

PATIENT SATISFACTION AND ITS ASSOCIATION WITH SERVICE QUALITY PERCEPTION IN DIABETES CARE AT KARTASURA COMMUNITY HEALTH CENTER

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Abstract

Enhancing primary health care quality is crucial, particularly when it comes to managing chronic conditions like diabetes mellitus (DM). The purpose of this study is to investigate how patients with diabetes mellitus at the Kartasura Health Center perceive the quality of their services and how satisfied they are with such services. With a cross-sectional design and a quantitative methodology, this study included 50 Prolanis DM subjects chosen by total sampling. The research instrument refers to the five dimensions of SERVQUAL and KKP-2017, which have been tested for validity and reliability. Data were analyzed univariate and bivariate using chi-square tests. The results show that most patients had a good perception of the quality of service, as well as a high level of satisfaction (90%). All aspects of service quality, including tangibles, assurance, responsiveness, empathy, and reliability, were found to be significantly correlated with patient satisfaction ($p < 0.05$). These findings suggest that the better the perception of service quality, the higher the patient satisfaction. In conclusion, the optimal dimension of service quality, both from physical and interpersonal aspects, plays an important role in increasing DM patient satisfaction. Therefore, improving the quality of patient experience-based services needs to be a strategic focus in primary health services.

Keywords : Quality of service, Patient satisfaction, Diabetes Mellitus, SERVQUAL

Introduction

Health services are one of the important aspects of national development that aims to improve the degree of public health. The Indonesian government provides health services in three levels, namely primary health services by health centers, secondary services by hospitals with specialist services, and tertiary services by hospitals with subspecialist facilities (Ulumiyah, 2018). Health Center as the front line of health services has the responsibility to provide preventive, promotive, curative, and rehabilitative services to achieve optimal public health in their work areas (Lutfiana *et al.*, 2023). In carrying out their functions, health centers are not only required to provide adequate facilities and health personnel, but also to ensure the quality of services that are able to meet the expectations and needs of patients (Fransiska & Bernarto, 2021). One of the chronic diseases that is of major concern in the primary health care system is Diabetes Mellitus (DM), considering the increasing number of cases and requiring long-term monitoring. Medical service providers need to continue to raise the standard of services to meet the needs of patients and build trust in health centers. In this context, the interaction between healthcare workers and patients, known as medical service meetings, is an important element in determining the quality of services received by patients (Shie *et al.*, 2022). Good quality of service not only reflects the technical competence of health workers, but

also involves interpersonal aspects such as friendliness, empathy, speed of service, as well as assurance and comfort in the interaction between patients and service providers (Vujanic *et al.*, 2020).

Patient satisfaction can be instantly improved by providing high-quality services. Parasuraman's SERVQUAL theory states that there are five main components that make up the quality of service, including tangible things, guarantees, responsiveness, empathy, and reliability. Each of these factors affects the way patients (Dewi *et al.*, 2023). Patient satisfaction is a comparison between their expectations and the actual service received. When the service meets or surpasses those expectations, patients are likely to feel satisfied. On the other hand, if the service does not meet expectations, the patient is more likely to feel dissatisfaction (Maulidiah *et al.*, 2023). Several previous studies have shown that aspects of service quality are closely related to patient satisfaction. A study conducted by Lisna (2022) at the Lapai Health Center, North Kolaka showed that only 33.3% of patients were satisfied with specific aspects and 0.9% were satisfied with the empathy aspect of health professionals. Meanwhile, Baan (2020) found that service dimensions were mostly related to patient satisfaction. According to a research conducted at Bajagia Hospital by Baan (2020), the insurance component had the greatest influence on patient satisfaction (Baan, 2020). Other studies also show a positive relationship between providing quality services to people with diabetes and more optimal health outcomes. A comprehensive understanding of the quality of services received by people with diabetes is essential to help manage the disease effectively at the community level. Service Quality Assessment is a very important first step in improving the quality of services for people with chronic diseases. Service quality assessment can be done through various approaches. One of them consists of two main aspects: examining technical quality and service quality. Technical quality refers to the suitability of the services provided with established guidelines, while service quality emphasizes more on patients' perceptions of the overall quality of service (Iezadi *et al.*, 2024).

The prevalence of Diabetes Mellitus continues to show an increasing trend. According to the International Diabetes Federation (2022), there are more than 537 million people with DM in the world, and DM disease is expected to increase to 643 million by 2030. Indonesia ranks fifth in the world with the number of sufferers reaching 19.5 million people in 2022. Diabetes mellitus is a chronic condition that needs ongoing care, both from medical, behavioral, and sustainable health services (IDF, 2022). Although many studies have been conducted on the quality of service and patient satisfaction, most of them focus on hospitals or do not specifically target patients with chronic diseases such as DM in health centers. Related research conducted at the health center level generally has not explicitly compared the perception of service quality with the satisfaction level of DM patients as a vulnerable group that requires repeated interaction with health facilities. Thus, There is a gap in the literature on the importance of the perception of the quality of DM patient services at the primary service level, especially at the Kartasura Health Center which experienced a surge in DM cases from 306 cases in 2022 to 2,154 cases in 2023. The Kartasura Health Center also runs a Chronic Disease Management Program (Prolanis) aimed at DM patients participating in the National Health Insurance (JKN). One form of Prolanis service is routine laboratory examinations every month. The level of patient compliance in participating in this program reaches 85%, showing trust and satisfaction with the services provided (Dinkes Kesehatan Kabupaten Sukoharjo, 2024).

Considering the aforementioned background and research gaps, This study aims to examine the relationship among quality and perceived service satisfaction of Diabetes Mellitus patients at the Kartasura Health Center. The results of this study are expected to provide empirical evidence as a basis for improving the quality of health services and become a reference for policy-making in the management of chronic diseases in primary health facilities.

Method

In this study, the approach used is quantitative with a cross-sectional design was used to analyze the relationship of the perception of service quality and satisfaction of diabetes mellitus patients at the Kartasura Health Center. This research will be conducted in March 2025. The population in this study is all Prolanis participants with Diabetes Mellitus recorded at the Kartasura Health Center as 150 people. The sampling population of this study was DM patients who participated in routine examinations for three consecutive months with a total of 54 respondents. The sample size is calculated using the Lameshow formula with the following formula:

$$n = \frac{\left(Z^2 1 - \frac{\alpha}{2}\right) P(1-P)N}{d^2(N-1) + \left(Z^2 1 - \frac{\alpha}{2}\right) P(1-P)}$$

Information :

n = Minimum number of samples required

N = Number of population

$Z^2 1 - \frac{\alpha}{2}$ = Confidence level (CI 95%) = 1.96

P = Proportion for Diabetes Mellitus → 10.7% (Riskesdas Central Java, 2022)

d = Degree of deviation in the population (5%) = 0.05

Account:

$$n = \frac{(1,96)^2 \cdot 0,107 (1-0,107) 50}{(0,05)^2 (50-1) + (1,96)^2 0,107 (1-0,107)}$$

$$n = \frac{18,353}{0,4895}$$

$$n = 37,49 \Rightarrow \text{can be rounded to } 38$$

The sampling technique using *Total Sampling* amounted to 54 people but a total of 4 people were not sampled because DM patients conducted examinations at the Kartasura Health Center public polyclinic. The source data in this study comes from primary data obtained through the distribution of questionnaires

This study involves two variables, namely the perception of service quality as an independent variable and patient satisfaction as a dependent variable. The instrument used to measure the perception of service quality consists of five dimensions of SERVQUAL whose reliability test was carried out by the researcher with a Cronbach's Alpha value of 0.905. The patient satisfaction questionnaire was measured using a modification of the Patient Satisfaction Questionnaire-18 (PSQ-18) which was developed into KKP-2017 which has been tested for reliability by Imaninda & Azwar with a Cronbach's Alpha value of 0.883. Thus, this research instruments can be used validly and reliably (Imaninda & Azwar, 2018).

The data collection technique was carried out using a questionnaire directly to the respondents. The data obtained were analyzed univariate and bivariate. For bivariate analysis, use a chi-square test with a significance level of 95% ($\alpha = 0.05$). This research has received ethical approval from the Health Research Ethics Committee of the Faculty of Health Sciences, University of Muhammadiyah Surakarta with Number: 818/KEPK-FIK/I/2025.

Result

3.1 Univariate Analysis

The results of the research analysis at the Kartasura Health Center in March 2025 are as follows:

Table 1 Frequency Distribution Based on Respondent Characteristics

Respondent Characteristics	Frequency (n)	Percentage (%)
Age		
45-59	19	38,0
60-76	31	62,0
Median \pm SD	61,00 \pm 7,056	
Min-Max	48 \pm 76	
Gender		
Woman	39	78,0
Man	11	22,0
Work		
Laborer	6	12,0
IRT	22	44,0
Merchant	6	12,0
Pensioner	7	14,0
Private	2	4,0
Self employed	7	14,0

Source : Primary Data, 2025

Based on the analysis result in Table 1 information was obtained that out of 50 respondents, the gender of the respondents in this survey was women as many as 39 people (78%), while men amounted to 11 people (22%). This shows that the majority of the gender is occupied by female respondents. In terms of age, most respondents were in the age range of 60-76 years as many as 31 people (62%), while the rest were aged 48-59 years old as many as 19 people (38%). In terms of employment, the majority of respondents were housewives (IRT) as many as 22 people (44%), followed by workers and traders as many as 6 people each (12%), retirees and self-employed as many as 7 people each (14%), and private workers as many as 2 people (4%). This data shows that most of the respondents are elderly women with jobs that are not tied to the formal sector.

Table 2. Respondent Distribution According to Research Variables

Variabel	Frequency (n)	Presentase (%)
Direct evidence (<i>Tangibles</i>)		
Less good	8	16,00
Good	42	84,00
Reliability		
Less good	6	12,0
Good	44	88,0
Responsiveness		
Less good	7	14,0
Good	43	86,0
Guarantee (<i>Assurance</i>)		
Less good	4	8,0
Good	46	92,0
Caring Attitude (<i>Emphaty</i>)		
Less good	4	8,0
Good	46	92,0
Patient Satisfaction		
Dissatisfied	5	10,0
Satisfied	45	90,0

Source : Primary Data, 2025

Based on the results of the analysis in Table 2, most respondents have a good perception of the five dimensions of service quality at the Kartasura Health Center. In the tangible dimension of direct evidence, as many as 42 respondents (84%) rated the service in the good category, while 8 respondents (16%) rated it as poor. In the reliability dimension, as many as 44 respondents (88%) gave a good rating, while 6 respondents (12%) rated it poorly. For the responsiveness dimension, there were 43 respondents (86%) who rated the service good, and 7 respondents (14%) rated it as not good. Furthermore, in the assurance dimension, as many as 46 respondents (92%) rated it good and only 4 respondents (8%) rated it poorly. This reflects the trust and sense of security given by health workers to patients. Similarly, in the dimension of empathy, 46 respondents (92%) rated the service good and 4 respondents (8%) rated it as poor. Meanwhile, the level of patient satisfaction is also relatively high. As many as 45 respondents (90%) stated that they were satisfied with the services provided, while 5 respondents (10%) stated that they were dissatisfied. These results indicate that the perception of good service quality has a significant relationship with the level of satisfaction of Diabetes Mellitus patients at the Kartasura Health Center.

3.2 Bivariate Analysis

Table 3. The Relationship among Service Quality Perception and Patient Satisfaction

Perception of Service Quality	Patient Satisfaction						<i>p-value</i>
	Dissatisfied		satisfied		Total		
	n	%	n	%	n	%	
Direct evidence (<i>Tangibles</i>)							
Kurang Baik	4	50	4	50	8	100	0,001
Baik	1	2,4	41	97,6	42	100	
<i>Reliability</i>							
Not Good	3	50	3	50	6	100	0,009
Good	2	4,5	42	95,5	44	100	
<i>Responsiveness</i>							
Not Good	4	57,1	3	42,9	7	100	0,001
Good	1	2,3	42	97,7	43	100	
<i>Guarantee (Assurance)</i>							
Not Good	3	75	1	25	4	100	0,002
Good	2	4,3	44	95,7	46	100	
<i>Caring attitude (Emphaty)</i>							
Not Good	3	75	1	25	4	100	0,002
Good	2	4,3	44	95,7	46	100	

Source : Primary Data, 2025

Based on the analysis results in Table 3, there is a significant relationship between perceptions of service quality and patient satisfaction at the Kartasura Health Center. The dimensions of service quality analyzed include tangible, reliability, responsiveness, assurance, and empathy, each of which shows a p value <0.05 , indicating a significant relationship with patient satisfaction. In the tangible evidence dimension, patients who rated the service as good felt satisfied (97.6%). In the reliability dimension, the majority of patients who rated the service as good were satisfied (95.5%). In the responsiveness dimension, most patients who rated the service as good felt satisfied (97.7%). Regarding assurance, (95.7%) of patients who evaluated the service as good indicated satisfaction. Likewise, in the empathy dimension, (95.7%) of patients who gave a positive rating to the service were also satisfied.

Discussion

The Relationship of Direct Evidence (*tangibles*) with Satisfaction of Diabetes Mellitus Patients at the Kartasura Health Center

The aspects of tangible evidence in health services encompass multiple elements that can be physically observed, including the state of healthcare facilities, the cleanliness of the environment, the comfort level of waiting areas, and the tidiness and professionalism displayed by both medical and non-medical staff (Savira & Subadi, 2023). The results demonstrated a notable link between the quality of physical evidence and the satisfaction levels of patients with Diabetes Mellitus, as shown by a p-value of 0.001, which is lower than the established significance level ($\alpha = 0.05$). This research indicates that the better the quality of the facilities available, the higher the level of patient satisfaction. This is because most of the patients with diabetes mellitus still feel that the *tangible* owned by the health center is good according to the patient's referral such as a neat and clean puskesmas waiting room, officers who have clean and complete medical equipment, a clean and tidy appearance of officers and the condition of the puskesmas building in good condition. The health center building is in good condition and is still suitable for use. As stated in a study conducted by Alim et al. (2019), good *tangible* is very important to be given by health workers because what is seen and felt directly by patients will change the patient's perception of health workers (Tangdilambi et al., 2019).

These findings are in line with the results of research conducted by Lisna et al. (2022) at the Lapai Health Center, North Kolaka Regency, which showed that only 33.3% of patients were satisfied with the physical evidence aspect in health services (Lisna et al., 2022). In addition, research conducted by Kabbani and Santoso (2023) at Nahdlatul Ulama Hospital Jombang also strengthens these findings, where adequate facilities and good service quality have been shown to be significantly related to increased patient satisfaction levels in health facilities (Kabbani & S, 2023). Health service facilities are one of the fundamental elements in an effort to improve comfort, ease of access, and the effectiveness of services for patients. The existence of adequate facilities and infrastructure not only functions as an operational support for medical personnel, but also plays a role in building a positive perception of patients towards the services provided. This means that when patients perceive the cleanliness of the waiting area, physical facilities and appearance of the healthcare workers providing services as good, their perception of the healthcare providers will also be positive (Rianti et al., 2022).

The Relationship of Reliability with Diabetes Mellitus Patients Satisfaction at Kartasura Health Center

Reliability in health services includes several important aspects, such as the accuracy of doctors in determining diagnoses, the clarity of medical information conveyed to patients, and consistency in running service schedules. The quality of care that patients feel is based on trust in service providers and healthcare facilities to provide high-quality services related to established standard practices (Ginting et al., 2024). The results of this study showed that reliability was significantly related to the satisfaction level of patients with diabetes mellitus, as evidenced by a p value (0.009) lower than a significant level ($\alpha=0.05$). The research lends strong support to the belief that enhanced health care dependability relates to greater patient satisfaction. Findings of the present study are consistent with the research outputs stated by Fransiska and Bernarto (2021) which found that reliability in health services such as precision of doctors in prescribing drugs and true diagnosis also contributes significantly to patient satisfaction ((Fransiska & Bernarto, 2021). In fact, research reported by Rahmawati et al. (2023) revealed that the clinical professionalism of health workers in providing accurate, precise, and timely health services can encourage the level of trust and satisfaction of patients who visit health services at the primary level (Rahmawati et al., 2023). It is imperative to do everything we can to ensure the dependability of health services so that patients are offered best

services. The reliability is not only indicative of the capacity of the medical staff to deliver care, but it is also important to the cultivation of a coping relationship between the patient and the healthcare provider (Younquoui et al., 2023).

The Relationship of Responsiveness with Diabetes Mellitus Patient Satisfaction at the Kartasura Health Center

Responsiveness refers to the ability of medical staff and managers to meet patient needs, including short waiting times and prompt handling of complaints (Prasetyo *et al.*, 2024). The results of the research show that there is a significant relationship between responsiveness and satisfaction of diabetes mellitus patients, with a value ($p\text{-value} = 0.001 < (\alpha = 0.05)$), which means that the better the responsiveness provided, the more satisfied the level of satisfaction of diabetes mellitus patients will be. Responsiveness reflects the willingness and speed of health care workers to respond to patient needs, complaints, and expectations. Diabetes mellitus (DM) patients would also perceive themselves to be important as their trained nurses attend to their needs in a timely fashion in that they are being handled with care. This all leads to maintaining higher satisfaction rates of the health services delivered to them. This result is consistent with the research conducted by Anwary in 2020 in the Health Center Durian Gantang, Hulu Sungai Tengah District which demonstrates that there is a significant relationship between the service quality dimension, including responsiveness, in which patient satisfaction with a probability of the value of 0.000. Although this study did not directly focus on patients with diabetes mellitus (DM), the results still have an important role in the quality of services and the context of health services in health centers (Anwary, 2020). These findings highlight the significance of patient concerns and needs to health care providers and staff. This is important because it affects global satisfaction and perceived quality of care. This is because patients that feel that their healthcare providers are responsible for them, they trust and adhere to the medical suggestions provided. All these in return will enhance a favorable symbiotic relation that prevails between them both other (Ariwidyastuti *et al.*, 2018). Hence, healthcare organizations desiring to enhance patient satisfaction should invest their resources and focus on enhancing how well patient needs are met.

The Relationship of Assurance with Satisfaction of Diabetes Mellitus Patients at Kartasura Health Center

The dimension of certainty in health services reflects the ability of medical personnel, polite attitudes, and the ability to maintain a sense of security and trust of patients (Hosseinzadeh *et al.*, 2024). This aspect is especially important for patients with chronic diseases such as diabetes mellitus who require regular visits and checkups. The results showed a significant relationship between the responsiveness of health workers and the satisfaction of diabetic patients, with a value of ($p\text{-value} = 0.002 < (\alpha = 0.05)$). Most patients who rated the service guarantee aspect as "good" were satisfied with the service provided. These findings show that health workers at the Kartasura Health Center are considered able to provide a sense of security, friendly service, and informative and convincing communication. This is in line with Baan's (2020) research which shows that the guarantee dimension is the most influential factor on inpatient satisfaction at Bahagia Makassar Hospital. (Baan, 2020). Similar research was also conducted by Puspitasari et al. (2021), who emphasized that the assurance aspect plays a major role in shaping patients' positive perceptions of services, especially for patients suffering from chronic diseases (Rasnidiati, 2020). When patients feel safe and trust in the ability of the staff, their level of satisfaction with the service will also increase (Mohamed & Azizan, 2015).

The Relationship of Empathy with Satisfaction of Diabetes Mellitus Patient at Kartasura Health Center

Empathy in healthcare refers to the ability of healthcare professionals to sense the emotional needs of patients and provide care tailored to their individual conditions. With empathy, a more human relationship is established between health workers and patients. This in turn becomes an important factor in creating a positive service experience (Guidi & Traversa, 2021). In this study, the empathy dimension also showed a significant relationship with patient satisfaction with a value of ($p\text{-value} = 0.002$) $< (\alpha = 0.05)$, which means that the better the empathy provided by health workers, the higher the patient satisfaction felt. Patients will feel satisfied if healthcare workers not only perform medical procedures, but also listen, understand, and pay personal attention to their natural condition. This is in line with the findings of research conducted by Vujanic et al. (2020), which emphasizes that the caring and empathetic attitude of healthcare workers has a significant relationship in improving patients' perception of the quality of interaction, especially in the context of primary care (Vujanic *et al.*, 2020). Similar findings were also found by Sari et al. (2023), which showed that the empathy dimension had a high relationship with the satisfaction of elderly patients at the health center. Empathy is increasingly important in the care of diabetes mellitus (DM) patients, considering that this disease not only affects physical conditions, but also has an impact on psychological and social aspects. Consistent and empathetic strategies can encourage patients to be more open in improving compliance, reporting complaints, and strengthening the relationship between healthcare workers and patients (Sari *et al.*, 2023).

Conclusion

Based on the analysis carried out on the five dimensions of service quality, namely tangible, responsiveness, reliability, assurance and empathy, it was found that all of them have a significant relationship with the satisfaction of diabetic patients at the Kartasura Health Center. This means that good service, both in terms of facilities and the attitude of the officers, has a great effect on patient satisfaction. Physical evidence such as room cleanliness, comfort of place, and the appearance of health workers turned out to be very important because they were immediately felt by the patient. Clean and tidy facilities and professional-looking staff make patients feel more confident and comfortable. In addition, things like the staff who are quick to respond, clear information, and the friendly and caring attitude of the staff also make patients feel satisfied. This shows that the quality of service is not only seen from the expertise of medical personnel, but also from how patients are treated and feel the service as a whole. Therefore, patient satisfaction can be used as an important indicator in improving the quality of health services, especially for chronic disease patients who require repeated interaction with health facilities. As an implication, the health center is advised to continue to maintain and improve the quality of services from various dimensions, especially the physical aspects and interpersonal attitudes of officers, in order to strengthen trust and encourage patient compliance in handling chronic diseases such as diabetes mellitus.

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