



# RPCPE

ISSN 2613-943X (print)  
ISSN 2620-5572 (online)

Journal Homepage:  
<https://jurnal.ugm.ac.id/rpcpe>

Review of Primary Care Practice and Education  
(Kajian Praktik dan Pendidikan Layanan Primer)

## Training Effectiveness to Change Knowledge and Attitude of Health Cadres on Lung Tuberculosis

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To cite this article:

Prasetyorini D, Kusnanto H, Claramita M. Training effectiveness to change knowledge and attitude of health cadres on lung tuberculosis. *Rev Prim Care Prac and Educ.* 2019; 2(3): 99-101.

### ABSTRACT

**Background:** Lung tuberculosis is a contagious disease that is still a public health problem. Indonesia is the country with the second most frequent tuberculosis cases in the world. One of the element that play a role in tuberculosis control is qualified human resources, including health cadres.

**Objective:** To determine the effectiveness of training to increase knowledge and change the attitude of the health cadres against tuberculosis in Gunung Kidul.

**Method:** This study uses the Quasi-Experiment research design, with a pretest-posttest design. There were 70 health cadres, 35 were given intervention (training) and 35 as controls. Before the given intervention is given a pretest. Intervention in the form of training for the cadres to help find out the suspect of Lung Tuberculosis patients in the community settings using a standard module of tuberculosis training. Posttest is administered at the end of the training. Analysis and test significance were performed using t-test paired and independent sample.

**Result:** There was not significant difference between the trained and untrained cadres during the pretest (t-test independent sample,  $p > 0.05$ ). There was a significant increase in knowledge in trained cadres (t-test paired sample,  $p < 0.05$ .) and there was a difference in the level of knowledge between trained and untrained cadres (t-test independent sample,  $p < 0.05$ ), there was a change in attitude on the trained and untrained cadres ( $p < 0.05$ ).

**Conclusion:** With the training, it can be improve knowledge and influence the attitude of health cadres against tuberculosis.

**Keywords:** *training, health cadres, tuberculosis*

### INTRODUCTION

Tuberculosis (TB) is a contagious disease that becomes a public health problem. There was a change of tuberculosis prevention from Stop TB to End TB<sup>1</sup>, with the expectation of a new case decrease up to 80%, a decrease of death from Tb to 90% and no family affected by Tb to 100%<sup>2</sup>. India, Indonesia, and China are countries with most cases of tuberculosis, with 23%, 10% and 10% of the total cases present in the world. This causes the treatment of tuberculosis becomes more difficult<sup>1</sup>. Strategic Plan of Ministry of Health in 2015-2019, tuberculosis remains a priority control of infectious diseases<sup>3</sup>. National Action Plan (NAP) of tuberculosis prevention, developed seven strategies toward universal access. These seven strategies include four main strategies in implementation and three supporting strategies. The main strategies include involving all government service providers, NGO, the private sector through the PPM (Public Private Mix) approach and

ensuring the implementation of the International Standards for Tuberculosis Care (ISTC), as well as empowering the community and tuberculosis patients<sup>4</sup>. In the NAP of tuberculosis control, health cadres play a role through community empowerment activities and health cadres' involvement in PPM<sup>5</sup>.

Health cadres are very instrumental in helping the task of *puskesmas* in carrying out *puskesmas* functions, namely organizing public health efforts. The existence of this health cadres has long existed in Gunung Kidul. Health cadres activities include the presence of health cadres for the implementation of the Toddler integrated service post/*Pos Pelayanan Terpadu (Posyandu)*, the Elderly *Posyandu*, data collection targets, and so forth. *Posyandu* is a health effort by the community in conducting routine screening such as weight, height, vital signs, nutritional history, history of illness, and if needed to provide general

counseling. Health cadres with various age ranges, levels of education, and lack of cadre training on TB, so that training needs to be done, with the hope that it can improve the knowledge and attitude of health cadres so that they can help find suspects of TB.

Based on the above description, it is necessary to train the health cadres to improve knowledge and to change the attitude of health cadres on tuberculosis disease in Gunung Kidul.

The purpose of this research is to know the effectiveness of training to increase knowledge and attitude of health cadres toward tuberculosis disease in Gunung Kidul.

## RESEARCH METHODS

This research is quantitative research with Quasy Experiment research design with pretest-posttest design. The study involved 1 treatment group and 1 control group. Population in this research are health cadres in *Puskesmas* Wonosari I, Gunung Kidul. A minimum sample of 70 health cadres is divided into 2 groups.

The inclusion criteria for the sample are health cadres located in *Puskesmas* Wonosari I and willing to be the respondent. Exclusion criteria are health cadres who are not willing to be respondents. The drop out criterion as a sample is if it does not follow the course of the research to the end. The location of this research is in *Puskesmas* Wonosari I, Gunung Kidul.

The independent variable is the health cadres, the dependent variables are knowledge level and change in attitude.

A total of 35 health cadres conducted pretest before being given treatment, then given treatment and after that conducted posttest. In the control group, only a one-time test was performed.

Characteristics of respondents were analyzed using frequency distribution. The data of knowledge and understanding level were tested for normality distribution after the significance test was done.

The training was conducted by *puskesmas* doctors and the Gunung Kidul Health Office using the TB module from the district health office. The training is carried out for three days every afternoon, following the general cadres' free time in the community settings. The training sequence is as follows: Day I: lunch, pretest, opening by the Gunung Kidul Health Office, Providing TB overall prevention speech by speakers 1 and 2, interspersed with a 30 minute break. Day II: Lunch, presentation of finding new suspect TB patients in the community settings and the follow up actions by speakers 3 and 4, and simulation exercises (role-play). Day III: Lunch, assignments, posttest.

## RESULTS

The sample in this research is health cadres located at Posyandu in the working area of *Puskesmas* Wonosari I, Gunung Kidul. Obtained from an open recruitment, there were 35 health cadres who fulfilled the inclusion

criteria received training (treatment) and 35 health cadres who were not given treatment (control). All of the health cadres examined were female. The age average of trained health cadres is 39 years old, the age average of health cadres who are not trained is 38 years old. Of all samples obtained the youngest age is 26 years old, while the oldest age is 57 years old. The level of education is varied, from elementary to postgraduate (S1). The educational level of the two groups, most of them are high school graduated (51.4%). Most of the health cadres work as housewives (87.1%).

The value of pretest and posttest in the treatment group obtained the average pretest value of 4.74 and posttest value of 7.8 thus obtained an average value increase of 3.06. Obtained p-test results of 0.000 ( $p \leq 0.05$ ) which means there is a significant difference in the level of health cadres knowledge about tuberculosis between before and after intervention with training. The average level of knowledge of health cadres trained is at 7.80 and untrained is at 6.09. There was a significant difference in posttest value with p-value ( $p < 0.05$ ). From the above data, it can be seen that there is a change in attitude on health cadres trained and not trained, which can be known from  $p < 0.05$ . We did not use any qualitative methods in this study.

## DISCUSSION

Most of health cadres are female, this is because mothers have more free time and do not work. Some of the health cadres in *Puskesmas* Wonosari I area are already replaced, so the age of the youngest health cadres is 26 years old and the oldest is 57 years old, while the average age is 38 years old. From the data analysis it was found that there was no significant difference before treatment and after treatment ( $p > 0.05$ ). This finding means that there was not any difference between trained and untrained cadres in the beginning of this study. Also, because the age of health cadres in both groups was in the similar life-cycle of 38-39 years.

The analysis performed on one treatment group found an increase in mean value and there was a significant change of knowledge. According to Notoatmojo, health education is all activities to provide and or increase knowledge, attitudes, and practices of the community in maintaining and improving their own health<sup>6</sup>. This is based on research that has been done, that there is a significant increase in knowledge.

The average level of knowledge of health cadres trained at 7.80 and not trained is 6.09. There was a significant difference in posttest value with p-value 0,000 ( $p < 0.05$ ). With the training, the level of knowledge will also increase, so the results of the posttest assessment also increased.

The attitude changes can be seen from perceived susceptibility, perceived severity, perceived benefit of action and perceived barrier of action from health cadres under study. The perceived susceptibility has value, so that the data distribution is normal so then data analysis is done using an independent t-test and there is a significant difference between trained and not trained. Perceived

susceptibility is an individual's perceived vulnerability to a particular disease<sup>7</sup>. In this study of tuberculosis, with increasing knowledge, fosters understanding and affects the perception that tuberculosis can affect anyone. It was found that perceived severity had no significant difference between trained and untrained, while the perceived benefit of action and perceived barrier of action had significant differences. Perceived severity is an impact/hazard or pain that will be felt by the individual, no significant difference is obtained because the health cadres already know the dangers of tuberculosis, and this information can be obtained from posters, leaflets that exist in the Puskesmas. While the perceived benefit of the action is the benefit felt by the individual if the individual is behaving healthily. The perceived barrier of action is an obstacle perceived by individuals to behave in a healthy manner, with training providing a positive for the cadres to behave healthy<sup>7</sup>.

It would be better if there were regular training for TB health cadres and others in subsequent studies. In addition, the use of convenient sampling is a limitation of this study. Future studies are better using a total sample or in accordance with an adequate sampling calculation formula.

## CONCLUSION

The conclusions in this research are (1) There is a difference in the level of health cadres knowledge between those trained and untrained; (2) In the health cadres that trained, there is an increase in knowledge; and (3) There was a significant change in health cadres attitude.

With the increasing knowledge of health cadres, the change of health cadres' attitude toward TB disease, it is hoped that health cadres can contribute in helping to find suspect TB, become PMO (drug swallowing supervisor) for TB patient and become an extension of Puskesmas in TB prevention program. In addition, with the training activities TB, health cadres can provide correct and appropriate information to the community, so it is hoped that health cadres training become one of the government programs in TB prevention.

## Acknowledgment

Our greatest thanks to our supervisor Prof. dr. Hari Kusnanto, SU, DrPH and dr. Mora Claramita, MPHE, PhD. We also express our gratitude to the Head of *Puskesmas* Wonosari I and the employees who have helped this research.

## Ethical Approval and Informed Consent

This research has been approved by Medical and Health Research Ethics Committee (MHREC) from the Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada with reference number KE/FK/0660/EC/2017.

## Funding

Self-funding.

## Availability of Data and Material

Data and material can be accessed via corresponding author.

## Conflict of Interest

None.

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