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EVALUATION OF SERVICE QUALITY ON PATIENT SATISFACTION AT THE HIALU COMMUNITY HEALTH CENTER IN NORTH KONAWE REGENCY USING AN INTEGRATION OF THE SERVQUAL AND QUALITY FUNCTION DEPLOYMENT (QFD) MODELS

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ABSTRACT
On the front lines of primary health care in Indonesia, especially in rural areas and geographical conditions that pose challenges (North Konawe). Growing public expectations require the ongoing monitoring of service quality to provide assurance that patients are satisfied with their care. This study aims to evaluate service quality and determine priority improvement strategies in inpatient health centers using an integrated SERVQUAL and Quality Function Deployment (QFD) approach. This study used a quantitative descriptive-analytical design conducted at the Hialu Inpatient Health Center, North Konawe Regency. The data was collected using a SERVQUAL-based structured questionnaire that assessed the patients' expectations and perceptions about five service quality dimensions: tangible, reliability, responsiveness, assurance, and empathy. The questionnaire included 24 statements items value evaluated by the five-step Likert scale. The research participants were outpatients and inpatients, patients or their guardians who received services based on purposive sampling techniques. There were 97 respondents in the sample. The SERVQUAL method was used to analyze the data, which calculated the difference between patients' perception and expectations. Subsequently, the attributes with negative gap values were considered as voice of customer that was to be arranged in a QFD analysis, whereby HOQ would exhibit the priorities for improvement of service quality. Eight service indicators possessed negative gap values in the dimensions of tangibles, reliability, responsiveness and assurance. There was no negative gap to the empathy dimension, suggesting that we met patient expectations around empathy. Based on a QFD analysis, the facility's structure enhancements, staff responsiveness improvement and service procedures optimization were found the key technical priorities. SERVQUAL and QFD together provide an effective tool in identifying service quality gaps as well as prioritizing improvements at the Inpatient Community Health Center. These technical priorities are expected to enhance services provision and patients satisfaction.

Keywords: inpatient community health center; patient satisfaction; QFD; service quality; SERVQUAL

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INTRODUCTION

Especially in rural areas where access to hospitals is relatively limited, Community Health Centers (Puskesmas) has a strategic role in the health system of Indonesia whose foundation lies on primary health care. Community health centers are the first level of referral in the community that sends patients to higher level health facilities. Research conducted by Hartina (2025) stated that the quality of service and image of Puskesmas have a significant effect on patient satisfaction mediated by patient trust (Hartina et al., 2025). Hialu Puskesmas is situated in one of the topographically difficult areas on North Konawe Regency Southeast Sulawesi. Distance limitations and access constraints to hospitals make this facility the closest accessible option for inpatient health services for the community. This condition requires service that is expected by patients, both medical and non medical.

The SERVQUAL is a model used to measure service quality, which assesses the discrepancy between patient expectations and perceptions in five premises: tangibles, reliability, responsiveness, assurance, and empathy (Parasuraman et al., 1988 skt again from (Rafidah et al., 2024) But the analysis of SERVQUAL on its own is not enough to develop actionable improvement methods. Therefore, Quality Function Deployment (QFD) is applied to translate patient needs into technical responses that can be systematically implemented by healthcare management (Rafidah et al., 2024) This study aims to evaluate service quality and formulate priority improvement strategies at the Inpatient Health Center using an integrated SERVQUAL and QFD approach.

METHOD

This study used a quantitative descriptive-analytical design conducted at the Hialu Inpatient Health Center, North Konawe Regency. The population consisted of all patients who received services during the study period. A total of 97 respondents were selected using purposive sampling based on inclusion criteria determined using the Slovin formula. The data collection was achieved by means of a questionnaire composed of 24 statements rated on a five point Likert scale that measured the dimensions tangibles, reliability, responsiveness, assurance and empathy of patient expectations and perceptions. Gap score was calculated as the difference between perception score and expectation score. Service attributes with negative gap values were identified as Voice of Customer (VoC) and further analyzed using Quality Function Deployment (QFD) through the House of Quality (HOQ) matrix to determine priority technical responses (Rafidah et al., 2024)

RESULT

Respondent characteristics

Seventy percent of respondents were female and the most common age group was 28 to 38 decades. Respondents were mainly private sector employees and unemployed people Based on employment status, respondents primarily consisted of or who reflected the socioeconomic profile of the service area.

Table 1.
Respondent characteristics (n = 97)

Respondent characteristics	f	%
Gender		
Male	29	30
Woman	68	70
Age		
17-27 years	20	21
28-38 years old	28	29
39-49 years old	24	25
50-60 years old	20	21
> 61 years old	5	5
Work		
Civil Servant	13	13
Private	39	40
Not working	45	46

Servqual Analysis

The SERVQUAL analysis shows that eight service indicators have negative gap values, indicating that service performance does not fully meet patient expectations. These negative gaps are mainly found in the dimensions of physical appearance, reliability, responsiveness, and assurance. The empathy dimension does not show a negative gap value, indicating that patients consider staff empathy to meet or even exceed their expectations.

Table 2.
Gap Values

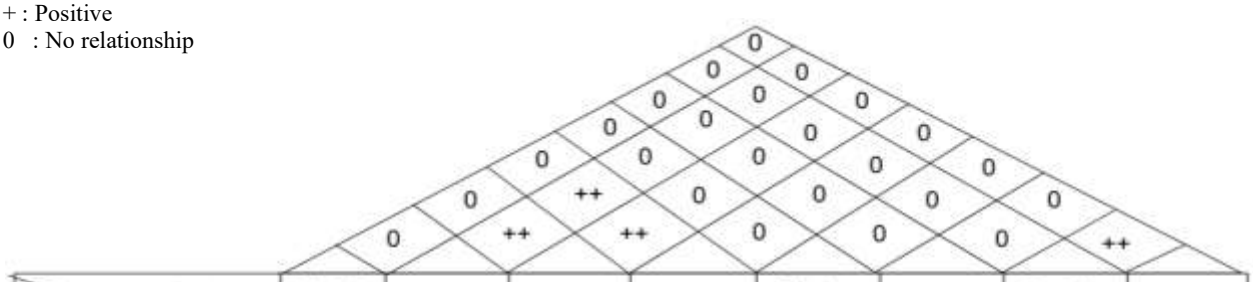
INDICATOR	Code	Question Attribute	Average Expectation	Performance Average	GAP
TANGIBLE	TA1	Medical/non-medical staff are neatly dressed.	4.38	3.85	-0.53
	TA2	The patient waiting room at the health center is adequate, clean, and comfortable	4.39	4	-0.39
	TA3	Availability of information boards indicating the direction and location of facilities at the health center	4.06	3.9	-0.07
	TA4	Availability of clean toilets in sufficient numbers for patients	4.19	3.8	-0.39
	TA5	The number of treatment rooms is sufficient, clean, and comfortable	4.4	3.9	-0.5
RELIABILITY	REL6	Health center opening and closing hours are on time	4.11	3.93	-0.18
	REL7	Fast and accurate examination and treatment services.	4.14	4.19	0.05
	REL8	Healthcare workers listen carefully to patients' complaints	3.98	3.99	0.01
	REL9	Patient waiting time for outpatient services is less than 60 minutes	3.87	4.29	0.42
RESPONSIVENESS	RES10	Patient registration is handled quickly and accurately	4.03	4.08	0.05
	RES11	Health center staff inform you about when services will be provided	4.18	4.21	0.03
	RES12	The ability of doctors, nurses, and midwives to respond quickly to patient complaints.	4.07	4.14	0.07
	RES13	Community health center pharmacy staff provide clear explanations about	4.18	4.11	-0.07

Quality Function Deployment (QFD)

Attributes with negative gap values are translated into the House of Quality matrix. QFD analysis identifies several priority technical responses, including improving inpatient facilities, increasing staff responsiveness through training, optimizing service flows and procedures, and strengthening service assurance mechanisms.

The following are the results of the House of Quality (HOQ) analysis in Figure 1:

Explanation:
9 : Strong relationship
3: Moderate relationship
0: No relationship
++: Very strong
+ : Positive
0 : No relationship



Technical Response / VoC	Standardization of staff appearance	Renovation and arrangement of waiting room	Improvement of sanitation facilities	Expansion of inpatient rooms	Enforcing a punctuality of service hours	Adding service information signs	Strengthening med equipment and logistic system	Edukasi obat kepada pasien
Appearance of health workers	9	0	0	0	0	0	0	0
Comfort and cleanliness of waiting room	0	9	0	0	0	0	0	0
Availability of service information signs	0	0	0	0	0	9	0	0
Availability and adequacy of toilets	0	0	9	0	0	0	0	0
Sufficient and comfortable inpatient rooms	0	0	0	9	0	0	0	0
Punctuality of health center working hours	0	0	0	0	9	0	0	0
Explanation of medication doses and rules	0	0	0	0	0	0	0	9
Availability of medication and medical equipment	0	0	0	0	0	0	9	0
TARGET	All health staff follow proper and standard appearance	The waiting room has adequate capacity and is comfortable, clean, and orderly	Toilets available in clean, functioning, and well-maintained of minimes at all times	Inpatient room capacity meets needs reduce room overcrowding.	Health center service hours are enforced per the regular di operational schedul	Service information sign placed strategicaly and are easy for patients to understand.	Patients consistently receive accurate and clear medication information from pharmacists	Pasien menerima informasi penggunaan obat secara jelas dan konsisten dari petugas farmasi.
Technical Priority	9	9	9	9	9	9	9	9

Figure 1. House of Quality (HOQ) analysis

DISCUSSION

As reflected by negative gap values in some dimensions of the SERVQUAL indicates that patient expectations have not yet been fully met by the quality of service at the Inpatient Health Center. Patients expect aspects of visual professionalism within healthcare, like neat uniforms and personal hygiene, to not yet be met. Notable for instance tangible elements such as appearance of staff can illustrate this as patients tend to still gauge these elements in other professionals. This condition indicates that the appearance of staff has not optimally provided comfort and confidence to patients during the service process. This is in line with research conducted by (Suhendri, et al., 2025), which states that the analysis of physical/tangible evidence of medical personnel and employees who are neat and clean is related to patient satisfaction. Physical facilities and equipment emerged as the most critical issue, with waiting room attributes having a negative gap indicating that the cleanliness, comfort, and capacity of the waiting room still do not fully meet patient expectations. This condition shows that the waiting room is not yet optimal in supporting patient comfort while waiting for service. This is in line with research conducted by (Sugondo et al., 2021), which states that the design and comfort of waiting rooms directly contribute to the perception of service quality

and patient trust in health institutions. Indicators. Information boards regarding the direction and location of room facilities obtained a relatively small negative gap, but this indicates that the available visual information system does not fully meet patient expectations. The unavailability of clean toilets indicates that sanitation facilities at the health center do not fully meet service users' expectations. Meanwhile, the indicator of sufficient, clean, and comfortable treatment rooms has the largest negative gap value in the Tangible dimension. This indicates that the capacity and condition of the treatment rooms are not yet able to optimally accommodate the needs and expectations of patients. Limited room space or uncomfortable room conditions can lead to increased crowding, decreased privacy, and reduced patient comfort during the service process. The adequacy and comfort of treatment rooms are dominant factors that influence patient satisfaction in primary health facilities. The North Konawe inpatient health center still faces a number of limitations, as reflected in the negative gap values in the aspects of sanitation, adequacy and comfort of service rooms, and visual information systems. Such a condition points to the necessity for focused improvements in facility upgrades such as enhanced information in visual format (Bilatula et al., 2024), cleanliness of the facilities, and service room layout.

The other priorities were responsiveness and reliability which again unraveled patients' need for expeditious and dependable services. Positive gap values indicate that service processes, such as accuracy of actions, speed of service, staff ability to listen to patient complaints , and management of waiting times, have met public expectations. However, the service time accuracy indicator shows a negative gap, indicating inconsistency in adherence to the promised service schedule. The perceived inaccuracy of time by patients reflects a gap in the fulfillment of service reliability aspects. In public service standards, schedule consistency is one of the main elements of the reliability dimension, as it is directly related to public trust in service providers (Heni Anggit et al., 2022). The positive gap responsiveness of healthcare personnel indicates that most service indicators have relatively met patient expectations, but there are still indicators that show a negative gap, so efforts are needed to improve service consistency in order to achieve excellent service standards. According to other study related with SERVQUAL and QFD model, the importance of responsiveness as crucial factor for perceived service quality which generate patients trust (Rafidah et al., 2024).

It is important to know that no negative gap value was found for the empathy dimension, which indicates that patients felt satisfied with interpersonal contact and individual attention by healthcare employees. Their results suggest that overall, the attention and care delivered by healthcare professionals has been appropriate when not even better than what patients require, which is consistent with the theoretical framework of patient centered care. This is in line with research showing that empathetic responses showed lesser dissatisfaction level among healthcare workers for resource constraints at a structural level (Dewi et al., 2023).

On the other hand, combining SERVQUAL with QFD creates a structured approach to convert patient needs into process improvement actions. By focusing on proceeding upon the technical priorities which have been taken from QFD then healthcare managers could move towards performing intervention regarding service quality effectively and sustainably (Farid et al., 2021; Rafidah et al., 2024).

CONCLUSION

An evaluation of service quality at the Konawe Utara Inpatient Health Center revealed that eight service indicators had negative gap values, particularly in the dimensions of physical appearance, reliability, responsiveness, and assurance, while the dimension of empathy met patient expectations. The integration of SERVQUAL and QFD successfully identified priority technical improvement strategies. The implementation of these strategies is expected to improve service quality and patient satisfaction at the North Konawe Inpatient Health Center.

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