



Literature Review

The influence of the quality of Tuberculosis services with adherence to taking Anti-tuberculosis drugs

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ABSTRACT

Indonesia was the second world's highest TB case in 2021. Tuberculosis therapy that takes a long time can cause patients to drop out of treatment. Hospitals conduct quality evaluations regularly and improve the quality of health service personnel to realize excellent health services. This literature review aims to determine the effect of the quality of tuberculosis services on patient compliance with anti-tuberculosis drugs. This literature review was written using a systematic approach. The databases used were Google Scholar, Science Direct, Proquest, and Scopus. The total number of articles obtained was 8 out of 64 based on inclusion criteria. The things that affect the regularity of taking medication based on the eight journal articles above are as follows: 1) the assurance dimension is 50%, 2) the dimensions of empathy and reliability amounted to 37.5%, 3) the responsiveness dimension is 25%, 4) patient satisfaction, direct evidence and service quality amounted to 12.5%. Adherence to taking medication is influenced by: 1) the presence of supporters of taking medication, 2) difficulty taking the medication regularly, (3) perceived benefits of taking anti-tuberculosis drugs, and 4) self-perception related to healing. The dimensions of assurance, empathy, and reliability have the most influence on the regularity of taking anti-tuberculosis drugs.



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INTRODUCTION

The number of tuberculosis cases worldwide was estimated at 9.9 million in 2020, equal to 127 per 100,000. The number of TB cases in Indonesia will be 824,000 in 2020 (World Health Organization, 2021). Indonesia is in second position with the highest number of TB cases in the world after India, followed by China, the Philippines, Pakistan, Nigeria, Bangladesh, and the Democratic Republic of the Congo, respectively. In 2020, Indonesia was in third place with the highest number of cases, so 2021 is no better. TB cases in Indonesia are estimated at 969,000 (one person every 33 seconds). This figure is up 17% from 2020, namely 824,000 cases. The incidence of TB cases in Indonesia is 354 per 100,000 population, meaning that for every 100,000 people in Indonesia, 354 suffer from TB. Tuberculosis cases in Indonesia were only 443,235 (45.7%) of the estimated 969,000 cases, while 525,765 (54.3%) other issues had not been reported and reported. The total number of patients with drug-resistant tuberculosis in Indonesia is 8,268 cases, with 5,234 people starting treatment for drug-resistant tuberculosis (World Health Organization, 2022).

Tuberculosis is an infectious disease caused by *Mycobacterium tuberculosis*. The bacteria attack the lungs as much as 85% and can also attack the extra lungs. Treatment of drug-sensitive tuberculosis takes six months, and for drug-resistant tuberculosis, the duration of treatment reaches 9-24 months. Therapy failure increases after the patient starts treatment until the fourth week (Dheda et al., 2016). The management of tuberculosis cases is (1) treatment and management of drug side effects, (2) monitoring of medication adherence, (3) monitoring of treatment progress and treatment outcomes; and (4) tracking of lost patients. The procedure is

carried out by established national standards (Peraturan Menteri Kesehatan Republik Indonesia Nomor 67 Tahun 2016 Tentang Penanggulangan Tuberkulosis, 2017).

The empathy of health workers toward tuberculosis patients will build Trust so that patients will become obedient in completing tuberculosis treatment (Zainaro & Gunawan, 2020). Poor communication between staff and tuberculosis patients is the most common cause of non-adherence to patients taking anti-tuberculosis drugs. This is because health workers do not explain tuberculosis, drug side effects, length of treatment, and effects of patients dropping out of treatment (Anggraini et al., 2018).

Adherence to taking anti-tuberculosis drugs is related to the quality of health facilities' services. The research was conducted at the Labuhan Maringgai community health center in 2018 (Dian Utama Pratiwi Putri, 2020). Dissatisfaction with tuberculosis services in Armenia is associated with non-adherence to treatment, hospitalization, drug-resistant tuberculosis, higher Education, marital status, i.e., unmarried, family income, dissatisfaction with consultation, empathy of officers, and place of residence (Yarimoglu, 2014).

Routine evaluation and improvement of the quality of health service workers need to be carried out to realize excellent service. Management of health facilities surveyed patients to determine the quality of tuberculosis clinic services. The survey is essential to improve health facility services (Merzistya et al., 2021). The objective measure of universal health is that patients can access quality health services in every government and private health facility. The goal of universal health can be achieved by seeking quality diagnostic services, good treatment rooms, current data, and the skills of health workers. (Stallworthy et al, 2020).



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The influence of the quality of tuberculosis services assessed according to patient perceptions and medication adherence is essential for healthcare facilities. This article aims to determine the effect of the quality of tuberculosis services according to patient perceptions in health facilities on patient compliance in taking anti-tuberculosis drugs. This review literature used a systematic review method where the articles to be discussed are limited to five years before 2022.

METHOD

This paper is a literature review using a systematic approach (systematic review). Science Direct, Proquest, Google Scholar, and Scopus are the databases used. The keywords used are “quality services,” “tuberculosis,” “adherence to tuberculosis treatment,” “quality of tuberculosis services,” adherence to taking TB drugs,” and “patient perspective.” The article search process was carried out in August-October 2022.

The inclusion criteria used were: 1) English or Indonesian articles, 2) articles published on January 1, 2018 - September 30, 2022, 3) full text, 4) Open access, and 5) articles that wrote about service quality from the patient’s perspective. Tuberculosis in health care facilities, 6) articles about the quality of tuberculosis services based on service quality, and 7) articles about the relationship between service quality and adherence to tuberculosis drugs. The exclusion criteria were: 1) duplication of articles, 2) Tuberculosis articles with Co-infection and other co-morbidities such as TB-DM, TB-HIV, and TB-COVID-19, 3) articles published before January 1, 2018-September 30, 2022, 4) the quality of tuberculosis services is not based on patient perceptions, 5) articles on medication adherence that are not related to service quality, 6) articles are not literature reviews, and 7) articles use quantitative methods.

The articles obtained from the initial search amounted to 67 themes consisting of 21 pieces from Google Scholar, ten from Proquest, 16 from Science Direct, and 20 from Scopus. Researchers selected articles containing duplicates, the theme of TB-COVID-19 co-infection, and articles published before January 1, 2018, so we obtained 63 reports. Researchers decided on 21 articles because the piece of the writing discussed the quality of tuberculosis services that were not according to patient perceptions; researchers obtained 42 articles. The author found 23 articles because they contained the theme of tuberculosis drug adherence unrelated to service quality. We got 19 pieces. A total of 5 papers were excluded due to the writing method using a literature review, 14 articles to be analyzed, and eight articles using quantitative methods were selected.

Things that affect the regularity of taking medication based on eight articles are as follows: 1) the dimensions of assurance are 4 out of 8 articles (50%), 2) empathy and reliability are 3 out of 8 articles (37.5%), 3) power response as much as 2 of 8 articles (25%), 4) patient satisfaction, direct evidence and quality of service as much as 1 of 8 articles (12,5%). Other factors that affect adherence to swallowing drugs are: 1) support for taking medication, 2) difficulty taking the medication regularly, 3) perceived benefits of taking anti-tuberculosis, and 4) self-perception related to healing. The article above says things related to the satisfaction of tuberculosis patients, namely: Communication, Information, and Education delivered by doctors, long waiting time for doctor services, where communication, information, and Education by doctors p -value = 0.000 OR value of 41.43 (95% CI 5,09-337.11) and the waiting period for Doctor services with a p -value of 0.000, OR value of 27.88 (95% CI 4.77-162.92).



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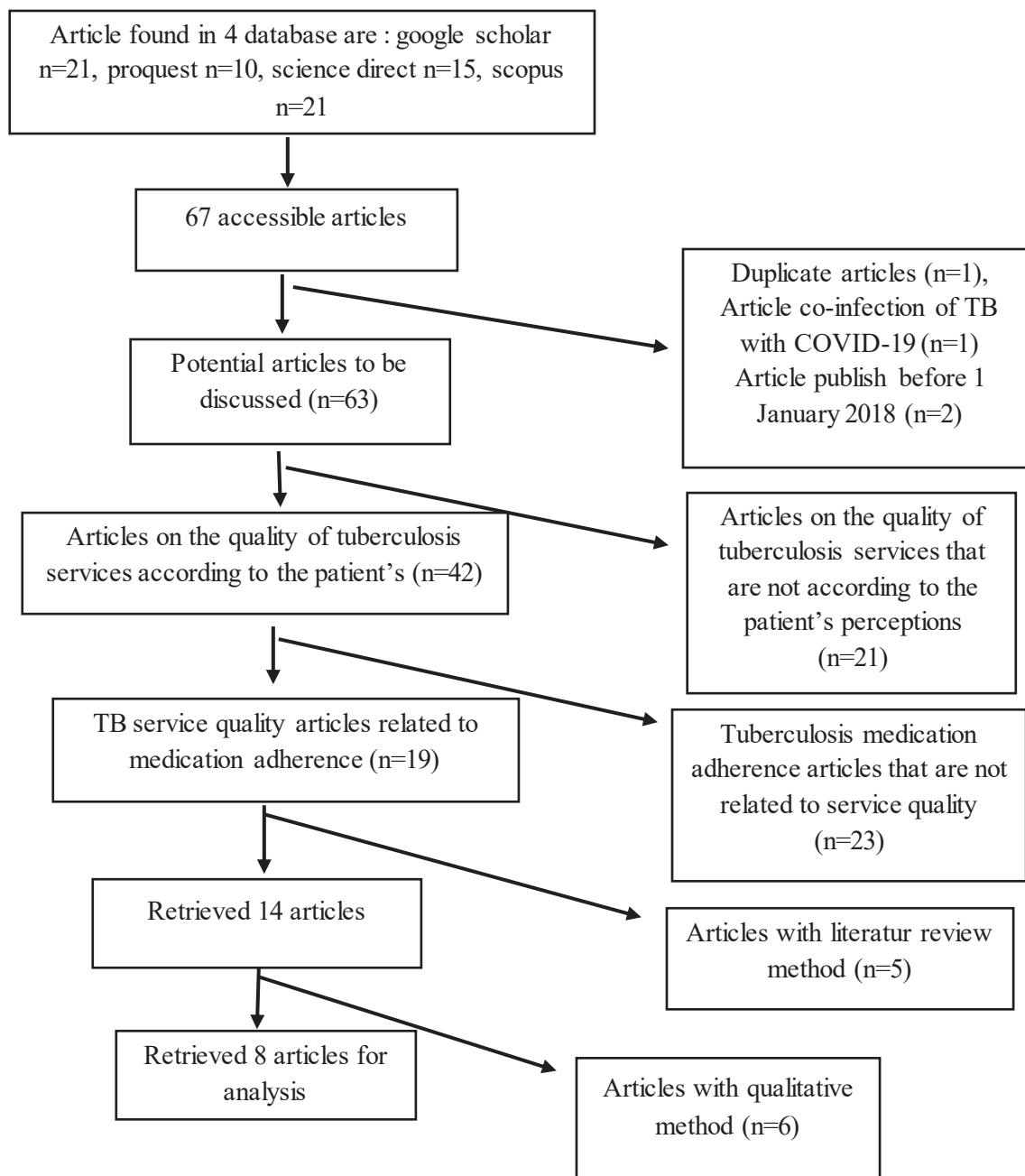


Figure 1. Prisma Diagram



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Table 1. Characteristic Article

Authors	Journal	Year	Title	Method	Sample	Result
Mayang Sari ayu (Ayu, 2019)	<i>Jurnal Jumantik</i>	2019	<i>Analisis Pelayanan Terapeutik Pada Pasien Tuberkulosis Resisten Obat di Kota Medan</i>	Cross-Sectional Research	32 samples with non-random sampling	Variables that affect adherence to drug-resistant TB drugs are medical services, pharmaceutical services statistically, and nursing services statistically
Yulin Mustika Sari, Juliandi Harahap, Masnelly Lubis (Sari et al., 2020)	<i>Media Publikasi Promosi Kesehatan Indonesia, Jurnal UNISMUH Palu</i>	2020	<i>Faktor Penentu Minat Berkunjung Ulang Pasien Tuberkulosis Di Poliklinik Paru Di Rumah Sakit Pirngadi di Medan</i>	Cross-Sectional Research	93 samples with the purposive sampling technique.	Assurance, empathy, responsiveness, and patient satisfaction influence the regularity of treatment or repeat visits for TB patients
Sri Ratna, Lukman F, Chatila M, Aufiena Nur Ayu Merzistya, Hima Sakina Firdhausy, Tika Dwi Cahyani, and Fina (Rahayu et al., 2021)	<i>Turkish Journal of Physiotherapy and Rehabilitation</i>	2021	<i>Patients' perspectives on tuberculosis services in the urban area, Indonesia: An assessment using quote tb light. Turkish Journal of Physiotherapy and Rehabilitation</i>	Cross-Sectional Research	138 samples, with purposive sampling	Staff service standards, interactions, solutions to problems, TB-HIV relationships, available drinking water, toilets, patient care, competent health workers, and support need to be improved



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Demisu Zenbaba, Mitiku Bonsa, Biniyam Sahiledengl (Zenbaba et al., 2021)	Heliyon	2021	Trends of unsuccessful treatment outcomes and associated factors among tuberculosis patients in public hospitals of Bale Zone, Southeast Ethiopia	Quantitative research using retrospective data	1281 samples, with total sampling	Hospital level, patient, age, and human immunodeficiency virus status significantly relate to failure TB patient treatment outcomes
Resom Berhe Gebremariam, Maereg Wolde and Aykerem Beyene (Gebremariam et al., 2021)	Journal of Health, Population, and Nutrition	2021	Determinants of adherence to anti-TB treatment and associated factors among adult TB patients in Gondar city administration, Northwest, Ethiopia	Cross-Sectional Research	265 samples with random sampling	Patient supporters, difficulty taking TB medication regularly, perceived benefits, and self-perception of healing related to adherence to anti-tuberculosis treatment
Ragil Sekar Kinanti Hutabarat (Hutabarat, 2018)	<i>Jurnal Ilmu Kesehatan Masyarakat</i>	2018	<i>Faktor-faktor yang Berhubungan dengan Kepuasan Pasien Tuberculosis di Puskesmas Padang Bulan Medan</i>	Cross-Sectional	122 samples with accidental sampling	Doctors' explanations and waiting times for TB patients have a relationship with patient satisfaction



Dian Utama Pratiwi Putri (Dian Utama Pratiwi Putri, 2020)	<i>Masker Medika</i>	2020	<i>Hubungan Mutu Pelayanan Kesehatan dengan Keteraturan Berobat Penderita TB Paru di Puskesmas Labuan Maringgai Lampung Timur Tahun 2018</i>	Cross-Sectional	68 samples with random sampling.	Reliability, responsiveness, assurance, direct evidence, empathy, and quality of service are related to routine tuberculosis treatment.
Muhammad Arifki Zainaro, Ahmad Gunawan (Zainaro & Gunawan, 2020)	<i>Holistik Jurnal Kesehatan</i>	2020	<i>Kualitas pelayanan kesehatan rawat jalan dengan tingkat kepatuhan minum obat penderita tuberkulosis paru</i>	Cross-Sectional	49 samples with a total sampling	The empathy of health workers related to adherence to taking anti-tuberculosis drugs has a significant relationship

DISCUSSION

Hospital managers need to pay attention to essential aspects related to the quality of hospital services, namely: (1) timely service, (2) attentive hospital staff, (3) accurate service prices, (4) providing information about the right time of service, (5) punctuality, (6) employees who are ready to serve patients with heart (Meesala & Paul, 2018). Patients can assess tangibles (physical appearance), the availability of adequate parking space, comfortable patient waiting rooms, and maintained hospital cleanliness. Examples of reliability are compliance with existing standard operating procedures, health facility employees who serve professionally, and implementing services as promised. An example of responsiveness (dexterity in service) is responding to every

patient’s complaint quickly and accurately. Assurance (intelligence), for example, is good communication by health workers to convince patients to complete treatment and the accuracy of doctors in making diagnoses. Empathy, for example, is listening to all patient complaints and giving positive responses and the officers feel what the patient is feeling (Alim et al., 2019).

The side effects of anti-tuberculosis drugs include nausea, vomiting, weakness, palpitations, tingling, and others (Dirjen P2P Kementerian Kesehatan RI, 2020). Medication adherence is higher in patients who experience mild drug side effects than in those with severe side effects (Wulandari, 2015). Officers’ empathy is always needed to provide solutions to patients to continue treatment until completion. Good



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communication by health workers also helps patients complete their treatment; on the other hand, if the communication between officers is terrible, the patient does not understand his illness and stops taking medicine (Anggraini et al., 2018).

Timeliness of service is essential to increase patient Trust in health workers; with belief, patients will be committed to obeying the advice officers give. Trust will also motivate the patient to recover from his illness. Doctors educating patients about curable tuberculosis, the transmission of tuberculosis, and the regularity of taking anti-tuberculosis drugs will convince patients to take medication regularly (Ayu, 2019).

The dimensions of SERVQUAL (Service Quality) that need to be improved to increase the visits of tuberculosis patients in hospitals are tangibles, assurance, and empathy. Health service management can improve the completeness of facilities and infrastructure, such as parking lots, waiting rooms, checking rooms for drinking water availability, and the fullness of inspection equipment. Patients will feel comfortable when they are in the hospital. Physical aspects, aspects of employee knowledge and behavior that can build patient Trust can also improve medication adherence in tuberculosis patients; the empathy of health workers is also essential (Noviyanti & Widiastuti, 2021).

Factors influencing tuberculosis patients' desire to return to health facilities are the responsiveness of assurance, empathy, and patient satisfaction (Sari et al., 2020). Health workers play a crucial aspect in establishing a diagnosis, giving medicine, and motivating patients to want to take medication; therefore, health workers need to master interpersonal communication and counseling skills (Colvin et al., 2019). Attitudes of health workers,

access to health services, side effects of drugs, attitudes of tuberculosis patients, and family support influence taking medication (Tukayo et al., 2020). Good staff attitudes such as practical communication skills, empathy, and responding to every complaint of tuberculosis can help patients complete treatment. Drug side effects that are handled optimally and recording and reporting tuberculosis drug side effects can improve service quality. Access to health services that are not accessible to patients can be overcome by collaborating with cross-sectoral organizations both government and non-government to deal with these problems. Family support is also a factor that can affect medication adherence, hospital staff can provide education to the patient's family regarding tuberculosis, good family understanding regarding tuberculosis will support patient compliance in completing treatment.

The failure rate to take medication was higher in TB patients with smear-positive than in TB patients with smear-negative and extrapulmonary tuberculosis (Zenbaba et al., 2021). The factors that influence patient adherence to taking anti-tuberculosis drugs are: (1) Supporters of swallowing drugs, (2) difficulty swallowing drugs regularly, (3) perceived benefits, and (4) perceptions of patient confidence to take medication. completed treatment (Gebremariam et al., 2021). Patients' understanding of TB disease and its treatment, beliefs about TB, trusted TB healthcare facilities, and their responsibilities in completing treatment are the most common factors influencing patients to complete treatment. The main driving factors were the support received from health facilities, family, and friends, the desire to avoid TB-related stigma, and good tolerance for TB drugs (Grigoryan et al., 2022). Research conducted at an integrated health home hospital revealed that TB patients' perception of their disease,



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drug side effects, and drug-taking supervisors was most related to medication adherence (Wulandari, 2015).

Pharmacists' knowledge will also affect their performance in educating patients. Verification, explanation of drug indications, effectiveness, safety, and compliance are points that should be explained to patients. Pharmacists' skills can provide patients confidence in understanding, hope, attention, and adherence to drug therapy regimens (Priyandani et al., 2022). Pharmacists are expected to be able to update knowledge about tuberculosis so that it is easy to invite patients to comply with their treatment.

The weakness of this review is that the research method uses a literature review limited to 8 articles discussed. Only a few literature reviews discuss the effect of service quality in health facilities on adherence to the treatment of tuberculosis patients. It only concerns the quality of service from the patient's perspective, which is associated with adherence to TB drugs.

CONCLUSION

The dimensions of SERVQUAL (Quality of Service) used to assess service quality according to patient perceptions are reliability, responsiveness, tangibles, assurance, and empathy. Other factors that influence patient adherence to taking anti-tuberculosis drugs are: 1) Supporters of taking drugs, 2) difficulty swallowing drugs regularly, 3) perceived benefits, 4) perception of patient confidence to complete treatment, 5) trust in health workers, 6) support health facilities, family and friends, and 7) the affordability of TB services. The dimensions of commitment, kindness, and reliability influence the regularity of taking anti-tuberculosis drugs. Healthcare facilities that serve tuberculosis patients should improve the quality of service on five dimensions: assurance, empathy, reliability, responsiveness, and tangibles.

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