

PSYCHOSPIRITUAL, STRESS, AND COPING STRATEGY OF PULMONARY TUBERCULOSIS PATIENT: A LITERATURE REVIEW

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Review Article: Systematic Review, Meta-Analysis, Integrative Review, Scoping Review

PSYCHOSPIRITUAL, STRESS, AND COPING STRATEGY OF PULMONARY TUBERCULOSIS PATIENT: A LITERATURE REVIEW

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Abstract

Background: Tuberculosis can cause psychological disorders in a person. Spiritual approaches can be used to improve coping strategies suppress stress symptoms that arise.

Objective: The purpose of this study is to describe the psychospiritual conditions, stress and coping strategies that occur in patients with tuberculosis.

Design: The research design uses systematic review based on PRISMA checklist.

Data Sources: Using three databases; Scopus, Science Direct and EBSCO. The search was conducted from January to March 2021. The keyword "tuberculosis" OR "pulmonary TB" OR "psychology" OR "spiritual" OR "stress" OR "coping strategy" was used in this systematic review with journal articles, 2016-2021 publication years and English as searching limitation.

Review Methods: JBI Critical Appraisal Tool used to assess the quality of the articles and PRISMA checklist used as a guideline to filter articles.

Results: 10 articles were obtained according to the inclusion criteria. The results of the analysis showed 7 articles using a cross sectional design, 2 quasi-experimental, and 1 qualitative study. The number of samples with a cross-sectional design ranged from 45 to 1,342, while articles with a quasi-experimental, qualitative and comparative study design had 32, 15 and 78 patients with pulmonary TB as respondents. Almost all of the psychological conditions in pulmonary TB patients experience stress and coping disorders. The results of the analysis show that spirituality can be used to improve the coping strategies used so as to suppress the stress symptoms that arise.

Conclusion: Psychospiritual strategies can be used as a way to improve the coping of TB sufferers and reduce the stress they experience.

Keywords: Tuberculosis, psychospiritual, stress, coping strategy.

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INTRODUCTION

Tuberculosis is still one of the top 10 causes of death worldwide (WHO, 2019). During the 6-month treatment period, not only

physical problems were suffered in patients with pulmonary tuberculosis but they also faced psychosocial problems and emotional changes (Suryani, Widiyanti, Hernawati, & Sriati, 2016).

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Pulmonary tuberculosis (TB) patients experience stress which is manifested physically, psychologically, and behaviorally due to the conditions they are experiencing (Nihayati, Arganata, Dian, & Yunita, 2019). Stress can be overcome with adequate coping strategies (Aizid, 2015), but based on the research of Putu, Purnama, Kumia, & Sari, (2020) Pulmonary TB patients who have adaptive coping strategies are mostly still experiencing moderate stress, so other approaches are needed to deal with stress. Spirituality is one of the factors that can reduce the stress experienced by patients (Gudenkauf et al., 2019).

Result of studies was conducted by Nihayati, et.al (2019) showed that spiritual was a positive stimulus that affected the cognator process according to Roy's adaptation theory in the form of merging dzikir and breath, which is aimed at realizing God.

METHODS

Design

The research design used a systematic review. The protocols used were the Joanna Briggs Institute (JBI) Critical Evaluation Tool to assess the quality of articles and the PRISMA checklist for reviewing articles. The purpose of using JBI and PRISMA is to limit the selection of the studies found and their adaptation to systematic reviews.

Search Methods

The source of the articles in this systematic review used research databases such as Scopus, Science Direct, and Ebsco. Additional articles were selected by means of the article except included in this systematic review. The search was conducted from January to March 2021. The keyword "tuberculosis" OR "pulmonary TB" OR "psychology" OR "spiritual" OR "stress" OR "coping strategy" was used in this systematic review with journal articles, 2016-2021 publication years and English as searching limitation. PICOS framework was used to determine the inclusion criteria. 1) Population,

active phase of TB patients > 20 years old; 2) Interest, psychospiritual, stress and coping strategy; 3) Context, the research was done in developed country; 4) Outcome, articles that contain psychological disorder (stress), coping strategy dan spiritual on pulmonary TB patients; 5) Study design and publication types, cross-sectional, qualitative and quasi-experimental study with full text; 6) Publication years, 2016 to 2021; and 7) Language, English.

Search Outcome

10 articles were obtained according to the inclusion criteria. The results of the analysis showed 7 articles using a cross sectional design, 2 quasi-experimental and 1 qualitative study to knowing about psychospiritual, coping and stress strategy among tuberculosis patient in different ways. The number of samples with a cross-sectional design ranged from 45 to 1,342, while articles with a quasi-experimental, qualitative and comparative study design had 32, 15 and 78 patients with pulmonary TB as respondents. e. Studies using Cross-sectional study that is rated 6 out of a total of eight points on the checklist. Quasi Experimental studies in this systematic review are given seven to nine points from a total of nine points on the checklist.

An initial literature search resulted in 458 articles (267 Scopus articles, 103 Science Direct and 88 EBSCO articles). A total of 62 are duplicate articles. Then the title was screened, and as many as 242 articles was excluded then selected articles based on abstract as many as 82. Through this abstract screening, 59 articles were excluded because they were not appropriate and the remaining 23 articles were full text and were eligible to be assessed. After doing a critical appraisal, there are 10 articles that fit the inclusion criteria. A total of 13 articles were excluded because they reached $\leq 50\%$. The selection process can also be seen through the flow diagram (Figure 1).

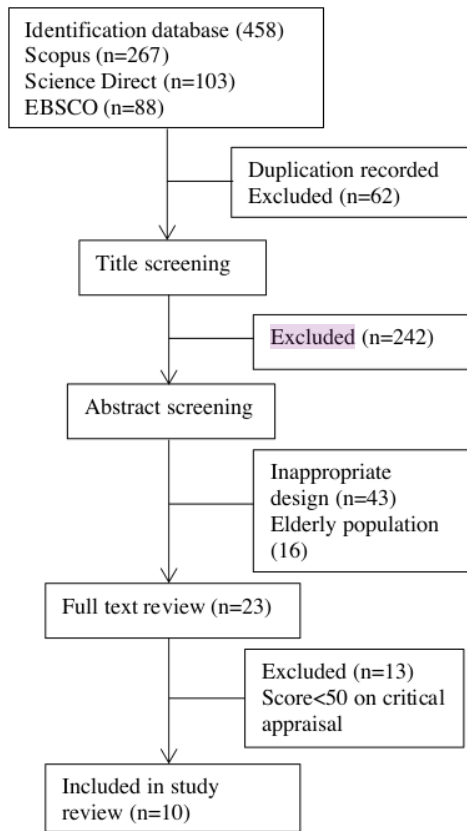


Figure 1. Flowchart Literature Review based on PRISMA.

Quality Appraisal

The JBI Critical Assessment Tools for Cross-sectional, Quasi-Experimental and Qualitative Studies was used to analyze the methodological quality in each study (n = 10). The assessment checklist based on The JBI Critical Appraisal Tool has provided several questions to assess research quality. The

assessment criteria were scored as 'yes', 'no', 'unclear' or 'invalid', and each criterion with a 'yes' score was assigned one point and the other scores zero, each study score was then calculated and added up. If the research score is at least 50%, ³³ets the critical criteria with a cut-off point, the article will be included in the review study.

Data Abstraction

The researcher uses the PRISMA guide that has been adapted to the study conducted for the article selection process. The selection of articles is based on the following determine keywords, determine the database to be used, determine eligibility criteria based on the PICOS framework, conduct study selection and record it in the PRISMA flow chart, pay attention to the risks of bias with the JBI Critical Appraisal Tool and then analyze one by one to determine the results and discussion in the study.

Data Analysis/ Synthesis

This study uses a descriptive analysis that describes and explains through a narrative about the research results described in the literature. Relevant data analyzed in this study include: author, country, year, research objectives, research design, number of samples, data collection methods, instruments, statistical analysis, as well as analysis of research results of each article.

RESULTS

Based on study review, there are some articles that meet the criteria (Table 1).

Table 1. Results of the Journal Research Review

No	Title, Author & Years	Methods	Result
1	Comparison of stress level and coping strategy between therapeutic phases in newly diagnosed tuberculosis (Putu et al., 2020)	Design: cross-sectional Sample: 45 newly diagnosed TB patients, 16 in intensive phase and 29 in advanced phase, from Public Health Center (PHC) of Pacar Keling, Surabaya, Indonesia.	Results showed that mostly moderate stress level and adaptive coping strategy were found in both phases. Overall, stress and coping were not significantly different between phases in newly diagnosed TB (p=0.259 and

	<p>Variable: stress level & coping strategy</p> <p>Instrument: Perceived Stress Scale (PSS) and coping strategy questionnaire were used for collecting data.</p> <p>Analysis: Independent sample t test</p>	<p>p=0.079 respectively), but the feeling of angry, losing control, nervous & depressed, whether things happened as wishes, talking problems to professionals, and trying new dangerous thing were</p> <p>25er significantly between phases (p=0.046, p=0.024, p=0.044, p=0.016, p=0.014, and p=0.005 respectively). Although stress level and coping strategy were not significantly different between therapeutic phases in newly diagnosed TB, but more attention needs to be given towards patients' emotion, such as the feeling of angry, losing control, nervous and depressed, and patients' wishes, especially in intensive phase.</p>
<p>2 Psychological Features for The First Time Detected Patients with Pulmonary Tuberculosis in The Aspect of Providing Psychotherapy Help During Stationary Treatment (Streltsov & Zolotova, 2019)</p>	<p>Design: Quasi-experimental</p> <p>Sample: 78 newly diagnosed patients with pulmonary tuberculosis (average age 31.3 ± 10.6 years)</p> <p>Variable: psychological characteristics of patients seeking psychological help</p> <p>Instrument: The psychological status was assessed by the admission and completion of chemotherapy in the hospital using the Symptom Check List (SCL – 90 – R) 16</p> <p>Analysis: Fisher's exact test, chi-square test</p>	<p>It was found out that the specific psychological features of the patients from the main group were significantly different from the ones of the comparison group (higher level of depressive disorders, less pronounced symptoms of negative affective states, suspicion and negativity towards other people); the difference also included a higher level of internality towards failures and family relations, lower psychological resources needed for positive functioning, and communication and emotional characteristics of the individual. It was demonstrated that patients referred for psychological support not only due to actual problems in the mental sphere, but also due to its specific features, as well as the 10ient's personal qualities</p>
<p>3 Prevalence of psychological distress and associated factors among adult</p>	<p>Design: Cross Sectional</p> <p>Sample: 370 adult tuberculosis patients</p> <p>Variable: Socio-demographic factors,</p>	<p>The prevalence of psychological distress among tuberculosis in this study population was 63.3% (95% CI: 58.1, 68.1). Being from rural residence (AOR: 1. 98; 95% CI:</p>

<p>1 tuberculosis patients attending public health institutions in Dire Dawa and Harar cities, Eastern Ethiopia (Ayana, Roba, & Mabalhin, 2019).</p>	<p>1 psychological distress, TB related stigma experience, and alcohol use Instrument: - The Kessler Psychological Distress Scale (K-10) questionnaire was used to assess psychological distress, - The 9-item stigma questionnaire was used to measure TB experience, - Alcohol Use Disorders Identification Test (AUDIT) tool was used to assess alcohol consumption. Analysis: logistic regression analyses</p>	<p>1 1.01,3.86), co-infection TB- HIV (AOR: 2.15; 95% CI:1.02, 4.56), presence of at least one chronic disease (AOR:3.04; 95% CI:1.59,5.79), experience of stigma (AOR: 1.71; 95% CI:1.01, 2.90), Pulmonary and MDR-TB (AOR:2.53; 95% CI:1.50,4.28) and smoking cigarette (AOR:2.53; 95% CI:1.06,6.03) were associated with psychological distress.</p>
<p>35 4 An Effect of Breath Dzikir on the Stress Level of Patients with Pulmonary Tuberculosis (Nihayati et al., 2019)</p>	<p>Design: quasi-experimental Sample: The research samples consisted of pulmonary TB patients in the area of Tanah Kalikedinding Health Center in Surabaya taken using non-probability sampling (purposive sampling). The size needed for each group, both the intervention and control group respectively, was 16 people. Variable: dzikir breath and stress levels Instrument: The instrument used to measure the dependent variable was the stress level questionnaire sheet Depression Anxiety Stress Scal (DASS 42) Analysis: Wilcoxon Signed Rank test and Mann Whitney U test</p>	<p>The result of the Wilcoxon Signed Rank test showed that the stress level of the treatment group had significance with $p = 0.000$. The control group had no significance; $p=0.317$. The Mann Whitney U test showed the differences in the stress levels post-intervention with $p=0,000$. Dzikir breath was a positive stimulus that affected the cognator process according to Roy's adaptation theory in the form of merging dzikir and breath, which is aimed at realizing God. Further research is expected to use cortisol measurements to obtain more accurate results. This should be performed at stress levels in other chronic disease patients.</p>
<p>27 5 Factors Affecting Tuberculosis Patients' Quality of Life in Surabaya, Indonesia (Juliasih et al., 2020)</p>	<p>Design: cross-sectional Sample: 157 TB patients from 5 primary health-care centers and 2 hospitals were included in the study. Variable: Quality of life is determined based on eight</p>	<p>Our study results show that, of the eight domains measuring the quality of life, only age exhibited a significant effect on general health ($P = 0.018$); sex did not significantly affect the quality of life in all domains. The level of</p>

		domains: general health pain, social functioning, physical functioning, role limitation due to physical health, role limitation due to emotional problems, energy, and emotional well-being.	education exhibited a significant effect only on role limitation due to emotional problems (P = 0.014). Mental distress demonstrated a significant effect on the quality of life in all domains
		Instrument: The research instrument used to measure the quality of life is the RAND-36 Item Health Survey, whereas that used to measure mental distress is the Self-Reporting Questionnaire	
		Analysis: General Linear Model with α set at 0.05 to analyze the determinants of quality of life	
2	6 Facilitators and Barriers to Self-Management of Tuberculosis Patients: A Qualitative Study (Loa, 2018)	Design: qualitative Sample: 15 adults with pulmonary TB with different gender, education, and occupation receiving treatment in an urban community health center in the Philippines. Variable: the facilitators and barriers of self-management of TB patients receiving treatment Instrument: interview transcript Analysis: Content analysis	2 Facilitators of self-management of TB patients are the self, family support, health care providers, environment, and spirituality. On the other hand, the barriers to self-management are the physical and emotional stress, social stigma, dissatisfaction to the healthcare system, and the self.
15	7 Perceived stigma among patient with pulmonary tuberculosis at public health facilities in southwest Ethiopia: A cross-sectional study (Mohammedhussein, Hajure, Shifa, & Hassen, 2020)	Design: Cross Sectional Sample: 410 patients with PTB Variable: perceived stigma and associated factors among patient with PTB on treatment Instrument: - Perceived TB stigma was assessed using the perceived TB stigma scale which was adopted from Ymma et al. - The perceived level of social support was	Prevalence of perceived stigma among patient with Pulmonary tuberculosis 57.1% (95% CI: 52.2, 61.7). Poor social support (AOR = 2.41; 95% CI: 1.06, 5.48), above a month duration of illness (AOR = 2.48; 95% CI: 1.33, 4.64), high perceived stress (AOR = 1.95; 95% CI: 1.09, 3.49), current that use (AOR = 1.88; 95% CI: 1.05, 3.37), and presence of depression (AOR = 8.18; 95% CI: 4.40, 15.22) were significantly

		<p>assessed by Oslo three items social support scale. - Depression was assessed by the depression sub-scale (HAD-D) of the hospital anxiety and depression scale (HADS)</p> <p>Analysis: Multivariable logistic regression models</p>	<p>associated with perceived stigma. Patient with HIV co-infection were 5.67 times (AOR = 5.67; 95% CI: 2.32, 13.87) more likely to have Perceived stigma than their counterparts.</p>
8	<p>Level of Depression in Tuberculosis Patients of Los Olivos Health Centers (Trinidad-Carrillo, Santana-Cercado, Castillo-Nañez, Matta-Solis, & Meneses-Claudio, 2020)</p>	<p>Design: cross-sectional study Sample: 120 tuberculosis patients Variable: 90 patients who were receiving treatment for tuberculosis at the olive health centers Instrument: Patient Health Questionnaire 9 (PHQ-9) Analysis: descriptive statistics</p>	<p>100% of the participants had some level of depression, the most relevant being the level of moderate depression with 35.56%, being more present in the female population with 21.11%, it was also shown that 48.9% of patients almost always have little interest or pleasure in doing things.</p>
9	<p>Survey on Tuberculosis Patients in Rural Areas in China: Tracing the Role of Stigma in Psychological Distress (Xu & Markström, 2017)</p>	<p>Design: Cross sectional Sample: A total of 342 eligible and accessible TB patients being treated at home were included in the survey Instrument: interviewer-led questionnaires Analysis: multiple logistic regression</p>	<p>This study revealed that 65.2% (223/342) of the participants were categorized as having psychological distress. Both the stigma questionnaire and the K10 were proven to be reliable and valid in measurement. Further analysis found that experienced stigma and illness severity were significant variables to psychological distress in the model of logistic regression. The model was assessed well in predicting distress by use of experienced stigma and illness severity in form of ROC and AUC. Rural TB patients had a high prevalence of psychological distress. Experience of stigma played a significant role in psychological distress.</p>
10	<p>Depressive Symptoms Mediate the Associations of Stigma with Medication Adherence and Quality of Life in Tuberculosis</p>	<p>Design: Cross sectional Sample: 1,342 TB patients Instrument: structured questionnaire that measured TB-related stigma, depressive symptoms,</p>	<p>Mediation analyses showed that depressive symptoms partially mediated the association between TB-related stigma and medication adherence (standardized indirect effect=</p>

<p>Patients in China (Qiu, Tong, Lu, Gong, & Yin, 2019)</p>	<p>medication adherence, and QO Analysis: multinomial logistic regression analysis</p>	<p>-0.16,95%bias-corrected confidence interval [CI] [-0.19, 0.13], P<0.01). Moreover, depressive symptoms fully mediated the association between TB-related stigma and QOL (standardized indirect effect= -0.17,95%bias-corrected CI [-0.21, -0.14], P < 0.01). The results suggest that depressive symptoms played a key role in the relationships among TB-related stigma, medication adherence, and QOL in patients with TB. Therefore, the alleviation of depressive symptoms could be an important strategy for improving medication adherence and QOL in patients with TB</p>
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The result of study review showed that all studies show about psychological effect of Tuberculosis. The articles above explain that there are many factors related to the stress and coping conditions of a patient with pulmonary TB. Some explain that stress can be caused by psychological disorders caused by stigma or stereotypes from society. Several more studies explain that pulmonary TB patients have weak coping strategies. Another article also mentions that to improve coping strategies and reduce stress, spiritual approaches such as dzikir and others are needed.

Study characteristics

There are 3 studies conducted in Indonesia, 2 conducted in China, 2 in Ethiopia, 1 in Russia, 1 in Peru and 1 in the Philippines. Respondents in this study are patients with pulmonary TB from that country and have an adult age. The results of the analysis showed 7 articles using a cross sectional design, 2 quasi-experimental, and 1 qualitative study. The number of samples with a cross-sectional design ranged from 45 to 1,342, while articles with a quasi-experimental, qualitative and comparative study design had 32, 15 and 78

patients with pulmonary TB as respondents. Almost all of the psychological conditions in pulmonary TB patients experience stress and coping disorders. The results of the analysis show that spirituality can be used to improve the coping strategies used so as to suppress the stress symptoms that arise.

Psychospiritual

It was found out that the specific psychological features of the patients from the main group were significantly different from the ones of the comparison group (higher level of depressive disorders, less pronounced symptoms of negative affective states, suspicion and negativity towards other people); the difference also included a higher level of internality towards failures and family relations, lower psychological resources needed for positive functioning, and communication and emotional characteristics of the individual. It was demonstrated that patients referred for psychological support not only due to actual problems in the mental sphere, but also due to its specific features, as well as the patient's personal qualities (Streltsov & Zolotova, 2019). Dzikir breath was a positive

stimulus that affected the cognator process according to Roy's adaptation theory in the form of merging dzikir and breath, which is aimed at realizing God. Further research is expected to use cortisol measurements to obtain more accurate results. This should be performed at stress levels in other chronic disease patients (Nihayati et al., 2019).

Stress⁵

100% of the participants had some level of depression, the most prevalent being the level of moderate depression with 35.56%, being more present in the female population with 21.11% , it was also shown that 48.9% of patients almost always have little interest or pleasure in doing things (Trinidad-Carrillo et al., 2020). Further analysis found that experienced stigma and illness severity were significant variables to psychological distress in the model of logistic regression. The model was assessed well in predicting distress by use of experienced stigma and illness (Xu & Markström, 2017).

Coping Strategy

Coping strategy were not significantly different between therapeutic phases in newly diagnosed TB, but more attention needs to be given towards patients' emotion, such as the feeling of angry, losing control, nervous and depressed, and patients' wishes, especially in intensive phase (Putu et al., 2020). Psychological resources needed for positive functioning, and communication and emotional characteristics of the individual. It was demonstrated that patients referred for psychological support not only due to actual problems in the mental sphere, but also due to its specific features, as well as the patient's personal qualities (Streltsov & Zolotova, 2019).

DISCUSSION

Psychosocial problems that can occur in patients with pulmonary TB feel isolated by friends and relatives and have difficulty continuing their work, causing them to choose to be more isolated (Gudenkauf et al., 2019).

The occurrence of psychosocial problems in pulmonary TB patients will affect the coping strategies that will be used in the patients themselves, to enable them to be able to withstand disease⁹ stressors (Venkatraju & Prasad, 2013). Spirituality can play an important role in dealing with these experiences, thereby increasing their impact on distress. Spirituality can be defined as a person's struggle and experience of being connected to the essence of life (Visser, de Jager Meezenbroek, & Garssen²³ 18).

Spirituality encompasses all aspects of a person's life and is particularly prominent during important life events such as birth (Yusuf, Nihayati, Iswari, & Okviasanti, 2016), living with chronic illness (Tiggemann & Hage, 2019). Spiritual care is important in acute care settings (Cho, Kim, Durrani, Liao, & Milbury, 2020) and for people with life-limiting conditions and their caregivers (Visser et al., 2018). Addressing spiritual needs can result in reduced suffering, a sense of well-being, increased ability to adapt and overcome adversity, and a sense of inner peace and strength (Weathers, Coffey, McSherry, & McCarthy, 2020). However, spirituality is often overlooked in busy clinical practice settings (Herlina & Agrina, 2019). The definition of spirituality is personal and dynamic but refers broadly to a relationship with something greater than oneself through which humans pursue purpose, meaning, and peace. Within this broad definition, spirituality may or may not involve a relationship and commitment to a religious denomination or belief. Research on spirituality and spiritual struggle has highlighted the importance of spirituality as a key component of quality of life that needs to be better understood and addressed in the midst of illness.

Stress experienced can cause maladaptive psychological. The cognator system includes psychological processes that experience stress and are closely related to mood and thoughts, bad moods are dominated by negative thoughts and feelings of anxiety (Yusuf et al., 2016). Stress conditions that are not handled properly

will disrupt a person's physiology which stimulates the hypothalamus to secrete corticotropin-releasing factor (CRF). This causes the pituitary gland to secrete adrenocorticotropin thereby releasing hormone (ACTH). This hormone can stimulate the adrenal cortex to secrete cortisol (Guyton & Hall, 2016). Increased excessive cortisol secretion in pulmonary TB patients can cause complications in the form of decreased immune system and excessive metabolism. Humans are actually able to adapt to the stressful conditions they experience if they have effective coping methods (Nihayati et al., 2019).

One of the coping methods to overcome these psychological problems is to use spiritual methods (Cho et al., 2020). A good psychospiritual condition will increase a closer relationship with God and nature which can lead to peace of mind. This condition can reduce amygdala activity in a person and inhibit cortisol secretion by the hippocampus, resulting in calm. As an effector of the sense of relaxation and calm that arises, the midbrain will release gamma-amino butyric acid (GABA), enkephalin and beta endorphins, so that stress will be reduced (Sumarsih, Wahyuningsih, & Sawiji, 2019).

The results suggest that depressive symptoms played a key role in the relationships among TB-related stigma, medication adherence, and QoL in patients with TB. Therefore, the alleviation of depressive symptoms could be an important strategy for improving medication adherence and QoL in patients with TB. Reduction of perceived depressive symptoms can be done by increasing the coping strategies used. There are many interventions to improve these coping strategies, a spiritual approach can be an alternative because so far there are still many who have not touched it.

CONCLUSION

Based on the review of the studies above, it can be concluded that until now there are still many patients with pulmonary TB who experience stress and fail to carry out coping

strategies. Many things can cause this to happen, family support, stigma, and the patient's psychological condition can be trigger factors. A psycho-spiritual approach needs to be done to improve coping strategies in patients with pulmonary TB. Coping strategies can be positive spiritual coping or negative spiritual coping. Individuals with good coping strategies are expected to find it easier to reduce the stress they feel.

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8 DECLARATION OF CONFLICTING INTEREST

There is no conflict of interest in this study, as this systematic review was written independently.

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AUTHOR CONTRIBUTION

Suhendra Agung Wibowo: Designed the study, collected and analyzed articles, and contributed to completion of systematic review.

Muhammad Amin: completion of systematic review.

Laily Hidayati: completion of systematic review.

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