The Effects of Family Function, Nurse-Patient Communication, and Stigma on Depression Symptoms in Tuberculosis Patients at the DOTS Pulmonary Outpatient Clinic of RSUD Banyumas

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ABSTRACT

Background: Tuberculosis (TB) and mental illness are prevalent worldwide and often coexist. Poor mental health has been linked to alterations in immune function. Through social, behavioral, and biological mechanisms, depression and tuberculosis together amplify the burden of disease. Collaboration from all parties is needed to alleviate depression in TB patients, including support from family function and positive societal stigma. Method: This was a descriptive correlational study, and data collection was carried out using a cross-sectional method. A total of 72 respondents who met the inclusion and exclusion criteria were selected as the sample using a non-probability sampling technique, specifically accidental sampling. Results: The results of the multiple regression test showed that only the variables of family function and stigma had a significant correlation with p-values of 0.00005 and 0.009 0.05, respectively. Meanwhile, the variable of nurse-patient communication had a p-value of 0.633 0.05, indicating no significant correlation. Additionally, the calculated F-value was 18.662, and the tabled F-value was 3.136, with a probability value of 0.000. Since the probability value was less than 0.05, the regression model could be used to predict depression symptoms. It can be stated that the three independent variables, namely family function, nurse-patient communication, and stigma, collectively influence depression symptoms in patients. Conclusion: There is a significant relationship between family function and stigma towards depression symptoms in Tuberculosis patients at the DOTS Pulmonary Clinic of Banyumas Regional Public Hospital in 2023.

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1. INTRODUCTION

Depression is a common mental health issue characterized by suffering, loss of interest or pleasure, low self-esteem or self-confidence, disturbed sleep or appetite, fatigue, and unhelpful fixations. It can last for an extended period or be recurrent, significantly impairing a person's ability to adapt to daily life and potentially leading to suicide (Kemenkes RI, 2020). Globally, it is estimated that more than 300 million people experience the adverse effects of suffering, compared to 4.4% of the total population. Depression is predicted to become a major health problem and ranks fourth worldwide. According to WHO, in 2020, approximately 800,000 people die by suicide yearly on this planet. The suicide rate is higher in early life. Thailand has the highest suicide rate

in Southeast Asia, at 12.9% (per 100,000 people), followed by Singapore (7.9%), Vietnam (7.0%), Malaysia (6.2%), Indonesia (3.7%), and the Philippines (3.7%). According to data from the Ministry of Health for 2022, more than 18,723 people experience anxiety, over 23,000 experience depression, and approximately 1,193 attempt suicide.

It can also affect personal satisfaction related to the well-being of TB patients. Furthermore, depressed TB patients neglect their social responsibilities and are less engaged in social interactions, especially during coughing, leading to low self-esteem and hopelessness. Mycobacterium tuberculosis is the infectious agent that causes tuberculosis. This infection is transmitted through droplets containing microscopic organisms. While most bacterial infections target the lungs, these bacteria can also affect other organs. Tuberculosis (TB) and mental illnesses are common worldwide and often co-occur. However, poor mental health has been associated with changes in immune function. The treatment of depression-TB syndrome requires collaboration with mental health professionals. Globally, tuberculosis (TB) is a threat to life.

Indonesia has a high prevalence of tuberculosis (TB) and currently ranks third in the world. Tuberculosis (TB) is still a major medical condition worldwide. Tuberculosis equally affects the mental and physical health of TB patients. For TB patients, depression is a common mental issue. Through social, behavioral, and biological mechanisms, depression and tuberculosis together increase the disease burden. Depression can hinder the body's physiological response to anti-TB treatment, contribute to disease progression, or increase the risk of TB reactivation. Escalating TB to epidemic levels became a "shameful" condition during rapid growth. Fear of transmission has led to social stigma associated with TB, which persists to this day, following the discovery of the TB bacillus in 1882 and the evolving understanding of its transmission (A. Kritsky, 2017).

According to Goffman (2019), stigma is through social, behavioral, and biological mechanisms. Depression and tuberculosis together increase the disease burden. Depression can hinder the body's physiological response to anti-TB treatment, contribute to disease progression, or increase the risk of TB reactivation. Masumoto S (2018), family function, nurse-patient communication, tuberculosis knowledge, and depression symptoms. When an illness strikes, the primary source of social support is the family, either in the form of emotional or tangible instrumental support, such as helping with meal preparation and medication administration. Families that can demonstrate adaptability to emergency conditions, including the patient's illness and changes in employment, may be very effective in reducing the risk of sadness, while family disruption may indicate that the home environment may burden TB patients.

In a study by Shijao Yan (2018) in China, the impact of stigma and depression symptoms on regular treatment adherence in TB patients was quite significant. A cross-sectional survey was conducted, and 1,342 TB patients in three counties in Hubei Province were sampled using a multistage sampling method. The independent effects of stigma and depression symptoms on adherence were determined through multinomial logistic regression analysis. The average medication adherence score was 6.03 ± 1.99. The percentages of TB patients with high, moderate, and low treatment adherence were 32.12%, 34.58%, and 33.31%, respectively. Furthermore, the researchers also adopted from the study conducted by Abdul Rouf (2021), that the prevalence of depression in early TB was 50.5% with CI (43.7%-57.3%). After two months of treatment, the prevalence decreased to 9.4% with CI (5.9%-14.0%), and at the end of treatment, it became 2.5% with CI (0.91%-5.4%). The correlation between Depression in TB patients and treatment failure was small to moderate, as indicated by Cramer's V test (0.29-0.59).

The shortcomings of the two previous studies are that both researchers did not conduct research related to family function and effective nurse-patient communication, which could be triggering factors for TB patients experiencing depression symptoms. Because family function and effective nurse-patient communication are the most important sources of social support for TB patients, low-income family function and nurse communication may negatively affect patients undergoing TB treatment.

The results of the preliminary study conducted on January 9-11, 2023, at the DOTS Outpatient Clinic of RSUD Banyumas, through the distribution of questionnaires to measure the level of depression in TB patients, are as follows: Out of 60 TB patients undergoing OAT treatment who were attending the DOTS Outpatient Clinic of RSUD Banyumas, 25 patients showed moderate depression symptoms, and two patients showed severe depression symptoms.

Based on these problems, researchers are interested in conducting research on "The Effects of Family Function, Nurse-Patient Communication and Stigma on Depressive Symptoms in Tuberculosis Patients at the DOTS Lung Polyclinic, Banyumas District Hospital". The aim of this study was to determine the effect of family function, nurse-patient communication and stigma on depressive symptoms in Tuberculosis patients.

2. RESEARCH METHOD

The type of research used in this research is descriptive correlative using a cross sectional data collection method. Correlative descriptive is research to collect information about the status related to an existing symptom. This research was carried out at the DOTS Lung Clinic, Banyumas District Hospital. This research will be carried out in April 2023 - May 2023. The population in this study is patients routinely seeking pulmonary TB treatment

at the DOTS Pulmonary Polyclinic, Banyumas Regional Hospital in April-May 2023, totaling 258 patients. The number of samples to be used in this research was determined based on the Slovin formula, 72 pulmonary TB patients at the DOTS Pulmonary Polyclinic, Banyumas Regional Hospital, with the sampling technique used in this research being non-probability sampling in the form of accidental sampling. The inclusion criteria taken were: adult female and male pulmonary TB patients who were registered as routine patients seeking treatment at the DOTS Pulmonary Polyclinic at Banyumas Regional Hospital from the age of 20-60 years and DOTS Pulmonary TB patients at Banyumas Regional Hospital who were willing to become research respondents. The exclusion criteria in this study were: pulmonary TB patients who did not come for control to take medication because they needed it during the research at the DOTS Lung Clinic, Banyumas District Hospital, pulmonary TB patients who had just undergone OAT therapy for less than 1 month and were not in a state of psychosis.

The data collection tools used in this research were questionnaires on levels of depression, family function, nurse-patient therapeutic communication, stigma.

1. Depression Level Questionnaire Instrument

The Center Of Epidemic Studies Depression Scale (CES-D) was developed to measure depressive symptoms in the general population. The CES-D scale has good consistency, excellent test-retest reliability stabilization. This scale can be used in the general population. This questionnaire has been tested for validity and reliability by Lei Qiu (2019. Responses to items are provided using a four-point Likert scale ranging from 0 (not at all) to 3 (almost every day). Item scores are summed to give a total score (range: 0 –60).The CES-D has been widely used in China and in this study, the scale showed a high internal consistency Cronbach's alpha value (Cronbach's alpha = 0.86). This questionnaire consists of 20 items with a Likert scale, consisting of 0 to 3 points to measure feelings or behavior that lead to depression felt in the last week.

2. Family Function Instrument

The family functioning measuring tool used in this research is the Family Assessment Device (FAD) which was developed based on the concept of The McMaster Model of Family Functioning (Eipstein et al, 1983) which was modified in research conducted by Yolanda in 2012. This concept describes the device the organization and structure of family groups as well as transaction patterns between family members in carrying out their duties, so that they can be used to differentiate between good and poor family functions. Where the family functions in question are: affective function, socialization function, economic function and health care function. Each function goes through a questionnaire with 5 questions each. If yes, give a value of 1 and if no, give a value of 0 for each question item. Researchers used a questionnaire (Yolanda, 2012) which has been declared valid and reliable. The results of the validity test using internal consistency produced corrected item-total correlation values ranging from 0.385 to 0.75 which were declared valid. The overall reliability test of the measuring instrument produces an alpha coefficient value of 0.927. Meanwhile, the reliability value for each dimension was obtained for the affective function dimension of 0.583, the socialization function dimension of 0.605, the economic function dimension of 0.647, and the health maintenance function dimension of 0.682.

3. Nurse-Patient Communication Instrument

The instrument for measuring the application of therapeutic communication by nurses using a questionnaire consists of 10 statements using the Guttman scale model, namely a scale that requires an affirmative type of answer, such as a yes-no answer. Nurse-patient communication was measured by four statements, which contained the following: (1) satisfaction with nursing services (2) the extent to which the nurse explained nursing care based on the medical diagnosis (3) the extent to which the nurse explained details of the use of anti-TB drugs and (4)) the extent to which nurses explain drugs that are detrimental and cause side effects in TB patients. Patients are asked to rate the answers in terms of satisfaction or on a scale ranging from 0 to 1, for the 10 statements listed above. For this questionnaire, researchers used a questionnaire (Ansori, 2009) which has a validity value of 0.363 – 0.696 with $p<0.05$ and a reliability value of 0.942.

4. Stigma Instrument

The Internalized Stigma of Mental Illness (ISMI) Questionnaire was developedraised by Boyd, Adler, Otilingam, Peters (2014) and contains 24 questions that have 4 answers, namely strongly disagree, disagree, agree and strongly agree. Internalized Stigma of Mental Illness (ISMI) has a reliability test value ranging from 0.80-0.92 for all subscales and 0.81-0.91 without the stigma resistance subscale. Regarding the validity test results from ISMI, few studies have reported them. The most commonly reported type of validity is convergent. (Boyed et al, 2014).

Data analysis used in this research used univariate, bivariate and multivariate analysis. Univariate analysis uses the percentage method in assessing each variable studied. Bivariate analysis in this study of data to see the effect of family function, nurse-patient communication, and stigma on depressive symptoms in Tuberculosis patients at the DOTS Polyclinic at Banyumas Regional Hospital, was carried out using the chi-square test.

Multivariate analysis uses a linear regression model with more than one correlated response variable and one or more predictor variables.

3. RESULT AND DISCUSSIONS
3.1. Univariat

Table 1. Characteristics of Depression Symptoms in Tuberculosis Patients at the Pulmonary DOTS Clinic of RSUD Banyumas

Depresion Symptoms	f	%
Severe	16	22.2
Mild	20	27.8
Moderate	36	50.0
Family Funtion		
Good	35	48.6
Poor	37	51.4
Nurse Commuication		
Good	61	84.7
Suffcient	8	11.1
Poor	3	4.2
Stigma		
High	11	15.3
Moderate	30	41.7
Low	31	43.1

Based on Table 3.1.1, it can be seen that the majority of respondents had moderate depression symptoms, with 36 respondents (50%). Family function is most respondents had poor family function, with 37 respondents (51.4%). Nurse communication can be observed that the majority of respondents had good nurse-patient communication, with 61 respondents (84.7%). Majority of respondents had a low stigma with 31 respondents (43.1%).

3.2. Bivariat

Table 2. Correlation between Family Function and Depression Symptoms in Tuberculosis Patients at the DOTS Pulmonary Clinic of RSUD Banyumas in 2023

Family Function	Depression Symptoms			p-value
	Severn (%)	Moderate (%)	Mild (%)	
Good	2.9	45.7	51.4	
Low	40.5	54.1	2.0	0

Table 2. shows that respondents with good family functioning mostly had mild depression symptoms, totaling 18 patients (51.4%). Respondents with poor family functioning, on the other hand, mostly exhibited moderate depression symptoms, with 54.1 patients (54.1%). The Chi-Square test yielded a p-value of 0.000, smaller than α = 0.05. This means the null hypothesis (Ho) is rejected, and the alternative hypothesis (Ha) is accepted. Therefore, it can be concluded that there is a correlation between family functioning and depression symptoms in Tuberculosis patients at the Pulmonary DOTS Clinic, RSUD Banyumas, in 2023.

Table 3. Correlation between Nurse Communication and Depression Symptoms in Tuberculosis Patients at the DOTS Pulmonary Clinic of RSUD Banyumas in 2023

Nurse Communication	Depression Symptoms			p-value
	Severn (%)	Moderate (%)	Mild (%)	
Good	21.7	45.7	32.6	
Suffcient	16.7	66.7	16.7	0.444
Low	37.5	37.5	25.0	

Table 3. shows that respondents with good nurse-patient communication mostly had moderate depression symptoms, totaling 27 patients (44.3%). Respondents with adequate nurse-patient communication mostly had

moderate depression symptoms, with seven patients (87.5%). Respondents with poor nurse-patient communication mostly had moderate depression symptoms, totaling two patients (66.7%). The Chi-Square test yielded a p-value of 0.139, greater than α = 0.05. This means the null hypothesis (Ho) is accepted, and the alternative hypothesis (Ha) is rejected. Therefore, it can be concluded that there is no correlation between nurse-patient communication and depression symptoms in Tuberculosis patients at the Pulmonary DOTS Clinic, RSUD Banyumas, in 2023.

Table 4. Correlation between Stigma and Depression Symptoms in Tuberculosis Patients at the DOTS Pulmonary Clinic of RSUD Banyumas in 2023

Stigma	Depression Symptoms			p-value
	Severn (%)	Moderate (%)	Mild (%)	
Good	81.8	9.1	9.1	0.000
Suffcient	13.3	73.3	13.3	
Low	9.7	41.9	48.4	

Based on Table 3.2.3, it is evident that respondents with high levels of stigma mostly had severe depression symptoms, with nine patients (81.8%). Respondents with moderate levels of stigma mostly had moderate depression symptoms, totaling 22 patients (73.3%). Respondents with low levels of stigma mostly had mild depression symptoms, with 15 patients (48.4%). The Chi-Square test resulted in a p-value of 0.000, smaller than α = 0.05. Therefore, the null hypothesis (Ho) is rejected, and the alternative hypothesis (Ha) is accepted. It can be concluded that there is a correlation between stigma and depression symptoms in Tuberculosis patients at the Pulmonary DOTS Clinic, RSUD Banyumas, in 2023.

3.3. Multivariate Analysis

Table 5. the multiple linear regression equation

	B	Std. Error	Beta	t	P value
(Constant)	1.745	.324		5.378	.000
Family function	.707	.122	.501	5.782	.000
Nurse communication	.059	.122	.041	.480	.633
Stigma	-.413	.085	-.417	-4.857	.000
Deprendent Variable : Depression					

Based on the table 5. above, the multiple linear regression equation can be formulated as follows:

$$Y = 1.745 + 0.707X1 + 0.059X2 + 0.413X3$$

Based on table 5. multiple regression test results shows that the only variables are family function and stigma which has a meaningful relationship with a p value of $0.000 < α=0.05$ and $0.000 < α=0.05$. Meanwhile, the communication variable nurses have a p value of $0.372 > α=0.05$ so does not have a meaningful relationship.

Table 6. the calculated F-value

No	Model	Sum of squares	df	Mean square	F	Sig
1	Regression	18.662	3	6.221	24.713	.000
	Residual	17.116	68	.252		
	Total	35.778	71			

a. Predictors: (Constant), Stigma, Nurse-Patient Communication, Family Function
b. Dependent Variable: Depression

Table 6. shows that the calculated F-value is 18.662, which is greater than the tabulated F-value of 3.136, with a probability value of 0.000. Because the probability value is smaller than 0.05, the regression model can be used to predict depression symptoms. In other words, the three independent variables, namely family function,

nurse-patient communication, and stigma, collectively affect the depression symptoms in Tuberculosis patients at the Poli DOTS RSUD Banyumas in 2023.

The research results showed that respondents had family function Most of the good ones have mild symptoms of depression, namely 18 patients (51.4%). Respondents with poor family function mostly had moderate depressive symptoms, namely 54.1 patients (54.1%). The Chi Square test results obtained a p value of 0.000 which is smaller than $< \alpha = 0.05$, meaning that Ho is rejected and Ha is accepted so it can be concluded that there is a relationship between Family Function and depressive symptoms in Tuberculosis patients at the DOTS Polyclinic at Banyumas Regional Hospital.These results are in accordance with research (Wijaya, 2017), with using the Spearman Rank Connection factual test with the help of SPSS 16.0, the results were $p < \alpha$ (0.002 < 0.05) then Ho was rejected, the resultsshows that there is a relationship between family support and the reduction in pulmonary TB sufferers at the Taman Sidoarjo Welfare Center with a correlation coefficient (rho) of 0.536 which shows a moderate relationship with a positive relationship.

4. CONCLUSION AND RECOMMENDATION

There is no relationship between nurse communication and symptoms depression in Tuberculosis patients at the DOTS Poulmonary Outpatient Clinic of RSUD Banyumas. The results of the multiple regression test show that only the function variable family and stigma which have a significant relationship. Meanwhile variables. Nurse communication has a p value of $> \alpha = 0.05$ so there is no meaningful relationship. But the effect variable family functions that have the most meaningful relationship to symptoms of depression in Tuberculosis patients at the DOTS at the DOTS Poulmonary Outpatient Clinic of RSUD Banyumas showing a coefficient value of 0.709.

RECOMMENDATIONS

Future research should investigate interpersonal factors that have not been studied, such as knowledge, attitudes, beliefs, values, the role of healthcare providers, community social support, and psychological stressors.

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