

ANALYSIS OF TB POLYCLINIC SERVICE QUALITY FROM THE ASPECT OF TREATMENT COMPLIANCE AND PATIENT SATISFACTION AS A RESPONSE TO THE INCREASE IN TB CASES IN COMMUNITY HEALTH CENTER IN PALEMBANG

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ABSTRACT

WHO suggests seven dimensions of health service quality, namely effective, safe, patient-oriented, timely, efficient, fair, and integrated. Health centers are obliged to maintain good quality of service as a reflection of the quality of services provided to provide patient satisfaction. Tuberculosis continues to be a serious health problem in the world, including Indonesia. The incidence of tuberculosis is often associated with treatment compliance and patient satisfaction with health services. Data from the Palembang City health profile in 2020 showed that 43.8% of people suspected of tuberculosis received health services according to standards. This study aims to analyze the quality of TB poly services from the aspects of treatment compliance and patient satisfaction as a response to the increase in TB cases at the Palembang City Health Center. This type of research is analytic research with a cross-sectional design. Data were collected primarily through questionnaires and secondary through data on the number of TB patients at the Palembang City Health Center. The results showed that there was no significant relationship between the seven dimensions of service quality and treatment compliance ($p > 0.05$). On the other hand, there was a significant relationship between the seven dimensions of service quality and patient satisfaction ($p < 0.05$). So, the suggestion that can be given is the need for more in-depth and comprehensive research on other factors that might affect the quality of health services.

Keyword: Service quality, tuberculosis, treatment adherence, patient satisfaction.

I. INTRODUCTION

The perception of patients towards the service received (perceived service) and the expectations of patients towards service (expected service) are elements that affect service quality.¹ Service providers must reconcile the execution of perceived service with expected service to enable patients to evaluate it as quality.² WHO identifies seven elements of health service quality: effectiveness, safety, patient orientation, timeliness, efficiency, equity, and integration.³ Health centers, as fundamental health service providers offering curative services, must ensure the

maintenance of high service quality.⁴

Parasuraman identifies five elements of service quality: *responsiveness*, *tangibles*, *reliability*, *assurance*, dan *empathy*.⁵

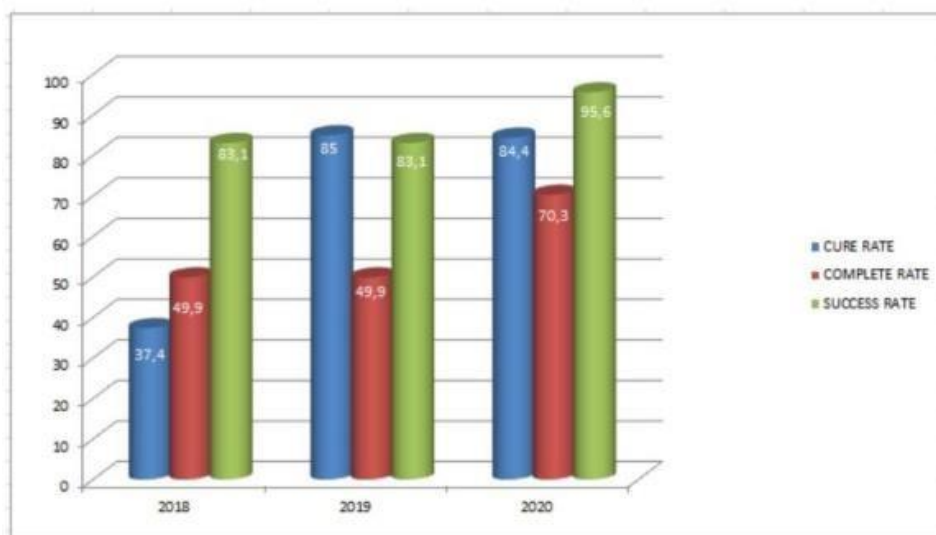
The patient's interactions with healthcare professionals and their surrounding environment serve as a crucial indicator of patient satisfaction. Consequently, the correlation between service quality and patient satisfaction has become a topic of discussion.⁶

Tuberculosis has become a global health problem, including in Indonesia. Tuberculosis is a chronic disease (> 3 months) caused by acid-fast bacillus (AFB) bacteria, namely *Mycobacterium*

tuberculosis. Transmission can increase through close contact with infected people through the air, saliva droplets, coughs, or saliva droplets in the long term.⁷⁻¹⁰ WHO stated that in 2023, 192 countries and territories with > 99% of the world's population reported tuberculosis case data showing a percentage of cases of 27% in India, 10% in Indonesia, 7.1% in China, 7% in the Philippines, 5.7% in Pakistan, 4.5% in Nigeria, 3.6% in Bangladesh, and 3% in the Democratic Republic of the Congo. In 2022, WHO showed that there were 7.5 million people diagnosed with tuberculosis in the world. Indonesia ranks 2nd with the highest tuberculosis cases in the world at 969,000 cases per year with case notifications of 724,309 cases (75%).

As much as 25% have not been notified, either not yet reached, not yet detected, or not reported.¹¹

According to data from the South Sumatra Provincial Health Office (2020), the case detection rate for pulmonary tuberculosis in South Sumatra was 32.8%. Furthermore, the treatment success rate for BTA-positive pulmonary tuberculosis patients in Palembang in 2020 reached 95.6%, surpassing the target of >90%. This achievement highlights the effectiveness of treatment management, supported by the commitment of healthcare workers and patient adherence to completing treatment under the supervision of TB Drug Swallowing Supervisors (PMO).¹²



Picture 1 Percentage of Tuberculosis Cases Achieved in Palembang City in 2018, 2019, and 2020.¹²

The rise in tuberculosis cases is frequently linked to treatment adherence and patient satisfaction with healthcare services.

Treatment adherence refers to the actions taken by patients regarding their treatment, which are assessed during follow-up visits

until the treatment course is completed. Conversely, patient satisfaction reflects the patient's perception of the differences in care, services, and treatment received both prior to and following their healthcare experience.^{13–15} Lingkan et al. (2021) identified a significant relationship between service quality and patient satisfaction at the Papakelan Health Center.⁶ Similarly, Sari et al. (2018) demonstrated that the assurance, empathy, and responsiveness dimensions of the *servqual* dimension had a substantial impact on the intention of tuberculosis patients to revisit Pirngadi Hospital in Medan.¹⁶

Data from the 2020 health profile of Palembang City indicates that 43.8% of individuals suspected of having tuberculosis received health services that met established standards.¹² Consequently, this research topic was selected to assess the quality of health services provided at health centers in Palembang City for tuberculosis patients. The study was motivated by the annual increase in tuberculosis cases in South Sumatra. Furthermore, there has been a lack of published analyses regarding the quality of TB polyclinic services, particularly concerning treatment adherence and patient satisfaction, as an evaluation of the rising tuberculosis cases at health centers in

Palembang City.

2. METHOD

This research employs an analytical study with a *cross-sectional* design, conducted at Health Center 1 Ulu, Health Center 4 Ulu, and Health Center 7 Ulu in Palembang City. The study population consists of all tuberculosis patients within the designated research areas, with samples selected using a *proportional random sampling* technique. Primary data were collected through questionnaires, while secondary data included the number of tuberculosis patients at the Palembang City Health Centers. Data analysis was performed using the *Chi-Square* test and specialized software to examine the relationship between the quality of TB polyclinic services, focusing on treatment adherence and patient satisfaction as an evaluation of tuberculosis cases at Palembang City Health Centers.

3. Results

Based on data collected from 85 pulmonary tuberculosis patients at the 4 Ulu Health Center and Sekip Health Center in Palembang, univariate analysis results reveal findings related to age, gender, treatment compliance, patient satisfaction, and seven dimensions of service quality: effectiveness, efficiency, fairness, integration, patient orientation, timeliness, and safety.

Frequency Distribution of Respondents by Age Group

Table 3.1 Frequency Distribution of Respondents by Age Group

Age	Frequency (n)	%
18–64 tahun	78	91,8
>64 tahun	7	8,2
Total	85	100,0

Based on age, table 3.1 shows that the majority of respondents are in the 18–64 year age range, namely 78 respondents (91,8%).

Frequency Distribution of Respondents by Gender

Table 3.2 Frequency Distribution of Respondents by Gender

Gender	Frequency (n)	%
Man	42	49,4
Woman	43	50,6
Total	85	100,0

Based on gender, table 3.2 shows that the majority of respondents were female, namely 43 respondents (50.6%).

Frequency Distribution of Respondents According to the Seven Dimensions of Health Service Quality

The seven dimensions of health service quality consist of effective, safety, patient-oriented or service user dimensions, efficient, timely, fair, and integrated or unified. Based on the effective dimension, the research results are shown as follows.

Table 3.3 4 Frequency Distribution of Respondents According to the Effective Dimensions

Effective	Frequency (n)	%
Good	77	90,6
Bad	8	9,4
Total	85	100,0

Table 3.3 shows that 77 out of 85 respondents stated that the quality of health services in the effective dimension was categorized as good (90.6%).

The research findings related to the safety dimension are presented as follows Table 3.5

Frequency Distribution of Respondents According to the Safety Dimensions

Safety	Frequency (n)	%
Good	75	88,2
Bad	10	11,8
Total	85	100,0

Table 3.4 shows that 75 out of 85 respondents stated that the quality of health services in the safety dimension was categorized as good (88.2%).

The research findings related to the patient-centered dimension are presented as follows Table 3.6

Frequency Distribution of Respondents According to Patient-Centered Dimensions.

Patient-centered	Frequency (n)	%
Good	78	91,8
Bad	7	8,2
Total	85	100,0

Table 3.5 shows that 78 of the 85 respondents stated that the quality of health services in the dimension of orientation towards patients or service users was categorized as good (91.8%).

The research findings related to the timeliness dimension are presented as follows. Table 3.7

Frequency Distribution of Respondents According to the Timeliness Dimension

On time	Frequency (n)	%
Good	80	94,1
Bad	5	5,9
Total	85	100,0

Table 3.6 shows that 80 of 85 respondents stated that the quality of health services in the timeliness dimension was categorized as good (94.1%).

The research findings related to the efficient dimension are presented as follows Table 3.8 Frequency Distribution of Respondents According to the Efficient Dimension

Efficient	Frequency (n)	%
Good	77	90,6
Bad	8	9,4
Total	85	100,0

Table 3.7 shows that 77 of 85 respondents stated that the quality of health services in the efficient dimension was categorized as good (90.6%).

The research findings related to the fair dimension are presented as follows. Table 3.9 Frequency Distribution of Respondents According to the Fair Dimension

Fair	Frequency (n)	%
Good	75	88,2
Bad	10	11,8
Total	85	100,0

Table 3.8 shows that 75 of 85 respondents stated that the quality of health services in the fairness dimension was categorized as good (88.2%).

The research findings related to the integration or unity dimension are presented as follows. Table 3.10 Frequency Distribution of Respondents According to the Integration or Consolidated Dimension

Intergrated or Consolidated	Frequency (n)	%
Good	80	94,1
Bad	5	5,9
Total	85	100,0

Table 3.9 shows that 80 of 85 respondents stated that the quality of health services in the integrated or unified dimension was categorized as good (94.1%).

Frequency Distribution of Respondents Based on Treatment Compliance Levels

The results of the study on the level of compliance with treatment by respondents are shown as follows.

Table 3.11 Distribusi Frequency Responden Berdasarkan Tingkat Treatment Compliance

Treatment Compliance	Frequency (n)	%
Obedient	77	90,6
Disobedient	8	9,4
Total	85	100,0

Table 3.10 shows that 77 of the 85 respondents were included in the category of being compliant with treatment (90.6%).

Frequency Distribution of Respondents Based on Patient Satisfaction

The results of the study on the level of patient satisfaction by respondents are shown as follows.

Table 3.12 Frequency Distribution of Respondents Based on Patient Satisfaction

Patient Satisfaction	Frequency (n)	%
Satisfied	71	83,5
Moderately satisfied	14	16,5
Total	85	100,0

Table 3.11 shows that 71 of 85 respondents were satisfied with the available health services (83.5%). Bivariate analysis was performed to examine the relationship between the independent variables, specifically the seven dimensions of service quality, and the dependent variables, which include treatment adherence and satisfaction among pulmonary tuberculosis patients. The findings of this analysis are presented as follows.

Relationship between Service Quality Dimensions and Treatment Compliance

Table 3.13 Relationship between Service Quality Dimensions and Compliance in Undergoing Treatment.

Variables	Treatment Compliance		Total n (%)	p
	Obedient n (%)	Disobedient n (%)		
Effective				0,113
- Good	71 (92,2%)	6 (7,8%)		
- Bad	6 (75,9%)	2 (25,0%)		
Safety				0,222
- Good	69 (92%)	6 (8%)		
- Bad	8 (80%)	2 (20%)		
Patient-centerd				0,070
- Good	72 (92,3%)	6 (7,7%)		
- Bad	5 (71,4%)	2 (28,6%)		
On time				0,403
- Good	73 (91,3%)	7 (8,8%)		
- Bad	4 (80%)	1 (20%)		

Variables	Treatment Compliance		Total n (%)	p
	Obedient n (%)	Disobedient n (%)		
Efficient	71 (92,2%)	6 (7,8%)		0,113
- Good	6 (75,9%)	2 (25,0%)		
- Bad				
Fairness				0,222
- Good	69 (92%)	6 (8%)		
- Bad	8 (80%)	2 (20%)		
Integrated				0,403
- Good	73 (91,3%)	7 (8,8%)		
- Bad	4 (80%)	1 (20%)		

Table 3.12 presents the study findings, indicating that a majority of patients who receive high-quality service tend to demonstrate compliance with their treatment. However, statistical analysis reveals no significant relationship between each dimension of service quality and treatment compliance ($p\text{-value} > 0.05$). For instance, the dimensions of effectiveness ($p = 0.113$), efficiency ($p = 0.113$), and patient orientation ($p = 0.070$) all yield p -values greater than 0.05, suggesting that the differences observed are insufficient to establish a significant relationship between these dimensions and patient compliance with treatment. Similar results are noted for the dimensions of fairness, integration, timeliness, and safety, which also show p -values exceeding 0.05, indicating an absence of a significant direct relationship between service quality and treatment compliance. Therefore, it can be inferred that other factors may exert a more substantial influence on treatment adherence, despite the essential role that service quality plays in shaping the patient's treatment experience.

Relationship between Service Quality Dimensions and Patient Satisfaction

Table 3.14 Relationship between Service Quality Dimensions and Patient Satisfaction

Variables	Kepuasan Pasien		Total n (%)	p
	Puas n (%)	Cukup puas n (%)		
Effective				0,000
- Good	70 (90,9%)	7 (9,1%)		
- Bad	1 (12,5%)	7 (87,5%)		
Safety				0,000
- Good	68 (90,7%)	7 (9,3%)		
- Bad	3 (30%)	7 (70%)		

Variables	Kepuasan Pasien		Total n (%)	p
	Puas n (%)	Cukup puas n (%)		
Patient-centered				0,000
- Good	70 (89,7%)	8 (10,3%)		
- Bad	1 (14,3%)	6 (85,7%)		
On time				0,007
- Good	69 (86,3%)	11 (13,8%)		
- Bad	2 (40%)	3 (60%)		
Efficient				0,000
- Good	69 (89,6%)	8 (10,4%)		
- Bad	2 (25,0%)	6 (75,0%)		
Fairness				0,000
- Good	68 (90,7%)	7 (9,3%)		
- Bad	3 (30%)	7 (70%)		
Integrated				0,007
- Good	69 (86,3%)	11 (10,3%)		
- Bad	2 (40%)	6 (85,7%)		

Table 3.13 presents the study findings, indicating a significant relationship between the dimensions of service quality and patient satisfaction, with a p-value of less than 0.05. This suggests that high-quality service is closely associated with elevated levels of patient satisfaction. Specifically, in the effectiveness dimension, 90.9% of patients who received good service reported satisfaction, compared to only 12.5% of those who experienced poor service ($p = 0.000$). Similarly, high levels of satisfaction were observed in the efficiency, fairness, and safety dimensions among patients receiving good service ($p = 0.000$). In the integrated and timeliness dimensions, patients who received good service also exhibited higher satisfaction levels, albeit with a slightly different p-value ($p = 0.007$), which still indicates a statistically significant relationship. Overall, the dimensions of high service quality demonstrate a direct correlation with patient satisfaction levels; improved service quality is likely to enhance patient satisfaction. Thus, service quality is pivotal in shaping patients' experiences and perceptions of healthcare facilities, ultimately contributing to increased patient satisfaction.

4. Discussions

Relationship between Service Quality Dimensions and Treatment Compliance

The analysis of Table 3.12 indicates that there is no significant relationship between service quality and treatment compliance. This finding is consistent with Jubaidah's study (2023), which reported no significant association between overall service quality dimensions and treatment compliance among tuberculosis patients at the Samarinda Ulu District Health Center ($p = 0.731$). However, this contrasts with research conducted by Putri (2019), which identified a significant relationship between service quality and TB treatment compliance at the Labuhan Maringgai Health Center in 2018 ($p = 0.005$). Putri's study highlights that improved healthcare service quality positively impacts TB patients' adherence to treatment.

Relationship between Service Quality Dimensions and Patient Satisfaction

The analysis of Table 3.13 indicates a significant correlation between service quality dimensions and patient satisfaction. This aligns with Syapitri's (2021) findings, which demonstrated a moderate correlation between healthcare service quality and satisfaction among Lung TB patients undergoing DOTS strategy treatment at the Helvetia Medan Health Center ($p = 0.003$). Syapitri utilized SERVQUAL indicators, encompassing

tangibles, responsiveness, reliability, assurance, and empathy. Similarly, Toliaso (2018) reported that SERVQUAL dimensions significantly influenced patient satisfaction at the Puskesmas Bahu in Manado City ($p = 0.025$).

5. Conclusion

Based on research above, it can be concluded that the seven dimensions of health service quality do not exhibit a significant relationship with treatment compliance among pulmonary tuberculosis patients at Puskesmas 4 Ulu and Puskesmas Sekip in Palembang. In contrast, patient satisfaction is significantly associated with the seven dimensions of health service quality, demonstrating a direct relationship with the satisfaction levels of pulmonary tuberculosis patients at both Puskesmas 4 Ulu and Puskesmas Sekip Palembang.

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