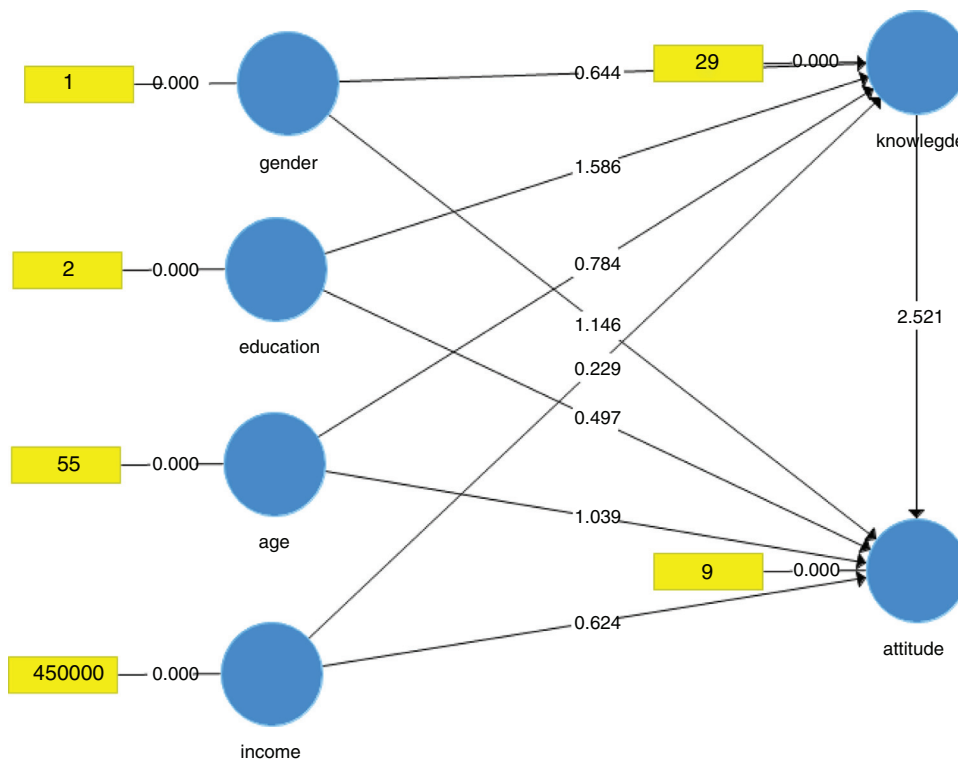


Figure 1 Path analysis.

Table 2 Distribution of respondents by knowledge regarding TB.

Variable	Amount			
	Pre-test		Post-test	
	n = 200	%	n = 200	%
<i>TB prevention</i>				
a. Avoid sharing dishes	39	19.5	0	0.0
b. Close the house window	12	6.0	2	1.0
c. Good nutrition	73	36.5	2	1.0
d. Pray	17	8.5	5	2.5
e. Do not know	56	28.0	1	0.5
f. Others	3	1.5	190	95.0
<i>Causes of TB</i>				
a. Germs	61	30.5	2	1.0
b. Virus	112	56.0	2	1.0
c. Food poisoning	1	0.5	3	1.5
d. Curse	1	0.5	0	0.0
e. Descent	23	11.5	5	2.5
f. Others	2	1.0	188	94.0

Table 3 Output of wilcoxon signed ranks test.

	Total posttest attitude – total pretest attitude
Z	–6.879
Asymp. Sig. (2-tailed)	0.001

through flipchart media, or electronic media can increase public knowledge about TB.⁴ All health care professionals including the pharmacists provide a valuable public health role in promoting community awareness of TB particularly in reducing stigma attached to TB. Thus, creating awareness at a community level could play a vital role in control and prevention of TB.⁵ Although TB health promotion directed at policy makers and healthcare workers (HCWs) is considered important to tuberculosis (TB) control, no indicators currently assess the impact of such promotional activities.⁶

The study found that there was an increase of respondents' understanding before and after the intervention in the form of focus group discussions using back sheets.⁷ Study also explains, where flipcharts are used as a communication medium to improve the understanding of respondents who have previously been tested in other pilot locations. TB control must be seen as both a public health imperative unto itself and a vital component of economic development plans. To that end, control strategies should exploit technical and operational innovations to improve TB control and care and should promote universal health coverage and social protection mechanisms to expand access to essential prevention, diagnostics, and treatment services while avoiding catastrophic costs incurred by patients.⁸

However, it is not in line with other studies conducted by a study that showed that men are likely to have TB than woman. This is caused by the habit of smoking and drinking alcoholic beverages which can reduce the body's defense system, thus facilitating exposure to disease agents. Likewise, WHO reports more male TB sufferers in women.⁹

However, even historical data from the United Kingdom reveal a marked difference in the epidemiology of TB for men and women. TB mortality in women peaked between the ages of 20 and 30 for each generation born between 1820 and 1900, while among men in the same generations the greatest risk of death due to TB was between the ages of 30 and 40. Pregnancy is suspected to play a role in the early peak of female TB mortality in late adolescence and early adulthood,⁷ while smoking and occupational exposures may put men at highest risk slightly later in life.¹⁰

The respondent's understanding of the causes of TB before being given an intervention was caused by the virus as much as 56.0%, but after given the intervention the respondent's understanding increased so that he knew that *Mycobacterium Tuberculosis* was the cause of TB, which was 94.0%. Tuberculosis is an infectious disease that attacks the main human respiratory tract, the lung. However, it can also spread to other parts of the body, such as the kidneys, spine, and brain if left untreated. The failure to control TB, which most frequently affects the lung, is partly due to incomplete understanding of disease pathogenesis.¹¹

"If people know you have TB, even if you are negative, and they see you in a restaurant, everyone at the same time will move their table to the other side. Nobody wants to be near you." Mircea, XDR-TB 55 years.¹²

Conclusion

The most important finding is the discovery of environmental factors, knowledge, socio-economic and stigma determines the incidence of tuberculosis in Mandar ethnic groups in Rangas. The result of the study showing that the model of flipchart intervention to increase knowledge of housewives and cadres finding TB cases.

Conflict of interest

The authors declare no conflict of interest.

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