



Research Article

Improving Inpatient Services with the Quality Function Deployment Method

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ABSTRACT

Improvements in the quality of inpatient care are essential to reduce overcrowding, increase patient engagement, make care more efficient, and empower patients toward self-care. These improvements can result in better clinical outcomes, higher patient satisfaction, and more efficient healthcare delivery. This is a quantitative study involving 98 respondents who have used inpatient services at the Royal Prima Hospital between December 2022 and January 2023. Data collection was based on the Servqual method and Kano models. The analysis results show that the smallest gap score (-0.12) is attributed to the number of medical personnel in the reliability dimension, whereas the largest gap score (0.09) is attributed to the physical appearance of doctors and staff in the tangibles dimension. Of the 23 attributes analyzed, 3 belonged to category A (attractive), 15 belonged to category O (one-dimensional), and 5 belonged to category M (must-be). The priority technical responses to improve service quality include hospital infrastructure development, enhanced inter-institutional cooperation, and the implementation of education and training programmes.

Keywords: Service quality, inpatient care, Quality Function Deployment Method

INTRODUCTION

Indonesia, like many other countries, faces the challenge of unequal access to healthcare services, which disproportionately benefits certain segments of the population (Indonesian Academy of Sciences & National Research Council, 2013). As the demand for high-quality healthcare services continues to grow, hospitals are confronted with a multifaceted challenge: enhancing service performance to generate superior quality and efficiency while simultaneously maintaining cost-effectiveness (Dachyar et al., 2018; Lim et al., 2018). Patients increasingly seek healthcare providers that can deliver high-quality services tailored to their needs, with service quality assurance remaining a critical determinant of patient satisfaction (Ferreira et al., 2023; Zarei et al., 2014). Inpatient care is one of the core services offered by hospitals. Hospitalisation has evolved from a place-based provision of medical care to a comprehensive service encompassing

invasive procedures, continuous monitoring, and diagnostic imaging, aimed at addressing critical conditions accurately and in a timely manner (Owens et al., 2019). Patients expect satisfactory services, including the care provided by doctors, nurses, and other staff, as well as a comfortable treatment environment, adequate facilities, and appropriate meal provision. Healthcare providers hold the responsibility of ensuring patient satisfaction, particularly among inpatients. (Makarem et al., 2016). Therefore, hospitals need to maintain service quality, even improve it in order to be able to meet the expectations of patients as customers and capital to compete with competitors (Leonard & Needham, 2020; Meesala & Paul, 2018).

The quality of service that has been provided can be measured by analyzing the patient's perspective. Patients' perceptions provide information about the standard of service they want, which is formed from their experiences and expectations (You et al., 2013). Therefore, hospitals can compare these perceptions with the quality of service provided. This can be a valuable asset to improve aspects of the service that are considered lacking, as well as provide projections of patient needs for future market segmentation (Lemon & Verhoef, 2016).

One widely recognized method for improving service quality is the Quality Function of Deployment (QFD). This method is used in almost all industries. QFD is a structured method for designing services or products centered on customer needs (Al Memari, 2016). A literature review describes the potential of QFD implementation in healthcare facilities, namely understanding customer needs and wants, identifying opportunities for process improvement, an effective systems thinking approach, and better communication and more transparent processes (Gremyr & Raharjo, 2013).

The competitive hospital market in Medan requires Royal Prima Hospital to deliver high-quality healthcare services to attract and retain patients. However, the initial assessment conducted by the researchers identified several issues related to service quality. Inpatients reported concerns such as suboptimal food menus, prolonged administrative processes, and inadequate preparedness of nursing staff in patient care. Continuous improvement based on patient feedback is therefore essential. This study aimed to analyse the application of Quality Function Deployment (QFD) in enhancing services within the inpatient unit at Royal Prima Hospital.

MATERIAL AND METHODS

This quantitative study involved 98 respondents who had used inpatient services at Royal Prima Hospital between December 2022 and January 2023. Participants were recruited from the hospital's five inpatient service units: 5B (n=33), 6A (n=11), 6B (n=28), 7A (n=14), and 12B (n=12).

The analytical approach applied was Quality Function Deployment (QFD). The first step involved collecting data on the current condition of inpatient services, focusing on patient perceptions and expectations. Data were obtained using a questionnaire adapted from the SERVQUAL model, which encompasses five dimensions: reliability, responsiveness, assurance, tangibles, and empathy. The SERVQUAL results were used to identify service attributes important to patients, which were subsequently categorised using the Kano model. The Kano model classifies attributes into five categories: Must-be (basic attributes whose absence causes dissatisfaction), One-dimensional (attributes that increase satisfaction when present but do not cause dissatisfaction when absent), Attractive (unexpected attributes that delight patients), Indifferent (attributes with no effect on satisfaction), and Reverse (attributes that reduce satisfaction when present)

Attributes identified through the Kano model were incorporated into the House of Quality (HoQ) to translate patient needs into technical service requirements. The HoQ matrix links customer requirements with technical specifications, assigning weights and targets to each. Service attributes from SERVQUAL and the Kano model were combined, and their adjusted importance was calculated using the formula: Satisfaction Score = Gap Score $\times$ Level of Importance. The level of importance was derived from the total expectation score for each attribute. Adjusted importance was obtained by multiplying the satisfaction score by the Kano category value.

Technical response weights were then determined to identify priority areas for improvement. Positive (+) or negative (–) relationships between service attributes and technical responses were identified, with technical responses defined as specific actions undertaken by the hospital to meet patient needs. Data for technical responses were obtained from interviews with the service section manager. Technical response weights were ranked from highest to lowest to guide prioritisation.

Data collection comprised questionnaires and semi-structured interviews. Interviews were conducted with the head nurse and two staff nurses in the inpatient unit to refine technical responses, define development directions, assess correlations between service attributes and technical responses, and evaluate the level of organisational difficulty in implementing process changes. The Level I HoQ was compiled based on these data. Results are presented in both tabular and narrative form.

RESULTS AND DISCUSSION

Service Quality Performance

The SERVQUAL method was used to measure the service attributes of the Royal Prima Hospital inpatient unit. This was done by calculating the gap score between the level of expectations (expectations) and patient perceptions of each attribute. In the tangibles dimension, it can be seen that there are 2 attributes that are below the average value, namely the attributes of the hospital location and hospital environmental conditions. The other three attributes have values above the average. In the empathy dimension, there are two attributes that are below the average value: service time and hospital understanding of patient needs. Other attributes have values above the average. In the assurance dimension, there is one attribute that is below the average value: the availability of various types of services. In the responsiveness dimension, one attribute is below the average value: the readiness of officers to serve visitors. In the reliability dimension, there is one attribute that is below the average value: the number of medical personnel available.

Based on the data obtained, the smallest gap score is -0.12 on the attribute "number of medical personnel" in the reliability dimension. The largest gap score is 0.09 on the attribute "physical appearance of doctors and staff" in the tangibles dimension. The average overall gap score for the 23 attributes was -0.012. These results indicate that overall, inpatient services are still not satisfying for patients. A negative gap score value indicates that the quality of service provided is not in accordance with patient expectations.

Table 1. Gap Score on the Service Dimensions of the Inpatient Unit

No	Dimension	Perception	Expectation	Gap Score	Average
	Tangibles				
1	Hospital location	4.19	4.24	-0.05	-0.002
2	Hospital environmental conditions	4.28	4.35	-0.07	
3	Physical appearance of doctors and staff	4.24	4.15	0.09	

4	Hospital medical facilities & equipment	4.07	4.06	0.01	
5	Supporting facilities	4.28	4.27	0.01	
	Empathy				
6	Friendliness of doctors and staff	3.74	3.74	0.02	
7	Service time	3.93	3.91	-0.08	
8	Hospital service information	3.98	3.98	0	
9	Information & how to utilize services	4.05	4.05	0	-0.005
10	Hospital's understanding of patients' needs	4.17	4.21	-0.04	
11	Affordable price	4.10	4.07	0.03	
12	Explanation of patient's medical condition	3.96	3.95	0.01	
13	Means of submitting complaints and suggestions	4.19	4.17	0.02	
	Assurance				
14	Hospital reputation	4.0	4.01	-0.01	
15	Availability of various types of services	4.1	4.17	-0.07	-0.02
16	Orderliness and safety of the hospital	4.18	4.17	0.01	
17	Attitude of doctors and staff	3.91	3.92	-0.01	
	Responsiveness				
18	Readiness of officers to serve visitors	3.97	4.02	-0.05	
19	Responsiveness to questions and complaints	4.10	4.12	-0.02	-0.04
20	Speed of service time	3.93	3.90	0.03	
	Reliability				
21	Appropriateness of service time	4.06	4.04	0.02	
22	Correct and professional service	4.12	4.14	-0.02	-0.04
23	Number of medical personnel	3.84	3.96	-0.12	

Classification of Service Attributes Using Kano Model

Based on the data analysis, service attributes were classified into three categories according to their influence on patient satisfaction. Three attributes were classified as Category A (Attractive). These attributes play a critical role in determining patient satisfaction: their absence leads to dissatisfaction, while their presence results in a substantial increase in satisfaction.

Table 2. Kano Model calculation result

No	Category
	<i>A (Attractive)</i>
1	Hospital location
3	Physical appearance of doctors and staff
14	Hospital reputation
	<i>M (Must-Be)</i>
4	Hospital medical facilities & equipment
5	Supporting facilities
12	Explanation of patient's medical condition
15	Availability of various types of services
22	Correct and professional service
	<i>O (One-dimensional)</i>
2	Hospital environmental conditions
6	Friendliness of doctors and staff
7	Service time
8	Hospital service information
9	Information & how to utilize services
10	Hospital's understanding of patients' needs
11	Affordable price
13	Means of submitting complaints and suggestions

-
- 16 Orderliness and safety of the hospital
 - 17 The attitudes of doctors and staff in generating patient confidence
 - 18 Readiness of officers to serve visitors
 - 19 Responsiveness to questions and complaints
 - 20 Speed of service time
 - 21 Appropriateness of service time
 - 23 Number of medical personnel
-

Five attributes were classified as Category M (Must-be). These are fundamental requirements; their absence results in patient dissatisfaction, but their fulfilment does not directly increase satisfaction, serving only to maintain a neutral perception. Fifteen attributes were classified as Category O (One-dimensional), which contribute proportionally to patient satisfaction—failure to meet them leads to dissatisfaction, while higher fulfilment yields greater satisfaction.

These three categories play distinct roles in shaping patient satisfaction. Category A attributes should be prioritised, as they exert the greatest impact on satisfaction. Category M attributes must be consistently met as a minimum standard, while Category O attributes should be leveraged to further enhance patient satisfaction levels.

Combined Analysis of Quality Performance and Service Attribute Classification

A negative gap score is a key indicator of system weaknesses, signalling that an attribute falls below the expected standard. Attributes with a negative gap score in Category M (Must-be) have a substantial impact on service quality and should be addressed as a matter of priority. Attributes with a negative gap score in Category O (One-dimensional) exert a lesser impact but still warrant attention to enhance overall patient satisfaction.

Table 3. Framework of Actions and Targets Based on SERVQUAL and Kano Model

Attribute	Kano category	Gap Score	Action	Target
Hospital location	A	(-)	Develop	Patient Satisfaction
Physical appearance of doctors and staff		(+)		
Hospital reputation		(-)		
Hospital medical facilities & equipment	M	(+)	Sustain	Patient Satisfaction P=E
Supporting facilities		(+)		
Explanation of patient's medical condition		(+)		
Availability of various types of services		(-)	Improve	
Correct and professional service		(-)		
Hospital environmental conditions	O	(+)	Maintaining and improving	Patient Satisfaction P>E
Friendliness of doctors and staff		(+)		
Service time		(+)		
Hospital service information		0	Refining and improving	
Information & how to utilize services		0		
Hospital's understanding of patients' needs		(+)	Maintaining and improving	
Affordable price		(+)		
Means of submitting complaints and suggestions		(+)		
Orderliness and safety of the hospital		(-)	Refining and improving	
Attitude of doctors and staff		(-)		
Readiness of officers to serve visitors		(-)		
Responsiveness to questions and complaints		(-)		
Speed of service time		(-)		
Appropriateness of service time		(-)		
Number of medical personnel		(-)		

The analysis identified 11 attributes with negative gap scores: hospital location; hospital reputation; availability of various types of necessary health services; provision of accurate and professional services; the hospital's understanding of patient needs; the attitude of doctors and staff in fostering trust; staff readiness to serve visitors; staff responsiveness to questions and/or complaints; hospital environmental conditions; service time; and the adequacy of medical personnel relative to community needs.

Level I House of Quality (HOQ) Analysis

Furthermore, interviews were conducted with hospital managers to identify technical responses, defined as the translation of patient needs into the organisation's operational framework. From these interviews, 20 technical responses were identified and subsequently grouped into eight primary categories. These responses represent specific actions the hospital can undertake to meet patient needs and improve service delivery.

Table 4. Inpatient Unit Technical Response

No	Secondary	Primary
1	Organization of education and training	Developing human resources
2	Quality orientation for new staff	
3	Procurement of uniforms for service personnel (doctors and staff)	Attention to personnel
4	Service staff incentives	
5	Rewards for exemplary/best service personnel	
6	Building maintenance, as well as other supporting facilities (such as parking)	Attention to physical facilities
7	Installation of cleanliness & order slogans	
8	Implementation of security rules and supervision in the hospital environment	
9	Rehabilitation of buildings and supporting facilities	
10	Arrangement and renewal of the interior of the rooms of the inpatient unit	Administration and service
11	Improvement of service system	
12	Improvement of administration system	Medical equipment
13	Provision of medical equipment	
14	Maintenance and repair of medical equipment	Information and promotion
15	Information & promotion activities of the hospital to the community	
16	Monitoring and evaluation	Monitoring and evaluation
17	Patient satisfaction survey of inpatient service users	
18	Optimization of suggestion box or complaint service for inpatients	Cooperation and development
19	Hospital development	
20	Increased cooperation	

Hospitals must implement various strategies in seven aspects of technical response to improve the quality of inpatient services. Thus, patients feel satisfied and choose the hospital to receive health services. Human resource development through education and training, as well as quality orientation for new staff, is an important step in improving service quality in inpatient units. Education and training can improve the professionalism and quality of service of staff, provide knowledge and awareness of ethics in services, and improve hospitality to patients. Meanwhile, quality orientation can be informal training for new staff to help them adapt to the hospital environment. Rewards in the form of special allowances given to one of the best service officers are a motivation for service officers to work professionally, arrive on time, and be more alert in responding to patients.

The maintenance of buildings, such as parking facilities and public toilets, is also an effort to maintain the comfort of patients who come for treatment. If these facilities are well maintained, they will increase visitor comfort. Thus, reputation also increases. The installation of cleanliness slogans is related to the hospital's efforts to maintain its environmental conditions to keep it

comfortable and clean. The implementation of rules of order and security supervision is an effort to make patients feel safe and comfortable in the inpatient unit. Implementation of security by employing several people in the security department (security). Building rehabilitation is conducted once a year in accordance with the budget disbursed each year. This effort is aimed at maintaining the hospital environment in good condition. Interior arrangement is a physical concern of the hospital for the interior of the inpatient unit room as an effort to maintain the condition of the hospital environment to remain comfortable and attractive.

The service system should be improved as optimally as possible so that officers can serve patients quickly. An improved service system is intended to enable service officers to serve professionally, so that the hospital's reputation increases. Improving the administration system is needed so that officers can serve patients quickly and professionally. If patients are quickly informed about the flow of services, officers no longer need to provide repeated information to patients. Addition of medical equipment is required to meet the needs of patients. Not only is the addition of medical equipment needed, but the maintenance of medical equipment is also needed so that the equipment can continue to be used to meet patient needs.

Monitoring and evaluation are carried out to maintain the consistency and suitability of service times as well as the readiness and alertness of officers in serving patient requests and complaints. Surveys are also needed to evaluate the services provided to patients, especially in inpatient rooms. This survey was strongly related to efforts to determine the expectations and suggestions of patients who use inpatient unit services. Optimizing the suggestion box or complaint service also provides an opportunity for inpatients to express their complaints, suggestions, and proposals for the services provided.

Hospitals must be developed to attract people to prefer using hospital inpatient services compared to other competitors. In relation to existing service attributes, development is closely related to hospital promotional activities, availability of various types of services, and price of services. Cooperation is needed to develop and provide services that are useful for meeting patients' needs.

Table 5. Direction and Target of Inpatient Unit Technical Response

No	Technical Response	Target	Direction
1	Organization of education and training	2-3 times a year	Up
2	Quality orientation for new staff	Every time new staff is hired	Up
3	Procurement of uniforms for service personnel (doctors and staff)	At minimum 3 suits	Up
4	Service staff incentives	In line with workers' achievements	Up
5	Rewards for exemplary/best service personnel	In line with workers' achievements	Up
6	Building maintenance, as well as other supporting facilities (such as parking)	Routine	Up
7	Installation of cleanliness & order slogans	In certain places	Up
8	Implementation of security rules and supervision in the hospital environment	As maximum as possible	Up
9	Rehabilitation of buildings and supporting facilities	According to conditions	Up
10	Arrangement and renewal of the interior of the rooms of the inpatient unit	Once a year	Up
11	Improvement of service system	As optimal as possible	Up
12	Improvement of administration system	As effective and efficient as possible	Up
13	Provision of medical equipment	Based to the condition of the needs	Up
14	Maintenance and repair of medical equipment	Routine and according to conditions	Up
15	Information & promotion activities of the hospital to the community	As maximum as possible	Up

16	Monitoring and evaluation	Routine	Up
17	Patient satisfaction survey of inpatient service users	1-2 times a year	Up
18	Optimization of suggestion box or complaint service for inpatients	Sms service for criticism and suggestions	Up
19	Hospital development	As maximum as possible	Up
20	Increased cooperation	As maximum as possible	Up

Table 5 indicates that the overall direction of technical responses is towards improvement. In the House of Quality, relationships between technical responses are identified as either positive or negative. A positive relationship suggests that enhancing one technical response will also improve others, whereas a negative relationship implies that improvements in one may hinder another. For example, building maintenance and auxiliary facilities such as parking can negatively affect hospital development, as development activities may cause temporary structural damage prior to repair. Similarly, the procurement of additional uniforms may reduce service officer incentives if funds allocated for benefits are redirected to uniform purchases. Conversely, the installation of cleanliness and order slogans has a positive relationship with the implementation of order and security supervision, as such slogans help reinforce discipline and order within the hospital environment.

The provision of medical equipment has a negative correlation with the maintenance and repair of medical equipment since the purpose of maintenance is to avoid or reduce the amount of medical equipment that needs to be purchased. Hospital information and promotion activities to the community are positively related to increased cooperation since increased promotion attracts other parties to cooperate. Hospital information and promotion activities are also positively related to hospital development since they indirectly become a means of promotion and information to the community with development. Patient satisfaction surveys/research have a positive impact on hospital development since the survey can identify what patients want as material for further development. Optimization of suggestion boxes or complaint services for treated patients is positively related to monitoring and evaluation since the suggestions made by patients become material for evaluation and monitoring.

Enhanced collaboration is positively correlated with the arrangement of education, as education and training can be conducted in a collaborative manner. Enhanced collaboration is positively related to the acquisition of uniforms for service personnel, as collaboration enables the procurement of additional funds for uniforms. Enhanced collaboration is positively related to the procurement of medical equipment, as collaboration allows for the acquisition of additional funds for medical equipment. Enhanced collaboration is positively related to the provision of rewards for exceptional/outstanding service officers, as collaboration enables the acquisition of additional partnership funds for rewards.

Table 6. Technical Response Weighted Value

No	Technical Response	Service Attributes	RV*	AI**	RI***
1	Organization of education and training	Friendliness of doctors and staff	9	-9.27	0,13
		Readiness of officers to serve patients	9		
		Hospital reputation	9		
		Responsiveness to questions and complaints	9		
		Speed of service time	9		
		Hospital's understanding of patients' needs	9		
		Explanation of patient's medical condition	9		
		The attitudes of doctors and staff in generating patient confidence	9		

		Correct and professional service	9		
2	Quality orientation for new staff	Speed of service time	9		
		Hospital's understanding of patients' needs	9		
		Explanation of patient's medical condition	1	-2.53	0.03
		The attitudes of doctors and staff in generating patient confidence	3		
		Correct and professional service	9		
3	Uniform procurement	Physical appearance of doctors and staff	9		
		Hospital reputation	9	15,3	-0,22
		Orderliness and safety of the hospital	9		
4	Service staff incentives	Friendliness of doctors and staff	9		
		Speed of service time	3		
		Responsiveness to questions and complaints	3	3,81	-0,05
		Correct and professional service	9		
		Explanation of patient's medical condition	3		
		Appropriateness of service time	9		
5	Rewards for exemplary/best service officers	Friendliness of doctors and staff	9		
		Speed of service time	9		
		Responsiveness to questions and complaints	3	4,35	0,06
		Explanation of patient's medical condition	9		
		Correct and professional service	9		
		Appropriateness of service time	9		
6	Building maintenance, and other supporting facilities	Supporting facilities	9		
		Hospital reputation	9	-7,65	0,11
		Hospital environmental conditions	9		
7	Installation of slogans	Hospital environmental conditions	3	-1.2	0,01
		Orderliness and safety of the hospital	3		
8	Implementation of security rules and supervision	Orderliness and safety of the hospital	9	0,9	-0,01
9	Rehabilitation of buildings and supporting facilities	Supporting facilities	9		
		Hospital reputation	9	-7,65	0,11
		Hospital environmental conditions	9		
10	Rearrangement and renewal of room interiors	Hospital reputation	9	-8,1	0,11
		Hospital environmental conditions	9		
11	Improvement of service system	Appropriateness of service time	9		
		Hospital service information	9		
		Hospital reputation	9	1,26	-0,01
		Correct and professional service	9		
		Speed of service time	9		
12	Improvement of administration system	Hospital reputation Royal Prima Medan	9		
		Speed of service time	9	-0.54	0,007
		Hospital service information	9		
		Correct and professional service	9		
13	Provision of medical equipment	Hospital medical facilities & equipment	9		
		Availability of various types of services	9	-4,5	0,006
		Hospital reputation	9		
14	Maintenance and repair of medical equipment	Hospital medical facilities & equipment	9		
		Availability of various types of services	9	-4,5	0,006
		Hospital reputation	9		

15	Information activities and promotion of the hospital to the community	Hospital reputation	9	-1,8	0,02
		Hospital service information	9		
16	Monitoring and evaluation	Friendliness of doctors and staff	1	-4,91	0,07
		Readiness of officers to serve patients	1		
		Hospital reputation	9		
		Responsiveness to questions and complaints	3		
		Speed of service time	3		
		Hospital's understanding of patients' needs	9		
		Explanation of patient's medical condition	1		
		The attitudes of doctors and staff in generating patient confidence	3		
		Correct and professional service	9		
		Appropriateness of service time	9		
17	Patient satisfaction survey	Means of submitting complaints and suggestions	9	0	0
		Hospital reputation	9		
18	Optimization of suggestion box or complaint service	Means of submitting complaints and suggestions	3	-3,36	0,04
		Appropriateness of service time	9		
		Friendliness of doctors and staff	9		
		Readiness of officers to serve patients	9		
		Responsiveness to questions and complaints	9		
		Affordable price	3		
19	Hospital development	Hospital reputation	9	-28,05	0,4
		Hospital location	9		
		Speed of service time	9		
		Number of medical personnel	9		
		Affordable price	1		
		Availability of various types of services	9		
20	Increased cooperation	Number of medical personnel	9	-10,89	0,15
		Availability of various types of services	9		
		Affordable price	9		
		Hospital reputation	9		

*Relationship Value **Absolute Importance ***Relative Importance

The relationships between technical responses were weighted as follows: strong = 9, medium = 3, and weak = 1. The absolute importance of each technical response was calculated as the sum of the products of each relationship value and the corresponding level of importance. The relative importance was expressed as the percentage of absolute importance. Higher absolute and relative importance values indicate a stronger relationship between the implementation of a technical response and the fulfilment of patient satisfaction, thereby warranting prioritisation in implementation.

Table 7. Ranking of Relative Importance and Absolute Importance

No	Respon Teknikal	AI	RI (%)
19	Hospital development	-28,05	0,4
20	Increased cooperation	-10,89	0,15
1	Organization of education and training	-9,27	0,13
10	Rearrangement and renewal of room interiors	-8,1	0,1168
6	Building maintenance, and other supporting facilities	-7,65	0,1103
9	Rehabilitation of buildings and supporting facilities	-7,65	0,1103
16	Monitoring and evaluation	-4,91	0,07
13	Provision of medical equipment	-4,5	0,006
14	Maintenance and repair of medical equipment	-4,5	0,006
18	Optimization of suggestion box or complaint service	-3,36	0,04

2	Quality orientation for new staff	-2.53	0.03
15	Information activities and promotion of the hospital to the community	-1,8	0,02
7	Installation of slogans	-1.2	0,01
12	Improvement of administration system	-0.54	0,007
17	Patient satisfaction survey	0	0
8	Implementation of security rules and supervision	0,9	-0,01
11	Improvement of service system	1,26	-0,01
4	Service staff incentives	3,81	-0,05
5	Rewards for exemplary/best service officers	4,35	0,06
3	Uniform procurement	15,3	-0.22

Discussion

Hospital development is closely linked to promotional activities and to fostering patient confidence in the quality of care, reinforcing the hospital's reputation for high standards of service. In a study conducted by Rodiah (2022), patient satisfaction was influenced by an increase in service quality resulting from the development of hospital buildings. The better the physical form of the hospital (development), the better the quality of service and level of satisfaction received. Siddiqui et al. (2015) further supported this finding, showing that the development of new hospital buildings with patient-centered features led to increased satisfaction with the physical environment. However, this study also highlighted the need to focus on clinical care to ensure overall patient satisfaction. Sundram et al. (2022) and Man & Chen (2020) found that service quality significantly impacted patient satisfaction, and Sundram also noted its impact on patient loyalty.

Enhanced cooperation serves as both a promotional mechanism for the hospital and a source of multifaceted benefits. Evidence from previous research indicates that strengthened collaboration can yield significant advantages for hospitals across multiple domains. Morgan & Bultje (2009) highlight the potential for quality improvement, redundancy reduction, and increased access to resources through collaboration with competitors. Collaboration in the form of international exchange and cooperation in promoting sustainable hospital development affects the areas of doctor-patient relationships and effective communication in the medical context (Jacobs et al., 2014). In addition, DeWolf (1992) emphasized the value of hospital-community partnerships, which not only strengthened relationships but also created opportunities for mutually beneficial joint activities. Jatmiko et al. (2018) conclude that there is a unidirectional and positive relationship between the level of service quality and promotion. It is known that promotion itself is a positive form that arises from cooperation between the hospital and other parties.

Improvements in the organization of education and training of service personnel are required. Training is an important element in restoring and improving the quality of human resources (HR) in an organization. Therefore, managers must fully support training programs so that the human resources in their organizations can develop and contribute optimally (Meybodi & Forghany, 2021). A well-designed employee training program can increase job satisfaction and productivity, reduce employee turnover, and encourage a culture of continuous learning within the organization (Mahatanankoon, 2007; Rodriguez & Walters, 2017). Ravaghi et al. (2021) emphasized the positive impact of training programs on hospital managers' skills and competencies, particularly in areas such as planning, organization, and leadership. The results showed that training design, needs assessment, delivery style, and evaluation have a significant positive influence on employee performance (Yimam, 2022).

CONCLUSION AND SUGGESTION

To be concluded analysis indicated that the three priority technical responses for improving inpatient service quality were hospital development, enhanced cooperation, and the provision of education and training. Implementing these strategies is expected to result in substantial improvements in the quality of inpatient care.

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CONFLICT OF INTEREST

No conflict of interest.

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