



PATIENT SATISFACTION WITH QUALITY AMONG TYPE 2 DIABETES PATIENTS AT PUSKESMAS LEMPAKE IN 2025

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Abstract

Rising prevalence and number of diabetic patients worldwide pose challenges for treatment success due to the chronic nature of diabetes itself. Evaluating healthcare service quality is important to ensure treatment continuity for chronic disease management, especially for Type 2 Diabetes Mellitus (T2DM). This research was conducted from August through October 2025, with a total of 60 respondents. The instrument used in this research was SERVQUAL, measuring five dimensions (Reliability, Responsiveness, Assurance, Empathy, and Tangibles) with analysis of each dimension's gap between patients' expectations and perceptions. The results showed most respondents (66.67%) were satisfied with the services provided. However, the overall gap revealed negative values across all dimensions, indicating that patients' expectations were not fully met. The widest gaps were found in Tangibles (-0.11) and Reliability (-0.11) dimensions, specifically about physical infrastructure and service accuracy. Meanwhile, Assurance and Empathy were dimensions with the smallest gaps (-0.05), reflecting high trust in medical personnel and their attitude. Although the majority of T2DM patients are satisfied, gaps in service quality remain, especially in physical evidence and reliability. Improvements should be made with infrastructure maintenance and internal evaluation for the Prolanis implementation to further enhance patient experience.

Keywords: Patient Satisfaction, Primary Health Care, Type 2 Diabetes Mellitus, SERVQUAL

Introduction

The prevalence of diabetes mellitus (DM) continues to rise globally. The International Diabetes Federation (IDF) reported in 2021 that the Western Pacific Region, which included Indonesia, had one-third of global cases with a prevalence of 11.9% that is projected to increase to 14.4% in 2045.¹ In Indonesia, the Indonesia Health Survey (SKI)² in 2023 revealed a 0.7% increase in Type 2 Diabetes Mellitus (T2DM) among the population aged ≥ 15 years compared with Riskesdas 2018 data. On the provincial level of East Kalimantan, the total of T2DM patients increased from 71.583 in 2018 to 86.811 in 2023.³ As the frontline of the health system in Indonesia, primary health care in the presence of community health center (Puskesmas) serves as the essential facility for long-term management of this chronic disease while encouraging rehabilitative, palliative efforts to maintain the quality of life among T2DM patients.

Many studies have shown the quality of healthcare services directly impacts clinical outcomes for T2DM patients. Quality services can lead to better patient satisfaction, which serves as a strong predictor of better treatment adherence. Sullivan et al.⁴ and Wu et al.⁵ said that continuous monitoring

and education are components of quality service that improve glycemic control. On the contrary, neglecting patients' satisfaction poses risks, as Chihaoui et al.⁶ concluded that negative experiences and dissatisfaction can lead to patient discontinuing their treatment and worsening the health outcomes.

Prior studies present a varied landscape regarding DM patient satisfaction with the healthcare they receive. For instance, Jalil et al.'s⁷ research in Pakistan found that patients were dissatisfied with the doctor-patient communication aspect, whereas Sari & Nuraini⁸ found that the majority of patients were satisfied overall, with the lowest aspect found in physical evidence. Chihaoui et al.'s⁶ research in a hospital found that overcrowding, waiting times, and facility comfort were components for dissatisfaction. However, research specifically focusing on T2DM patient satisfaction is limited in Samarinda City. To fill this gap, this study focuses on the population from North Samarinda District, especially in the working area of Puskesmas Lempake, which accounts for about 20.8% of the population from the whole district.

Therefore, this study aims to determine the perception of patient satisfaction and analyze the quality of service based on SERVQUAL dimensions among T2DM patients at Puskesmas Lempake, Samarinda.

Method

This study uses an observational descriptive quantitative design. The research was conducted at Lempake Community Health Center (Puskesmas), Samarinda City, from August through October 2025. The population for this study consisted of T2DM patients receiving healthcare services at the facility. A total of 60 respondents were included as the sample using a convenience sampling technique. The inclusion criteria were T2DM patients found at the General Polyclinic or Prolanis program during the study period who were willing to participate and were above 15 years old at the time of data collection. While the exclusion criteria were patients that diagnosed with Type 1 DM.

The primary instrument used for data collection was a questionnaire based on the SERVQUAL questionnaire used in Effendi and Junita's research.⁹ The instrument measured five dimensions of service quality, covering Reliability, Responsiveness, Assurance, Empathy, and Tangibles. Each question asked for how the patient expectations and perceptions regarding the component inquired. Validity and reliability testing confirmed the instrument was suitable for use. Previous studies using this instrument have demonstrated high reliability, with Cronbach's Alpha values indicating strong internal consistency.¹⁰ The SERVQUAL method itself used due to being one of preferred methods in satisfaction studies.¹¹

Data analysis was performed using gap analysis approach. This involves subtraction between the Perception Score (P) and the Expectation Score (E) for each SERVQUAL question ($\text{Gap} = P - E$). A negative gap score means that patient expectations were not met, while a positive score signals that perceptions were met or exceeded expectations. This quantitative analysis was used to determine the overall patient satisfaction and to identify specific dimensions requiring improvement.^{12,13}

Results

The study collected data from 60 respondents. As presented in Table 1, most respondents were female (71.7%) and aged over 45 years old (86.6%). For educational background, the largest group came from high school graduates (33.3%), followed by elementary school education (30.0%). For jobs, most are occupied as housewives (56.7%). As for the duration of treatment at the facility, most respondents have been treated for more than 3 years (63.3%). While in terms of JKN status, the majority of the respondents were not subsidized (Non-PBI) (78.3%). The mean age of respondents was 56.07 years (SD ± 10.3), ranging from 33 to 78 years.

Table 1 Demographic and Clinical Characteristics of Respondents (n=60)

Characteristics	Frequency (n)	Percentage (%)
Gender		
Male	17	28.3
Female	43	71.7
Age Group		
< 45 Years	8	13.4
≥ 45 Years	52	86.6
Education		
Elementary	18	30.0
Junior High	12	20.0
Senior High	20	33.3
University	10	16.7
Occupation		
Housewife	34	56.7
Private Employee	6	10.0
Governmental Employee	3	5.0
Unemployed	9	15.0
Others	8	13.3
Duration of Treatment		
≤1 Years	6	10.0
1-3 Years	16	26.7
≥ 3 Years	38	63.3
JKN Status		
PBI	13	21.7
Non-PBI	47	78.3

Overall, based on patient satisfaction, most respondents were satisfied (66.7%) with the service provided, as shown in Table 2. The largest proportion of the satisfied group came from Non-PBI respondents. In contrast, within the PBI group, the differences between satisfied and dissatisfied only count for about 7.6%, which is narrow.

Table 2 Respondents Satisfaction Level based on JKN Status

JKN Status	Level of Satisfaction				Total	
	Dissatisfied	%	Satisfied	%	n	%
PBI	6	46.2	7	53.8	13	100.0
Non-PBI	14	29.8	33	70.2	47	100.0
Total	20	33.3	40	66.7	60	100.0

As for gap analysis, each dimension based on SERVQUAL methods revealed a negative gap, this indicates that patient ideal expectations for service provided were not met. As detailed in Table 3,

the Tangibles and Reliability dimensions both have the widest negative gaps (-0.11), suggesting these dimensions are the primary cause for dissatisfaction. Contrarily, the dimensions with the smallest gap were Assurance and Empathy (-0.05), this suggests the value for these dimensions was closer to the ideal respondents expected service provided.

Table 3 Gap Analysis of SERVQUAL Dimensions

Dimension	Average Perception Score	Average Expectation Score	Gap Score (P-E)
Tangibles	4.13	4.24	-0.11
Reliability	4.16	4.23	-0.11
Responsiveness	4.20	4.25	-0.07
Assurance	4.19	4.25	-0.05
Empathy	3.94	4.05	-0.05

Specific questions within these dimensions provided deeper insights. In the Tangibles dimension, the question regarding the condition of the physical build was reported to have the widest gap (-0.27), whereas staff appearance and cleanliness showed much narrower gaps (-0.05). In Reliability, respondents expressed concern regarding the accuracy of healthcare provided (-0.18), while in contrast they were relatively satisfied with the explanation of medical actions that were to be given (-0.08).

For Empathy dimension, although the overall gap was small, a significant contrast was found in the service time aspect (-0.17), suggesting respondents felt consultation times were insufficient. Notably, the item regarding non-discriminatory attitude showed a perfect gap of 0.00, confirming that respondents felt treated equally regardless of social status.

Discussion

Characteristics of the Study Respondents

The data showed that most respondents were female (71.7%), a finding that is coherent with national data from SKI 2023 (58.6%) and also from Rasdianah¹⁴ with a value of 74.7%. The female dominance can be attributed to two factors. First, women are generally proactive about their own health, exhibiting health-seeking behavior resulting in higher visit frequencies to health care facilities.¹⁵ Second, women have a higher tendency to get central obesity, which causes an increase in free fatty acids and proinflammatory cytokines, triggering insulin resistance.^{16,17} Third, based on the SKI 2023, women have higher tendency medication adherence compared to men, thus when the drugs have run out they will go control also asking for the next batch of drugs. While age, with most respondents being over 45 years old (86.6%), which is coherent with national data and also from Mankar et al.'s¹⁸ with mean age of 52,8 years, is associated with declining pancreatic β -cell metabolism and proliferation capacity, resulting in decreased insulin secretion and increasing peripheral insulin resistance.¹⁹

A high prevalence of housewives (56.7%) was also found by Paris et al.,²⁰ with a smaller proportion, but they remain the majority of the population valued at 48.5%. Nationally, SKI 2023 reported that 43% of T2DM patients were unemployed. This finding calls for special attention in terms of lifestyle management. Although housewives are physically active with domestic chores, these activities they do every day are often intermittent and of low intensity, failing to meet the criteria for aerobic exercise intended for glycemic control. This lack of intense activity results in a calorie surplus under the perception of being "active." Furthermore, the mental load of household management can trigger chronic stress, causing an increase in cortisol and inducing insulin resistance, while also increasing the risk for T2DM.²¹

The educational background of respondents varied most were Senior High School graduates (33.3%), followed by Elementary School (30.0%). This finding wasn't following another research

pattern. SKI 2023 reported most T2DM population were from Elementary School graduates (29.2%), with the second most from Senior High School (28.9%). The education level has implications in health literacy, especially essential in long-term T2DM treatment. Lower education levels can negatively impact treatment outcomes due to limited understanding of thorough DM management strategies such as nutritional intervention and other treatment pillars.²²

Satisfaction Level

Based on satisfaction level, most respondents were satisfied (66.7%) with the services provided. The same was reported in Rasdianah's¹⁴ study mentioned 60.2%, also from Putri & Umaroh²³ with a higher percentage, found 90% satisfied with DM care provided. However, despite the high level of satisfaction, gap analysis from all five SERVQUAL dimensions yielded negative scores. This suggests that while the patients report being "satisfied" overall, yet their expectation hasn't met with the perceived experience. The service they received was adequate to meet their comfortable level, but there is still room for improvement to make the service truly excellent.

SERVQUAL Dimensions

Assurance and Empathy dimensions showed the smallest gap compared to others (-0.05), identifying them as the strongest aspects of service at Puskesmas Lempake. This finding contradicted the Bunet et al.²⁴ study, which mentions these two dimensions have much wider gaps. While Darmawan et al.²⁵ reported both dimensions have positive gap values. A notable highlight in this study is the item regarding non-discriminatory service, which was found to have a perfect gap of 0.00. This confirms that medical personnel provide service equally to PBI and Non-PBI patients. This interpersonal strength itself is crucial for chronic disease management. As noted by Hojat et al.²⁶, physician empathy and trust are significant predictors of treatment adherence and better clinical outcomes.

Conversely, Tangibles and Reliability dimensions were identified with the widest gap (-0.11). Specifically, the item regarding the facility condition recorded the largest negative gap (-0.27). Though, compared to Bunet et al.²⁴ and Soleman et al.,²⁷ the findings have narrower gaps compared to their study. These negative values echo with Chihaoui et al.'s⁶ study, that facility comfort was a major source of dissatisfaction. While the staff's appearance and cleanliness were mentioned narrower gaps, the infrastructure of the Puskesmas remains a pain point for patients.

Furthermore, within the Reliability and Empathy dimensions, items about "service accuracy" based on respondents' perception (-0.18) and "consultation time" (-0.17) were prominent. This likely correlates with the high workload in the Puskesmas itself as a primary care facility. While the medical personnel themselves were polite (Assurance), the high volume of patients forces consultations to be brief, creating a perception of "rushed" service and "inaccurate" or not thoroughly examined from the patient perspective. This also supports the argument stated in Alodhialah et al.'s study,²⁸ patients with higher education levels demand more effective communication and deeper medical explanations than time often permits.

Conclusion

Based on the study findings, it can be concluded that the majority of T2DM patients at Puskesmas Lempake are overall satisfied with the services provided. However, gap analysis remain in negative value revealed that patients experience haven't met their ideal expectations across all five SERVQUAL dimensions. The widest gaps were found in the Tangibles and Reliability dimensions, mentioning about the physical facilities' condition and the patient's perception regarding the service accuracy provided. Meanwhile, the Assurance and Empathy dimensions reported have the smallest gaps, highlighting strong interpersonal interactions based on trust and fair, also non-discriminatory treatment by medical personnel as the facility's primary strength.

To further enhance the patients' experience, it is suggested that Puskesmas Lempake reevaluate the physical infrastructure and reconsider especially T2DM patients' handling. While interpersonal interaction is already good, optimizing management for patients with chronic diseases can further narrow the SERVQUAL gaps. Regarding future research, it is recommended to collect a larger sample size combined with probability sampling techniques to reduce potential selection bias and increase the generalizability of the data. Additionally, subsequent study can also explore the correlation between specific SERVQUAL dimensions with clinical outcomes, such as glycemic control and medication adherence, to better understand the impact of satisfaction level on chronic disease management.

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