Indonesian Journal of Nutritional Epidemiology and Reproductive
ISSN: 2620-8261 (Online)
DOI : https://doi.org/10.30994/ijner.v8i1.327
Vol. 8 No. 1 January 2025, pp. 26-32

Analysis of Factors Associated with Compliance with Mask Use in Pulmonary Tuberculosis Patients at Era Medika Hospital Lung Clinic

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ABSTRACT
Pulmonary TB is an infectious disease caused by the germ Mycobacterium Tuberculosis. Pulmonary TB transmission can be prevented by covering our mouth when coughing or sneezing with a mask. The aim of this research was to determine the factors associated with compliance with the use of masks in pulmonary TB patients at the Pulmonary Polyclinic at Era Medika Hospital. Cross sectional research design. This research was carried out by direct observation and collecting data on pulmonary TB patients at the Era Medika Hospital Lung Clinic simultaneously. The population of this study were all patients from the Pulmonary Clinic of Era Medika Hospital. The samples used were 75 patients from the Era Medika Hospital Pulmonary Clinic who were diagnosed with pulmonary TB using the Accidental Sampling technique. The independent variables of this research were patient attitude, patient motivation, patient perception, and availability of masks. The dependent variable of this research was compliance with mask use. The research used a questionnaire sheet.Data analysis using univariate analysis and bivariate analysis and using the Pearson Chi-Square statistical test.The results of the research explain that there was a relationship between attitude and compliance with wearing masks (p-value 0.000). The frequency of respondents with a positive attitude was 53 respondents (69.3%) and 50 respondents (66.7%) were compliant with wearing masks. There was no relationship between patient motivation and compliance with mask use (p-value 0.477) where the frequency of patient motivation was high in 74 respondents (98.7%). There was a relationship between patient perceptions and compliance with mask use (p-value 0.000) with a frequency of positive perceptions of 42 respondents (56%). There was a relationship between the availability of masks and compliance with patient mask use (p-value 0.000) and the frequency of respondents providing masks, 49 respondents (65.3%). It is hoped that patients will apply the education related to compliance with the use of masks that have been provided by doctors at the Lung Clinic at Era Medika Hospital.

Keywords : Compliance Factor Analysis, K3 and Pulmonary TB

INTRODUCTION

Pulmonary TB is an infectious disease caused by the bacterium Mycobacterium Tuberculosis(Mar'iyah & Zulkarnain,2021). WHO reported that the estimated number of people diagnosed with Pulmonary TB in 2021 globally was 10.6 million cases or an increase of around 600,000 cases from 2020 which was estimated at 10 million cases of Pulmonary TB.

The death rate from Pulmonary TB in Indonesia reached 150,000 cases (one person every 4 minutes), up 60% from 2020 which was 93,000 cases of death from Pulmonary TB. Indonesia itself is in 2nd position with the highest number of Pulmonary TB sufferers in the world after India.

In 2019, the number of detection and treatment of all cases of Pulmonary TB in East Java again ranked second in Indonesia with 64,311 cases with a Case Detection Rate (CDR) of 66% of the CDR Target set at a minimum of 70%. Tulungagung is one of the regencies in East Java Province that has a high incidence of Pulmonary TB. The number of new cases of

Pulmonary TB in Tulungagung Regency over the past three years has not met the target that has been set and tends to decline.

Based on the Tulungagung Regency Health Profile, in 2019, the discovery of new cases of Pulmonary TB was 1,236 from a target of 2,149 cases or a Case Detection Rate (CDR) of 57.5% of the CDR target set at a minimum of 80% of the target cases. In 2020, the discovery of new cases of Pulmonary TB was 821 cases from a target of 2,391 cases or a Case Detection Rate (CDR) of 34.33% of the CDR target set at a minimum of 80% of the target cases. In 2021, the discovery of new cases of Pulmonary TB was 676 cases from a target of 2,391 cases or a Case Detection Rate (CDR) of 28.27% of the CDR target set at a minimum of 80% of the target cases(Da et al.,2023).

The spread of pulmonary TB disease can occur through people who have suffered from pulmonary TB. Then, coughing or sneezing sprays saliva that has been contaminated and inhaled by healthy people whose immune system is weak against pulmonary TB disease.(Fadli,2021). Transmission of Pulmonary TB can be prevented in several ways, including by covering the mouth when coughing or sneezing as cough etiquette. This is to prevent Pulmonary TB germs from spreading in the air. Pulmonary TB patients should wear masks when doing activities outside the home, to avoid transmission to others.(Latifah et al., 2022).

Based on the results of observations at the Lung Clinic of Era Medika Hospital in September 2023, there were still many patients who were not compliant in using masks. Some patients used masks incorrectly because the mask did not cover the mouth and nose. In addition, there were also patients who often opened and closed their masks when talking. This can result in the transmission of lung infections to patients who have not been previously infected.

PenemasThis tian aims tomIdentifying factors of patient attitudes, patient motivation, patient perceptions, and mask availability related to compliance with mask use in pulmonary TB patients at the Lung Polyclinic of Era Medika Hospital, manalyze the influence of attitudes,motivation,perceptionpatients, andavailability of masks on compliance with mask use in Pulmonary TB patients at the Lung Polyclinic, Era Medika Hospital.

METHODS

Analytical observational research design with a cross-sectional approach. This study was conducted by conducting direct observation and collecting data simultaneously to determine factors related to compliance with mask use in Pulmonary TB patients at the Lung Polyclinic of Era Medika Hospital. The study was conducted at Era Medika Hospital in November 2023-June 2024. The subjects in this study wereh 75 Pulmonary TB patients at the Lung Polyclinic of Era Medika Hospital. The sampling technique used accidental sampling. The data collection technique used observation. Data processing was done by inputting data, editing, tabulating, coding, cleaning, processing. Research data analysis was done using univariate analysis and bivariate analysis. The analysis of this research data usedby using the Pearson Chi-Square test.

This study uses independent variablesnamely patient attitudes, patient motivation, patient perceptions, and mask availability. While the dependent variable is patient mask compliance.Data collection was carried out through primary data using a questionnaire that had been presented by the researcher and then distributed to respondents.How to score a questionnaire by giving a score of 1if the patientSTS (STotally Disagree), score2 if the patientTS (Disagree), score 3if the patientS (Agree), and score 4if the patientSS (Strongly Agree)on the questions on the questionnaire sheet.

In assessmentvariablekcompliancethen the patient is considered compliant if the overall score of the patient's answers shows a number26-40Andthe category of non-compliant patients if the overall score of the patient's answers shows a number10-25.In assessing patient attitude

variables, the patient is assessedbe positiveif the overall score of the patient's answers shows a number 27.5-44and the patient is considered to have a negative attitude if the overall score of the patient's answers shows a number11-27.5. In the assessment of variablesmotivationpatient then the patient is assessedhigh motivationif the overall score of the patient's answers shows a number35-56 and the patient is considered to have low motivation if the overall score of the patient's answers shows a number14-35. In assessing patient perception variables, patients are assessed as having a positive perception if the overall score of the patient's answers shows a number 16-24and the patient is considered to have a negative perception if the overall score of the patient's answers shows a number6-15. In assessing the variable of mask availability, patients are assessedgood mask availableif the overall score of the patient's answers shows a number12.6-20 and the patient is considered to have poor mask availability if the overall score of the patient's answers shows a figure of 5-12.5.

RESULTS

A. Analysis of Respondent Characteristics Variables

Table 1. Respondent Characteristics

Data Types	f	%
Gender		
Man	44	58.7
Woman	31	41.3
Total	75	100
Age Group		
Productive (18-55 years old)	56	74.7
Non-productive (>55 years)	19	25.3
Total	75	100
Work		
civil servant	1	1.3
Private employees	2	2.7
Self-employed	30	40
Farmer	16	21.3
Trader	22	29.3
Laborer	3	4
Housewife	1	1.3
Total	75	100
Last education		
SD	25	33.3
Junior High School	22	29.3
High School	27	36
College	1	1.3
Total	75	100

Source: Primary Data, 2024

Based on Table 1, it was found that 58.7% of respondents were male and the remaining 41.3% of respondents were female. Based on the age group of respondents, the productive age group (18-55 years) was 74.7% of respondents, while the rest were the non-productive age group (>55 years) as many as 25.3% of respondents. Based on the respondents' occupations, 1.3% of respondents worked as civil servants, 2.7% as private employees, 40% of respondents as entrepreneurs, 21.3% of respondents as farmers, 29.3% of respondents as traders, 4% of respondents as laborers, and 1.3% as housewives. Based on the respondents' last education,

33.3% of respondents had elementary school education, 29.3% of respondents had junior high school education, 36% of respondents had high school education, and 1.3% of respondents had college education.

B. Bivariate Analysis

Table 2. Cross Tabulation Between Patient Mask Use Compliance with Attitudes, Motivations, Perceptions, and Mask Availability of Pulmonary TB Patients at the Lung Polyclinic of Era Medika Hospital

		Mask Compliance		Total
		Obedient	Not obey	
Patient Attitude	Positive	49	3	52
	Negative	1	22	23
Total		50	25	75
			p-value	0,000
Patient Motivation	Tall	49	25	74
	Low	1	0	1
Total		50	25	75
			p-value	0.477
Patient Perception	Positive	41	1	42
	Negative	9	24	33
Total		50	25	75
			p-value	0,000
Availability of Masks	Available	47	2	49
	Not available	3	23	26
Total		50	25	75
			p-value	0,000

Source: Primary Data, 2024

Table2, shows that based on statistical tests in the Pearson Chi-Square test, the results obtained are that the p-value of the patient attitude variable, patient perception, and patient mask availability is <0.05, namely 0.000, which means that it can be concluded that there is a relationship between attitudes, perceptions, and availability of patient masks with compliance with the use of masks for Pulmonary TB patients at the Lung Polyclinic of Era Medika Hospital. While the Pearson Chi-Square test obtained results that the p-value of the patient motivation variable is> 0.05, namely 0.477, which means that it can be concluded that there is no relationship between patient motivation and compliance with the use of masks for Pulmonary TB patients at the Lung Polyclinic of Era Medika Hospital

DISCUSSION

A. Connection Patient Attitude with Compliance with Mask Use in Pulmonary TB Patients at the Lung Polyclinic of Era Medika Hospital

Based on research conducted by researchers, it shows that there is a relationship between compliance with the use of masks and the attitudes of TB patients at the Lung Polyclinic of Era Medika Hospital. The factor that causes the results to be related is likely due to the respondents' questionnaire answers which show that patients have a positive attitude and are compliant with using masks as many as 49 respondents (60.5%). Indicators to determine this are obtained from the question items in the questionnaire, including TB patients having their own eating utensils, getting enough rest, implementing a healthy lifestyle, covering their mouths when coughing and sneezing, and not spitting phlegm in random places. In addition, when viewed from the background of patients whose last education is mostly high school, it is possible that patients have a more open and positive attitude so that they can accept explanations in the form of education from Lung Polyclinic doctors well regarding prevention, transmission, and treatment of TB, as well as the importance of being compliant in using masks

as one of the efforts to prevent transmission of TB for the sake of healing the disease. This is in line with researchSA & Fatah MZ (2021), about the influence of attitudes towards 3M compliance as a prevention of Covid-19 transmission, where the results of the Chi-Square test obtained a p-value of 0.000 which indicates that there is a relationship between attitudes and compliance with using masks. Respondents in the study also produced more who had positive attitudes, namely 56.1%.

B. Connection Patient Motivation with Compliance with Mask Use in Pulmonary TB Patients at the Lung Polyclinic of Era Medika Hospital

Based on research conducted by researchers, it shows that there is no relationship between patient motivation and compliance with the use of masks for TB patients at the Lung Polyclinic, Era Medika Hospital.The factor that caused the results to be unrelated was likely due to the presence of several respondents' questionnaire answers which showed that patients were not compliant in using masks even though their motivation was high, namely 25 respondents (33%).

Based on the time of data collection at the Lung Polyclinic of Era Medika Hospital, there were still patients who wore masks not because of their own wishes or their own will, but they were obedient in wearing masks so that they would be examined by the Lung Polyclinic doctor, so that this was only done by patients when seeking treatment at health care facilities, and it could also be that compliance with the use of masks was not carried out by patients when traveling other than in health care facilities. There were also patients who gave up and felt that there was no other choice but to wear masks as an effort to prevent the transmission of Pulmonary TB to other family members or other patients who had not been infected with Pulmonary TB. Even though patients gave up like that, they still wore masks wherever they went, of course this was not included in the patient's motivation in implementing the behavior of obeying the use of masks.

Factors that cause the results to be unrelated are also likely caused by respondents giving answers that do not match the actual situation. Sometimes, respondents only follow the answers of other respondents. This is based on the experience gained by researchers, that a person's compliance depends on the individual himself, and depends on factors that make a person unable to behave obediently in carrying out tasks, rules and orders from individuals who have more experience than him. This research is in line with researchIkhlas & Veronica (2023)which shows that the results of the bivariate analysis show that there is no significant relationship (p-value = 0.762) between the motivation variable and mask use behavior..

C. Connection Patient Perception with Compliance with Mask Use in Pulmonary TB Patients at the Lung Polyclinic of Era Medika Hospital

Based on research conducted by researchers, it shows that there is a relationship between compliance with the use of masks and the perception of Pulmonary TB patients at the Pulmonary Polyclinic of Era Medika Hospital. Factors that cause the results to be related are likely due to the respondents' questionnaire answers which show that patients have a positive perception and are compliant with using masks as many as 41 respondents (55%). Indicators to determine this are obtained from question items in the questionnaire, including patients believing that the patient's great influence on being compliant with using masks has on efforts to prevent the transmission of Pulmonary TB, patients assume that patients have great control in efforts to prevent the transmission of Pulmonary TB which can be done by being compliant with using masks, and the importance of changing masks as often as possible or better if using disposable medical masks.

In addition, the age group factor of respondents who are mostly in the productive age group (18-55 years) can influence patient perception to have a positive perception so that it can encourage patients to comply with using masks as an effort to prevent transmission of Pulmonary TB. At this productive age, it will affect the quality of work if the patient does not

work, it will affect the economy of TB patients, so patients should indeed have a positive perception for the sake of their own recovery so that they can return to activities and work to meet the economy of the patient's family.

The more positive the patient's perception of the susceptibility to contracting and the severity of contracting TB significantly increases preventive behavior. Conversely, the higher the patient's perception of obstacles/difficulties/constraints in carrying out prevention, the lower the preventive behavior.(Nurhayati et al.,2015). This research is in line with researchAfro et al. (2020), regarding the influence of individual perception factors on the level of compliance in implementing protocols, where the variables that influence the level of compliance in implementing health protocols during the Covid-19 pandemic are the variables perceived benefits and perceived barriers.

D. Connection Availability of Masks with Compliance with Mask Use in Pulmonary TB Patients at the Lung Polyclinic of Era Medika Hospital

Based on research conducted by researchers, it shows that there is a relationship between compliance with the use of masks and the availability of masks for TB patients at the Lung Polyclinic of Era Medika Hospital. The factor that causes the results to be related is likely due to the respondent's questionnaire answers which indicate that patients have good mask availability and are compliant with using masks as many as 47 respondents (63%). Indicators to determine this are obtained from question items on the questionnaire, including patients always providing masks before the stock of masks runs out, the majority of patients always provide disposable medical masks although some also provide non-medical masks but masks are always available in each patient's home.

In addition, the last education factor of patients who are mostly high school graduates may be able to influence the availability of good patient masks at home. With patients who have a high school education, they think more critically and care about the importance of having masks at home that are always ready when patients need masks to wear when traveling anywhere as an effort to prevent transmission of Pulmonary TB to other family members. Another factor that causes a relationship between compliance with the use of masks and the availability of masks for Pulmonary TB patients at the Lung Polyclinic of Era Medika Hospital is that the circulation of masks is currently adequate, unlike during the Covid-19 pandemic at that time and when assessed in terms of economical prices, it makes it easier for people to always provide masks at home. This study is in line with researchFuuzirahmah et al. (2022), where the results of the hypothesis test with the Chi-Square Test show a relationship between the availability of facilities and maternal compliance with health protocols in the implementation of Posyandu in the Covid-19 Era in the Nanggung Health Center area with a value (p-value 0.000).

CONCLUSION

There is a relationship between patient attitudes, perceptions, and mask availability on mask compliance in pulmonary TB patients at the Lung Polyclinic of Era Medika Hospital. And there is no relationship between patient motivation on mask compliance in pulmonary TB patients at the Lung Polyclinic of Era Medika Hospital

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