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The Relationship Between Service Waiting Time Andoutpatient Satisfaction At Tonsea Lama Community Health Center (PUSKESMAS)

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Abstract

Waiting time is one of the quality indicators influencing patient satisfaction in primary healthcare facilities. Community Health Center, as the frontline of primary healthcare, is required to provide fast, efficient, and patient-oriented services. This study aimed to analyze the relationship between waiting time and outpatient satisfaction at Tonsea Lama Community Health Center. This quantitative study with a cross-sectional design involved 96 respondents selected by accidental sampling. Inclusion criteria included outpatients aged over 18 years, able to communicate well, and willing to participate. The instruments consisted of a waiting time observation sheet and a SERVQUAL questionnaire that had been tested for validity (Corrected Item-Total Correlation = 0.683–0.927) and reliability (Cronbach's Alpha = 0.975). Data were analyzed univariately to describe the frequency distribution of respondent characteristics, waiting time, and patient satisfaction, and bivariate using the Chi-Square test and Odds Ratio (OR) with a significance level of 5%. Of 96 respondents, 50 respondents (52.1%) experienced waiting time within the standard (≤60 minutes) and 46 respondents (47.9%) experienced waiting time beyond the standard (>60 minutes). Patient satisfaction levels showed 58 respondents (60.4%) were satisfied and 38 respondents (39.6%) were dissatisfied. There was a significant relationship between waiting time and outpatient satisfaction (p = 0.001; OR = 4.117; 95% CI = 1.721–9.849). Patients with waiting time within the standard had a 4.117 times greater chance of being satisfied compared to patients with waiting time beyond the standard. Waiting time is significantly related to outpatient satisfaction at Tonsea Lama Community Health Center. Effective waiting time management, such as adding doctors during peak hours, optimizing the registration flow, and implementing a digital queue system, is recommended to improve patient satisfaction.

Keywords: Waiting Time, Patient Satisfaction, Outpatient, Puskesmas, SERVQUAL

INTRODUCTION

Community Health Centers (Puskesmas) play an important role in providing primary healthcare services to the community. As the frontline of primary healthcare, Community Health Centers provide a range of services, including health promotion, disease prevention, treatment, rehabilitation, and outpatient care. In carrying out these responsibilities, Community Health Centers are expected to deliver healthcare services that are effective, efficient, high-quality, and responsive to community needs. Healthcare quality is determined not only by the clinical outcomes of medical interventions but also by patients' experiences throughout the service process (Anita & Febriawati, 2019).

Patient satisfaction refers to an individual's level of contentment after comparing the healthcare services received with expectations formed before receiving those services. Patients tend to be satisfied when the services provided meet or exceed their expectations; dissatisfaction may arise when the services received do not meet those expectations. Patient satisfaction is important because it can affect public trust in healthcare facilities and patients' willingness to use the same services again. Therefore, improving patient satisfaction should be an essential component of healthcare quality management, particularly in outpatient services that are widely used by the community (Az-zahroh, 2017; Ichsan & Alfiandari, 2025).

A study by Ningsih and Indirwan (2025) in Minahasa Regency found that community satisfaction with health-program services at Community Health Centers still required

improvement. Among 57 respondents, 42.1% reported being satisfied. Factors that encouraged satisfaction included adequate information, friendly staff, and affordable costs, whereas insufficient information and socialization and inflexible program schedules were identified as barriers. These findings indicate that people's experiences with Community Health Centers services are shaped by several service-related aspects, rather than solely by the outcomes of the services received (Ningsih & Indirwan, 2025).

One important factor associated with patient satisfaction is healthcare waiting time. Waiting time refers to the period between completion of the registration process and the start of a medical examination by a healthcare professional. It reflects the effectiveness of healthcare service management, the availability of human resources, and the readiness of facilities and infrastructure. Excessive waiting time may cause discomfort, boredom, and anxiety among patients, thereby affecting their perceptions of the quality of care received. According to the Indonesian Ministry of Health Regulation No. 30 of 2022, the outpatient waiting-time standard is no more than 60 minutes, measured from completion of patient registration until the patient receives a medical examination (Ministry of Health of the Republic of Indonesia, 2022; Lestari et al., 2020).

Waiting-time problems continue to occur in various healthcare facilities, including Community Health Centers. Waiting times that exceed the established standard may indicate inefficiencies in healthcare delivery, such as a shortage of healthcare personnel, high patient volumes, and inadequate queue management and registration procedures. In addition to affecting patient comfort, prolonged waiting times can create a gap between patients' expectations and their actual service experiences. From a healthcare quality perspective, the timeliness with which healthcare personnel assist and serve patients is an important aspect contributing to positive patient perceptions (Supriyati & Kusumaningsih, 2023; Sukur, 2023).

Patient satisfaction levels in North Sulawesi vary across healthcare facilities. Studies at Sario and Ranotana Weru Community Health Centers in Manado reported patient satisfaction levels of 42% and 65%, respectively. Meanwhile, a study at Bailang Community Health Center in Manado found that 73% of respondents were satisfied with the healthcare services provided. Another study at GMIM Pancaran Kasih General Hospital in Manado reported that 66.7% of respondents considered waiting time to be good, whereas 33.3% considered it unsatisfactory. These differences indicate that healthcare quality and patient experiences may vary according to the circumstances and management practices of each facility (Mokobimbing et al., 2019; Awalinda et al., 2019; Lukas et al., 2025). At Tonsea Lama Community Health Center, a previous study by Pasaribu, Pajung, and Mamuaja (2026) found a significant relationship between healthcare service quality and patient satisfaction ($p = 0.000$; $r = 0.824$). The study also confirmed that complaints about waiting time remained an issue experienced by patients, making the topic relevant for further investigation.

Rombon et al. (2021) also found that healthcare service quality had a significant effect on patient satisfaction at Papakelan Community Health Center. Their quantitative cross-sectional study involving 30 respondents reported a significance value of 0.000 ($p < 0.001$). Although that study assessed overall service quality rather than waiting time as a separate variable, its findings support the importance of the quality of the service process in shaping patient satisfaction at community health centers (Rombon et al., 2021).

Previous studies have reported a relationship between waiting time and patient satisfaction. Dewi et al. (2021), in a study at Lubuk Begalung Community Health Center in Padang, found a significant relationship between waiting time and patient satisfaction. Similar findings were reported by Klawdina (2021) at Baloi Permai Community Health Center in Batam, where waiting time was associated with patient satisfaction. However, not all studies have reported consistent findings. Triyoso et al. (2021), in a study at Bengkumat

Belimbing Community Health Center, found no significant relationship between waiting time and outpatient satisfaction. A study at Lerep Community Health Center also reported no statistically significant relationship between these variables. These differences suggest that the relationship between waiting time and patient satisfaction may vary according to healthcare facility characteristics and other service-related factors, including staff attitudes, friendliness, waiting-room comfort, and the clarity of information provided to patients (Munawwaroh & Indrawati, 2022).

Waiting-time problems have also been identified at Tonsea Lama Community Health Center in Minahasa Regency, North Sulawesi. Preliminary data indicate that the facility has 16 active healthcare workers: two general practitioners, one dentist, six nurses, and seven midwives, with an average of approximately 80 outpatient visits per day. When general outpatient examinations are handled by two general practitioners, each doctor serves approximately 40 visits per day. This situation may lead to service queues, particularly during peak hours. Initial observations also indicated that outpatient waiting times at Tonsea Lama Community Health Center ranged from 50 to 70 minutes, meaning that some patients had to wait longer than the established service standard. These findings highlight the importance of evaluating waiting-time management to ensure more efficient service delivery and better fulfilment of patient expectations (Afkar, 2026; Ministry of Health of the Republic of Indonesia, 2022).

In addition, Tonsea Lama Community Health Center has provided a patient satisfaction survey facility through a barcode system, with the survey data processed by the Minahasa Regency Health Office. However, the results of these surveys have not been optimally used by the health center as an internal evaluation tool to identify the relationship between waiting time and patient satisfaction. Complaints about prolonged waiting times, together with instances in which waiting times exceed the established standard, indicate the need for research providing empirical evidence about outpatient services at Tonsea Lama Community Health Center. Such research is important because waiting time is one service-related aspect that may affect patients' experiences and perceptions of healthcare quality.

Based on these considerations, this study was conducted to analyze the relationship between waiting time and outpatient satisfaction at Tonsea Lama Community Health Center. The findings are expected to provide empirical evidence regarding the relationship between waiting time and patient satisfaction and to serve as a basis for evaluating healthcare service management, optimizing patient queue processes, improving service efficiency, and enhancing patient-centered healthcare quality.

RESEARCH METHODS

This quantitative analytical study used a cross-sectional design to examine the relationship between waiting time and outpatient satisfaction at Tonsea Lama Community Health Center, Minahasa Regency, North Sulawesi Province, Indonesia. The study population consisted of all outpatients who received healthcare services at the health center during the study period. A total of 96 respondents were included. The sample size was determined using the Lemeshow formula, with a 95% confidence level and a 10% margin of error. Participants were recruited through accidental sampling; patients encountered during the study period were enrolled if they met the eligibility criteria. The inclusion criteria were outpatients aged over 18 years, able to communicate effectively, and willing to participate. Patients requiring emergency care and those who did not complete the questionnaire were excluded.

The independent variable was outpatient waiting time, while the dependent variable was patient satisfaction. Data were collected using two instruments: a waiting-time

observation sheet and a patient satisfaction questionnaire based on the Service Quality (SERVQUAL) method. Waiting time was measured through direct observation, beginning when the registration process was completed and a queue number was issued, and ending when the patient was called to enter the examination room. Waiting time was classified into two categories: within the standard (≤60 minutes) and exceeding the standard (>60 minutes).

Patient satisfaction was assessed using a 15-item SERVQUAL questionnaire covering five service-quality dimensions: tangibles, reliability, responsiveness, assurance, and empathy. Each statement was measured using a four-point Likert scale. The total score was classified into two satisfaction categories: dissatisfied (15–37) and satisfied (38–60). The questionnaire had been tested for validity and reliability, with Corrected Item-Total Correlation values ranging from 0.683 to 0.927 and a Cronbach's Alpha coefficient of 0.975.

Data analysis consisted of univariate and bivariate analyses. Univariate analysis was performed to describe the frequency distributions and percentages of respondent characteristics, waiting time, and patient satisfaction. Bivariate analysis used the Pearson Chi-Square test to examine the relationship between waiting time and outpatient satisfaction, with a significance level of 5% ($\alpha = 0.05$). The Odds Ratio (OR) was also calculated to determine the odds of satisfaction according to waiting-time category.

RESULTS AND DISCUSSION

Univariate Analysis

Table 1. Respondent Characteristics, Waiting Time, and Patient Satisfaction

Variables	Categories	n	%
Sex	Female	73	76.0
	Male	23	24.0
Age	≥48 years	42	43.8
	18–27 years	23	24.0
	38–47 years	21	21.9
	28–37 years	10	10.4
Waiting time	Within standard (≤60 minutes)	50	52.1
	Beyond standard (>60 minutes)	46	47.9
Patient satisfaction	Satisfied	58	60.4
	Dissatisfied	38	39.6
Total		**96**	**100**

As shown in Table 1, most respondents were female and belonged to the ≥48-year age group. Regarding waiting time, most patients received services within the established standard, although a substantial proportion still experienced waiting times beyond the recommended limit. Overall, most patients were classified as satisfied.

Bivariate Analysis

Table 2. Relationship Between Waiting Time and Patient Satisfaction

Waiting time	Satisfied		Dissatisfied		Total		*p-value*	*OR (95% CI)*
	n	%	n	%	n	%		
Within standard	38	76.0	12	24.0	50	100	0,001	4,117 (1,721-9,849)
Beyond standard	20	43.5	26	56.5	46	100		
Total	58	60.4	38	39.6	96	100		

As presented in Table 2, patients whose waiting times met the established standard tended to report satisfaction, whereas dissatisfaction was more common among patients who experienced longer waiting times. The analysis showed a relationship between waiting time and patient satisfaction ($p < 0.05$). The OR indicates that patients receiving services within

the waiting-time standard had 4.117 times the odds of being satisfied compared with those whose waiting time exceeded the standard.

Discussion

The findings of this study indicate a significant relationship between service waiting time and outpatient satisfaction at Tonsea Lama Community Health Center. The Chi-Square test yielded a p-value of 0.001 ($p < 0.05$), leading to rejection of H0 and acceptance of Ha. The Odds Ratio (OR) of 4.117 (95% CI: 1.721-9.849) indicates that patients who received services within the waiting-time standard (≤60 minutes) had 4.117 times the odds of being satisfied compared with patients whose waiting time exceeded the standard (>60 minutes). These findings indicate that waiting-time management at Tonsea Lama Community Health Center has not yet been fully optimized, particularly because 47.9% (46 of 96 respondents) experienced waiting times that did not meet the standard.

The high proportion of patients experiencing waiting times above the standard is related to the availability of healthcare personnel at Tonsea Lama Community Health Center. Based on preliminary data obtained by the researchers, the health center has two general practitioners who serve an average of 80 outpatient visits per day, resulting in a doctor-to-patient ratio of approximately 1:40 per day. This ratio is relatively high and may lead to service queues, particularly during busy morning hours. The situation may be compounded by the limited number of nurses and midwives available to support the outpatient service flow. When patients have to wait more than 60 minutes for a doctor's examination, this may cause boredom and fatigue and may also lower their overall perception of service quality.

Theoretically, waiting time is an important indicator for assessing healthcare service quality. According to the Indonesian Ministry of Health (2022), the outpatient waiting-time standard is ≤60 minutes from completion of patient registration until the patient receives an examination. A short waiting time reflects efficient service management, the readiness of healthcare personnel, and an orderly queue system in healthcare facilities. Conversely, waiting times that exceed the standard may cause discomfort, boredom, anxiety, and fatigue among patients, thereby influencing their assessment of the services received.

The findings are also consistent with the Service Quality (SERVQUAL) theory proposed by Parasuraman et al. (1988), particularly the responsiveness dimension. Responsiveness refers to staff willingness to provide prompt service and assist patients in a timely manner. In outpatient care, the speed with which patients receive services after registration is a tangible expression of healthcare staff responsiveness. When patients have to wait too long, their perceptions of service quality may decline even when other aspects of care are adequate. This finding is supported by research at Depok I Community Health Center, which found that the responsiveness dimension contributed 70% to satisfaction, lower than reliability (72.9%) and empathy (71.3%), indicating that service speed remains an area for improvement in primary healthcare.

The findings are consistent with Rombon et al. (2021), who found a significant effect of healthcare service quality on patient satisfaction at Papakelan Community Health Center ($p < 0.001$). Their results reinforce the understanding that patient satisfaction is related to the overall quality of services received. However, Rombon et al. did not examine waiting time specifically; therefore, their findings support the general relationship between service quality and satisfaction rather than providing direct evidence about waiting time.

The findings are consistent with Rosida (2024), who found a significant relationship between service waiting time and outpatient satisfaction at RSPAL Dr. Ramelan Surabaya. That study indicated that patients waiting more than 60 minutes tended to report higher dissatisfaction than patients with shorter waiting times. Similar results were reported by Dewi et al. (2021) at Lubuk Begalung Community Health Center in Padang, who found a significant relationship between waiting duration and patient satisfaction (p-value = 0.000).

The study concluded that most patients experiencing long waiting times were dissatisfied with the services provided. Klawdina (2021), in a study at Baloi Permai Community Health Center in Batam, also reported consistent findings, with a p-value of 0.001 and an Odds Ratio of 7.263 (95% CI: 2.143–...), indicating a greater risk of dissatisfaction among patients experiencing long waiting times. Although the OR in the present study (4.117) was lower than that reported by Klawdina (2021), this difference may be related to differences in the characteristics of the study settings. Baloi Permai Community Health Center is located in an urban area with a higher patient volume, which may make the effect of waiting time on satisfaction more pronounced.

The findings are also consistent with the study by Pasaribu et al. (2026) at Tonsea Lama Community Health Center, which found a significant relationship between healthcare service quality and patient satisfaction (p = 0.000). Thus, the present study strengthens empirical evidence that improvements in service aspects, particularly service speed and timeliness, are important for patient satisfaction at Tonsea Lama Community Health Center. The findings are also consistent with Nender et al. (2026), who found that outpatient service quality significantly affected patient satisfaction at Tandengan Community Health Center. Although that study used a regression approach whereas the present study used the Chi-Square test, both concluded that service quality, including service speed as reflected in waiting time, is an important factor in determining patient satisfaction.

Nevertheless, not all patients whose waiting times exceeded the standard were dissatisfied. In this study, 20 respondents (43.5%) remained satisfied despite waiting more than 60 minutes. In the study by Triyoso et al. (2021), some respondents whose waiting times met the standard (<60 minutes) were nevertheless dissatisfied with the healthcare services received. Similarly, findings at Lerep Community Health Center indicated no significant relationship between waiting time and patient satisfaction (p = 0.938). There were 21 respondents (19.1%) who remained satisfied despite long waiting times (>30 minutes), while 31 respondents (28.2%) were dissatisfied even though their waiting times were relatively short (Munawwaroh & Indrawati, 2022). These findings indicate that patient satisfaction is influenced not only by waiting time but also by other factors, such as staff attitudes, service friendliness, waiting-room comfort, clarity of information, and patients' expectations. Munawwaroh and Indrawati (2022) also found that outpatient satisfaction was significantly associated with other factors, including staff empathy (p = 0.008), service and registration quality (p = 0.0001), and ease of access to information (p = 0.0001). Ningsih and Indirwan (2025) likewise identified adequate information, staff friendliness, and affordable costs as factors encouraging satisfaction, while insufficient socialization and inflexible service schedules were barriers. Therefore, clear information, staff communication, and service scheduling should be considered alongside waiting time when seeking to improve patient satisfaction. In the present study, 12 respondents (24.0%) were dissatisfied despite waiting within the standard, suggesting that factors beyond waiting time also contributed to satisfaction. These factors may include the quality of doctor-patient communication, the completeness of waiting-room facilities, and the cleanliness and comfort of the health center environment. The findings are also consistent with Tani et al. (2023), who stated that patient satisfaction at Puskesmas is influenced simultaneously by several service dimensions rather than by a single factor. This helps explain why some patients remained dissatisfied despite waiting within the standard, as other service dimensions such as assurance and tangibles may also shape perceptions of satisfaction.

In the context of Tonsea Lama Community Health Center, the findings indicate that waiting-time management remains an aspect that requires attention in efforts to improve healthcare service quality. The high number of outpatient visits each day may lead to service queues, particularly during peak hours. This situation may be influenced by limited

healthcare personnel, registration administration, and service procedures that are not yet fully optimized. Regular evaluations of the queue system, service schedules, distribution of healthcare personnel, and use of supporting facilities are therefore needed to shorten patient waiting times.

Overall, this study demonstrates a significant relationship between service waiting time and outpatient satisfaction at Tonsea Lama Community Health Center. Patients who received services within the established waiting-time standard tended to report higher satisfaction than those who experienced longer waiting times. Therefore, controlling and improving the service waiting-time system should be a priority in efforts to enhance service quality and patient satisfaction at Tonsea Lama Community Health Center. The findings also have practical implications for health center management, including considering additional doctors during peak hours, implementing a digital queue system, and optimizing the process from registration to examination in order to reduce patient waiting times.

Although waiting time was significantly associated with patient satisfaction, the findings show that meeting the waiting-time standard does not necessarily guarantee satisfaction. This is reflected by the 12 respondents (24.0%) who received services within the standard but were still classified as dissatisfied. Conversely, 20 respondents (43.5%) experienced waiting times beyond the standard but remained satisfied. These findings indicate that waiting time is one aspect associated with patient satisfaction, but it is not the only factor determining satisfaction. Other factors, such as the quality of staff communication, waiting-room comfort, completeness of facilities, and patients' expectations of healthcare services, also contribute to overall perceptions of satisfaction.

Several limitations should be considered when interpreting the findings of this study. Waiting time was measured during a specific study period and may not represent variations in service waiting times throughout all service periods at Tonsea Lama Community Health Center. The cross-sectional design measured the relationship at a single point in time; therefore, it cannot assess long-term changes in patient satisfaction or establish a causal relationship. Patient satisfaction is a subjective assessment, and respondents may have different perceptions of the services received even when their waiting times are relatively similar. This study analyzed waiting time as one factor associated with patient satisfaction and did not include other service-related factors, such as staff communication and friendliness, facility comfort, clarity of information, and the quality of care received. This is reflected in the respondents who remained dissatisfied despite waiting within the standard. Finally, this study was conducted at only one community health center, Tonsea Lama Community Health Center; therefore, the findings cannot be widely generalized to all community health centers in Minahasa Regency.

CONCLUSION

Based on the findings, it can be concluded that waiting time is associated with outpatient satisfaction at Tonsea Lama Community Health Center. Patients who receive services within the established waiting-time standard tend to have higher satisfaction than those who experience longer waiting times. These findings indicate that timely and efficient service delivery is important for improving patient satisfaction. Therefore, optimizing queue management, improving registration procedures, and adjusting service schedules and healthcare personnel availability should be considered to improve service quality and outpatient satisfaction.

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