Relationship between Gender and Education Level of Public Healthcare Officers with Perceptions of Tuberculosis in the Context of Tuberculosis Infection Prevention and Control in Surakarta.

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ABSTRACT

Background: Public healthcare officers are at the forefront of healthcare in Indonesia. Public healthcare officers have a major role in implementing programs at the public healthcare, one of which is the Infection Prevention and Control Program (IPC) especially in Tuberculosis. The aim of this study was to determine the relationship between gender and education level of public healthcare officers with perceptions of Tuberculosis in the context of Tuberculosis Infection Prevention and Control in Surakarta.

Methods: This study was an analytic observational study with a cross-sectional approach. The data collection method used total sampling. The research was conducted in all public healthcare Surakarta City in November 2019. The questionnaire used was the Respondent Data questionnaire and the questionnaire Health Belief Model was developed from the TB Measurement Guidance and the Tuberculosis IPC Guidelines in Health Care Facilities. The total number of respondents who met the inclusion criteria was 451 people. The data analyzed were gender, level of education and perceived value of tuberculosis. The data analysis used the Spearman correlation test.

Results: The correlation test Spearman for the relationship between gender and the perception of tuberculosis obtained a correlation coefficient (r) = 0.042 and a significance value (p) = 0.373> 0.05. The results of the Spearman correlation test for the relationship between the level of education and the perception of tuberculosis, the correlation coefficient value (r) = -0.528 and a significance value (p) = <0.001.

Conclusion: The results of this study indicate that there is no significant relationship between gender and Perception of Tuberculosis. And there is a significant relationship between education level and Perception of Tuberculosis.

Keywords: Gender, Education Level, Perception, Tuberculosis, Infection Prevention and Control, Health Belief Model

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INTRODUCTION

Public healthcare is the first level health service unit that is responsible for a certain area (Kemenkes, 2012). Public healthcare has four main functions, namely preventive, promotive, curative and rehabilitative. One that is included in the preventive program is Infection Prevention and Control (IPC). The IPC program is an effort to provide protection by preventing infection in the community, especially when in health care facilities. Diseases that are included in the infection prevention and control program are Tuberculosis (Permenkes, 2017).

Indonesia is ranked second in the world based on the number of Tuberculosis cases. Central Java Province, which has a population of 33,522,663 people, is the largest contributor to the incidence of tuberculosis in Indonesia (WHO, 2015).

Efforts to prevent infection at public healthcare are still considered ineffective, because there are still many healthcare officers who have not paid attention and implemented preventive measures properly. Such as hand washing, separation of cough patients, use of masks and the cleanliness of health care facilities (Parsinahingsih, 2010). In a study conducted at the University of Indonesia Hospital (RSUI), it was shown that at least one third of healthcare officers in the hospital, there are latent tuberculosis germs on their bodies (Virdhani, 2019). In another study, it was found that the prevalence of latent tuberculosis among heathcare officers (nurses) at H. Adam Malik Hospital Medan was 53 percent (Martin, 2010).

In increasing infection prevention and control efforts, full encouragement and awareness of healthcare officers, especially health center officers, who deal directly with patients are needed. However, differences in gender and education level of public healthcare officers can affect the process of implementing these efforts. Therefore, this study was conducted to obtain information about the relationship between gender and education level of public health centers with perceptions of tuberculosis in the context of Tuberculosis Infection Prevention and Control (IPC) in Surakarta.

The purpose of this study is:
1. Knowing the relationship gender with the perception of public healthcare officers regarding tuberculosis

2. Knowing the relationship of education level with the perception of public healthcare officers regarding tuberculosis.

SUBJECTS AND METHODS

This study was an observational analytic with approach *study cross sectional*. The research was conducted in all health centers in five sub-districts in Surakarta. This research was conducted in November 2019. The research sample was healthcare officers. Sampling using *total sampling technique* and using inclusion and exclusion criteria.

The instruments used were the respondent data questionnaire and the questionnaire *Health Belief Model*. Data obtained and analyzed using the Spearman Correlation Test with IBM SPSS (*Statistical Package for Social Sciences*) version 25.0 *for Windows*.

RESULTS

Research on the relationship between gender and education level of public healthcare officers with perceptions of tuberculosis in the context of Tuberculosis Infection Control (IPC) Prevention in Surakarta was conducted on 7-28 November 2019. This research was conducted in Surakarta City, to be precise at 17 public healthcare in five districts with the number of officers is different for each public healthcare. The study used a total sampling technique with inclusion and exclusion criteria. The total number of public healthcare officers who filled out the questionnaire and met the inclusion criteria was 451 people.

Based on the research results, the following characteristics of the respondents were obtained.

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Table 1. Distribution of respondents by the Home Health Center

Characteristics		f%
Banyuanyar	11	2.4
Gajahan	34	7.5
Gambirsari	39	8 6
Gilingan	23	5,1
Jayengan	23	5,1
Kratonan	18	4.0
Manahan	15	3,3
Ngoresan	27	6,0
Nusukan	29	6,4
Pajang	26	5,8
Penumping	15	3,3
Pucangsawit	20	4,4
Purwodiningratan	35	7,8
Purwosari	20	4,4
Sangkrah	24	5,3
Sibela	53	11,7
Stabelan	39	8,6
Total	451	100

Respondents the most are healthcare officers from the Sibela public healthcare with a total of 53 people. Meanwhile, the least number of respondents was 11 healthcare officers from the Banyuanyar public healthcare.

Table 2. Distribution of Respondents by Gender and Education Level

Socio-demographic	f	%
Gender		
Male	73	16.2
Female	378	83.8
Education Level		
Postgraduate	8	1.8
Undergraduate	114	25.3
Diploma IV	11	2.4
Diploma III	270	59.9
Others (SD, SMP, SMA, SPK, D1)	48	10.6

The largest number of respondents in the category of the gender group were healthcare officers with the gender of women with a total of 378 people.

The highest number of respondents in the education level category was Diploma III, amounting to 270 people. Meanwhile, the least number is Postgraduate with 11 people.

Table 3. Distribution of the Mean Value of Perception of Tuberculosis Research Respondents by Gender and Education Level

Variable Category	Perception Value of TB
Gender	
Male	63.88
Female	65.95
Education Level	
Postgraduate	63.60
Undergraduate	64.79
Diploma IV	62.99
Diploma III	65 , 74
Others (SD, SMP, SMA, SPK, D1)	67.74

In the distribution of respondents based on gender, the mean value of perceptions of tuberculosis was the highest in women with 65.95. Based on the level of education, the average perception value of tuberculosis was highest in other categories consisting of SD, SMP, SMA / SPK, and D1 with 67.74.

Bivariate Analysis

After the data normality test was carried out, there were data that were not normally distributed. Then the data is ranked that are not normal and then processed using the Spearman Correlation analysis. Furthermore, the correlation coefficient and significance values were obtained as follows.

Table 4. Correlation between gender and Perception of Tuberculosis.

Variable Category	Value of Perception of Tuberculosis
Gender	
Correlation Coefficient	0.042
Sig. (2-tailed)	0.373
N	451
Education Level	
Correlation Coefficient	0.528 **
Sig. (2-tailed)	0.000
N	451

**. Correlation is significant at the 0.01 level (2-tailed).

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Based on table 4, it is found that the correlation coefficient and significance (*2-tailed*) between gender and education level with the perceptions of the health center officers towards tuberculosis. In the gender variable, the value is obtained *sig. (2-tailed)* which is greater than the value of α (0.05) which means that the variable does not have a significant relationship to perceptions of tuberculosis. Meanwhile, the variable level of education obtained the value *sig. (2-tailed)* which is smaller than the value of α (0.05) which means that this variable has a significant relationship to the perception of tuberculosis.

DISCUSSION

This study aims to determine the relationship between gender and the level of education of public health center officers with the perceptions of public health center officers of tuberculosis in the context of Tuberculosis Infection Control Prevention in Surakarta.

Perceptions were assessed based on a questionnaire filled out by public healthcare officers. The existing perception value is then taken as an average and then made into a ranking for analysis. This study uses the theory *Health Belief Model* to assess changes in behavior, in this case assessing the demographic factors in the form of gender and education level of the health center staff, then it has a connecting variable in the form of knowledge that can influence a person's perception of tuberculosis so that it can also influence changes. behavior of a person, particularly in the Prevention and Control of Tuberculosis Infection (IPC).

Based on data from Surakarta City Health Center Officers in 2017, there are 525 public healthcare Officers scattered in the public healthcare Technical Implementation Unit in each District. This study succeeded in getting 477 samples and after going through a process of elimination based on the variables of gender, education level and perception and also according to the inclusion criteria, a total sample of 451 people was obtained for the data processing stage.

The following is a discussion of the results of the bivariate analysis of the study:

1. Relationship between Gender and Perception of Tuberculosis.

Allan (2007) states that men and women have different views on certain things. This study has a hypothesis in the form of a relationship between Gender and Perceptions of Tuberculosis in Public Health Center Officers. Hypothesis test analysis using Spearman correlation (table 4) found that there was no significant relationship with very weak correlation between Gender and Perceptions of Tuberculosis in Public Health Center Officers in Surakarta City.

The results of the study obtained a sample of 451 people, the distribution based on gender obtained details as follows; The number of female public healthcare officers was 378 people (83.8%), this means that there were more than just 73 men (16.2%). Based on the 2017 PNSD Profile Book, the number of public healthcare Technical Implementation Unit Officers in Surakarta was 525 people, with the following distribution; male 127 people (24.2%) and female 398 people (75.8%). This supports the difference in the number of women more than men in taking the study sample.

The study sample based on the mean value of perceptions of tuberculosis in women was 2.07 points higher. This is supported by research in Bangladesh India, Malawi and Colombia (2008) that the stigma index of women against tuberculosis in Bangladesh was higher than that of men, India, the difference in the stigma index between men and women against tuberculosis is suggestive but not significant. In another study, it was stated that women have a stronger intention and desire to engage in TB prevention behavior than men (Dolores, 2004). However, the results of the study contradict research in the *Eastern Mediterranean Health Journal* (2003), which states that the perception score of men is significantly higher than that of women. Likewise reinforced by research in China (2008) on tuberculosis service policies, it was stated that women had less knowledge of current TB service policies and were reluctant to actively obtain information about TB.

The research data were then processed and the results of the correlation data analysis between gender and Perceptions of Tuberculosis showed a value (r: 0.042; p: 0.373), meaning that the significance value showed that there was no relationship between gender and perceptions of tuberculosis in Public Health Center Officers in Surakarta. Based on this, it can be interpreted that the perception of tuberculosis cannot be influenced by the gender differences of public healthcare officers and vice versa. This is

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consistent with research conducted by Somma et al. (2008) which states that there is uncertainty regarding the extent and strength of the stigma or perceptions of tuberculosis based on gender, although this is important for tuberculosis control. However, there are studies that are not in accordance with the results of this study, stating that there is a significant relationship between gender and anxiety about the transmission of pulmonary tuberculosis (Priyatin, 2007).

2. Relationship between education level and perceptions of tuberculosis

Notoatmodjo (2012, 2013) said that education is directly related to knowledge, if there is an increase in knowledge it can change a person's perception. This study has a hypothesis in the form of a relationship between Education Level and Perceptions of Tuberculosis in Public Health Center Officers. Hypothesis test analysis using Spearman correlation (table 4) found that there is a significant relationship with a strong correlation between Education Level and Perception of Tuberculosis in Public Health Center Officers in Surakarta City.

The distribution based on the educational level was mostly at the D3 level as many as 270 people (59.9%), based on the 2017 PNSD Profile Book, the highest number was officers with D3 education with 181 people.

The research sample was based on the mean value of perceptions of tuberculosis at the highest at the SD, SMP, SMA, SPK and D1 levels with a value of 67.74 and the lowest at diploma IV. This is in accordance with the results of the bivariate analysis which shows that the correlation coefficient is negative, which means that the lower the level of education, the higher the perception value. This is contrary to Notoatmodjo (2013) which states that people who have high education will also have high knowledge, so that they can have a broader view compared to someone with low education. So that people with higher education are expected to be able to understand the importance of maintaining the health of themselves or those around them. In another study conducted by Tuty (2017) it is contrary to the results of the study, from the data analysis that the correlation coefficient is positive, which means that if education is higher, one's perception will also be higher. This is reinforced by the statement by

Mulyana (2002) that a person's education level is an internal factor that affects perception. This may imply that the higher the level of education, the greater the perception of something. According to Notoatmojo (2010), a person's perception is influenced by the level of knowledge. In this case knowledge can be seen based on the level of education, it can be concluded according to this theory that the higher the level of education, the higher the perception of the individual.

The results of the correlation data analysis between the level of education and perceptions of tuberculosis showed a value (r: -0.528; p: <0.001), which means that the significance value indicates that there is a significant relationship between the level of education and the perception of tuberculosis in public health center officers in Surakarta. Based on these results it can be interpreted that perceptions of tuberculosis can be influenced by differences in the education level of health center staff and vice versa. This is supported by research conducted by Wiwik Priyatin in Banyumas Regency (2007). The results show that there is a significant relationship between education and one's anxiety about the transmission of pulmonary tuberculosis. Likewise, research by Sepang (2013) with statistical test results found that the level of education has a significant relationship with the level of knowledge. Another study conducted by Tarigan (2014) also found that there is a relationship between public perception and education. However, it is not in accordance with research in Malaysia (2004), which found that there was no significant relationship between education and perception.

CONCLUSION

Based on this study, there is no significant difference regarding the perception of tuberculosis based on gender, both men and women have low scores.

Based on the results of this study, there are differences in perceptions based on the level of education, although the average perception value is still low. The lower the level of education, the higher the perceived value of tuberculosis, and vice versa.

SUGGESTIONS

Based on the research that has been done, the authors' suggestions are as follows:

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1. Public health center officers in Surakarta are advised to increase their knowledge and views about tuberculosis in the context of infection prevention and control, one of which is by participating in more training and applying what is obtained in order to minimize tuberculosis cases. Latent to public healthcare officers. This is regardless of gender and level of education of officers because the average perception value of tuberculosis is still low.

2. The Surakarta Health Office is advised to urge all public healthcare officers to participate in training and implement the Tuberculosis Infection Prevention and Control Program in all public healthcare in Surakarta City.

3. Further research is suggested to further develop the questionnaire, in particular the selection of research instruments and to examine more deeply about other factors that influence the perception of Tuberculosis in the context of Tuberculosis Infection Prevention and Control. Thus, there will be more and more research and can be used as guidelines for public healthcare officers or the general public to be involved in the Prevention and Control of Tuberculosis Infection.

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