Analysis of Patient Service Quality with IOM Indicators in the Dental Polyclinic of Bhayangkara Hospital, Polri Education and Training College

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ABSTRACT
High-quality healthcare services are essential to ensure patient satisfaction and sustainable hospital performance. This study aims to analyze patient service quality at the Dental Clinic of Bhayangkara Lemdiklat Police Hospital using the Institute of Medicine (IOM) framework, which includes six dimensions: safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity. A quantitative descriptive design with a survey approach was employed. A total of 94 patients were selected through purposive sampling. Data were collected using a structured questionnaire measuring patients' expectations and perceived performance. The instrument was tested for validity and reliability, and the data were analyzed using descriptive statistics, paired sample t-tests, regression analysis, and Importance–Performance Analysis (IPA). The results indicate that overall service quality is perceived as good, particularly in effectiveness, safety, and patient-centered care, which obtained the highest mean scores. However, gaps remain in equity, timeliness, and efficiency. Equity showed the lowest mean value and the highest variability, suggesting that patients still perceive unequal treatment and service procedures. Paired sample correlations revealed strong and significant relationships among the IOM dimensions, implying that improvements in one aspect may positively influence others. Regression and ANOVA results indicate that service quality does not significantly differentiate patient types (general and BPJS). The IPA analysis places effectiveness, safety, and patient-centeredness in the "maintain performance" quadrant, while timeliness, efficiency, and equity require strategic improvement. These findings highlight the importance of continuous quality enhancement, particularly in ensuring fair, timely, and efficient dental services

Keywords: Service quality; IOM indicators; Dental clinic.

INTRODUCTION

High-quality health care is a prerequisite for improved population health and for sustaining public confidence in health systems; hospitals as referral institutions are therefore expected to provide care that is safe, effective, timely, efficient, patient-centered, and equitable (Institute of Medicine, 2001; Donabedian, 1988; Kruk et al., 2018). Quality of care extends beyond technical or clinical outcomes to encompass the degree to which services meet patients' needs, expectations, and experiences across the care continuum, and these patient-facing dimensions increasingly inform performance measurement and improvement initiatives (Donabedian, 1988; Institute of Medicine, 2001; Kruk et al., 2018). Growing public awareness of health rights and patient-centered models has heightened demand for systematic performance evaluation and continuous quality improvement within hospital services (Kruk et al., 2018; Institute of Medicine, 2001; Donabedian, 1988).

The Institute of Medicine's six aims—safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity—provide a widely used conceptual framework for assessing health-care quality and for prioritizing improvement actions (Institute of Medicine, 2001). These domains together emphasize minimizing harm, applying evidence-based practice, respecting patient preferences, reducing waiting times, optimizing resource use, and assuring fair access irrespective of socioeconomic status (Institute of Medicine, 2001; World Health Organization, 2018; Kruk et al., 2018). In the Indonesian context, the rollout of the National Health Insurance scheme (Jaminan Kesehatan Nasional, JKN) has substantially broadened financial access to hospital and outpatient services; however, expanded coverage frequently generates operational challenges—such as increased patient volumes and constrained resources—that can widen gaps between patient expectations and perceived service performance (World Health Organization, 2018; Kruk et al., 2018; Institute of Medicine, 2001).

The Dental Clinic of Bhayangkara Lemdiklat Police Hospital provides oral health services to both general and insured populations and thus plays a key role in local primary and referral dental care (Glick et al., 2012). Oral health services typically require technical precision, timely delivery, and clear clinician–patient communication; non-technical service elements strongly influence patient satisfaction, adherence, and perceived quality (Epstein & Street, 2011; Glick et al., 2012; Parasuraman, Zeithaml, & Berry, 1988). Given the heterogeneity of patient needs and potentially high demand for care, systematic evaluation of service quality using the IOM domains can identify strengths and shortcomings and guide managerial decisions for quality improvement. Accordingly, this study aims to analyse patient-perceived service quality at the Dental Clinic of Bhayangkara Lemdiklat Police Hospital using the six IOM quality indicators to inform continuous quality improvement.

METHODS

Study design, setting, and sampling: This investigation employed a quantitative descriptive (cross-sectional survey) design to assess patient perceptions of service quality at the Dental Clinic of Bhayangkara Lemdiklat Police Hospital. Data were collected from June to August 2025. The sampling frame comprised all patients who received dental services during the study period; a purposive sample of 94 respondents was selected to satisfy the inclusion criteria (aged ≥17 years, having received dental care at the clinic during the study window, and providing voluntary consent). The cross-sectional survey approach and purposive sampling strategy are standard for facility-based assessments that target service users' experiences when the population of interest is well defined (Creswell, 2014; Etikan, Musa, & Alkassim, 2016; Sedgwick, 2014).

Data collection, instrument, and analysis: Data were collected using a structured questionnaire explicitly mapped to the six IOM quality domains (safety, effectiveness, patient-centeredness, timeliness, efficiency, equity). Respondents rated both expectations and perceived performance for each item on a five-point Likert scale. Instrument validity was evaluated using Pearson's product-moment correlation, and internal consistency reliability was assessed with Cronbach's alpha (α); alpha was used as the primary indicator of internal reliability (Cronbach, 1951). Data analysis comprised descriptive statistics to summarise respondent characteristics and domain scores, paired-sample t-tests to examine expectation–

performance gaps, and Importance–Performance Analysis (IPA) to prioritise areas for managerial improvement (Martilla & James, 1977). The study protocol received approval from the institutional Health Research Ethics Committee, and written informed consent was obtained from all participants in accordance with the Declaration of Helsinki (World Medical Association, 2013). Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approach (4th ed.). SAGE.

RESULTS AND DISCUSSION
1. Respondent Characteristics

Tabel 1. Distribution of Respondents by Gender

Gender	Frequency	Percentage (%)
Male	34	36.2
Female	60	63.8
Total	**94**	**100.0**

Table 1 shows that of the 94 respondents at the Dental Clinic of Bhayangkara Lemdiklat Police Hospital, 60 (63.8%) were female, while 34 (36.2%) were male. This finding indicates that female patients utilize dental services more frequently than male patients. This pattern is consistent with previous studies reporting that women tend to be more concerned about oral health and more proactive in seeking healthcare services than men.

Tabel 2. Distribution of Respondents by Patient Type

Patient Type	Frequency	Percentage (%)
General	47	50.0
BPJS	47	50.0
Total	**94**	**100.0**

Table 2 shows a balanced distribution between general patients and BPJS patients, with 47 respondents in each group (50%). This balance provides an advantage for analysis, as it allows a more objective comparison between the two groups when evaluating service quality. General patients often have higher expectations because they pay out of pocket, whereas BPJS patients are often associated with longer administrative processes. Therefore, equal representation strengthens the validity of comparative interpretations.

2. Instrument Testing

Tabel 3. Validity Test Results

Dimension	r Count	r Table	Sig.	Remark
Safety	0.454	0.202	0.000	Valid
Effectiveness	0.306	0.202	0.003	Valid
Patient-centered	0.518	0.202	0.000	Valid
Timeliness	0.447	0.202	0.000	Valid
Efficiency	0.626	0.202	0.000	Valid
Equity	0.805	0.202	0.000	Valid

Table 3 shows that all questionnaire items meet the validity criteria with r-count values exceeding the r-table value (0.202) and significance values below 0.05. Therefore, all measurement items are declared valid for assessing service quality using the IOM indicators.

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Tabel 4. Multicollinearity Test Results

Dimension	Tolerance	VIF	Interpretation
Safety	0.296	3.382	No multicollinearity
Effectiveness	0.238	4.202	No multicollinearity
Patient-centered	0.154	6.496	No multicollinearity
Timeliness	0.275	3.630	No multicollinearity
Efficiency	0.134	7.472	No multicollinearity
Equity	0.420	2.382	No multicollinearity

The tolerance values (>0.10) and VIF values (<10) indicate that there is no serious multicollinearity among the independent variables, indicating that each IOM dimension contributes independently to the analysis.

Tabel 5. Reliability Test

Cronbach's Alpha	Number of Items
0.963	30

A Cronbach's Alpha value of 0.963 indicates excellent internal consistency, confirming that the instrument is highly reliable for measuring patient service quality.

3. Univariat Analysis

Tabel 6. Descriptive Statistics of IOM Dimensions

Dimension	Mean	Std. Deviation
Safety	23.22	2.636
Effectiveness	23.59	2.086
Patient-centered	23.22	2.156
Timeliness	21.57	2.517
Efficiency	21.36	2.488
Equity	20.71	3.642

Table 6 shows that the highest mean score is found in effectiveness (mean = 23.59), indicating that patients perceive clinical services as appropriate and beneficial. The lowest mean score is equity (mean = 20.71), with the highest variability, suggesting that patients still perceive unequal treatment in service delivery. Overall, patients report relatively good satisfaction in safety, effectiveness, and patient-centered care.

4. Bivariate Analysis

Tabel 7. Paired Sample t-Test Results

Variable Pair	Sig. (2-tailed)	Interpretation
Safety – Patient-centered	1.000	No difference
Effectiveness – Efficiency	0.000	Significant difference
Timeliness – Equity	0.090	No difference

The results show significant gaps between effectiveness and efficiency ($p < 0.05$), indicating that although services are effective, they are not always delivered efficiently. Other dimensions show no statistically significant differences.

Tabel 8. Paired Sample Correlations

Pair	N	Correlation	Sig.
Safety – Patient-centered	94	0.725	0.000
Effectiveness – Efficiency	94	0.682	0.000
Timeliness – Equity	94	0.703	0.000

All correlations are strong and significant, implying that improvements in one dimension tend to enhance perceptions of other related dimensions.

5. Regression and ANOVA Results

Tabel 9. Model Summary

R	R Square	Adjusted R²
0.201	0.040	-0.026

Only 4% of the variance in patient type is explained by service quality indicators, indicating a very weak relationship.

Tabel 10. ANOVA Test

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.951	6	0.159	0.612	0.720
Residual	22.549	87	0.259		
Total	23.500	93			

The ANOVA results show that F = 0.612 with p = 0.720 (>0.05), meaning the regression model is not statistically significant. Service quality does not differ significantly between patient types (general vs. BPJS).

6. Importance Performance Analysis (IPA)

The Cartesian diagram divides indicators into four quadrants. The interpretation shows:

a. Quadrant II (Maintain Performance): Effectiveness, Safety, Patient-centered.
b. Quadrant III (Low Priority): Timeliness, Efficiency, Equity.
c. Quadrant I and IV: No indicators classified.

Although equity appears in Quadrant III, it shows the lowest mean score and highest variance, making it the most critical dimension requiring improvement.

Discussion

The results indicate that overall service quality at the Dental Clinic of Bhayangkara Lemdiklat Police Hospital is perceived as good, particularly in effectiveness, safety, and patient-centered care (Batbaatar et al., 2016; Zarei et al., 2012). Patients feel that treatments are appropriate, safe, and delivered with sufficient attention and communication (Batbaatar et al., 2016; (Zarei et al., 2012). These findings underscore the importance of clinical competence and interpersonal interaction in dental services (Zarei et al., 2012).

However, gaps remain in equity, efficiency, and timeliness (Rezaei et al., 2018; Kashkoli et al., 2017). Patients perceive differences in service processes and waiting times, especially related to administrative procedures and treatment duration (Rezaei et al., 2018; Kashkoli et al., 2017). Interestingly, BPJS patients reported slightly more positive perceptions, suggesting that general patients may hold higher expectations due to direct payment mechanisms (Rezaei et al., 2018; Kashkoli et al., 2017).

The strong correlations among IOM dimensions imply that service quality is holistic: improving efficiency may also improve perceived effectiveness and fairness (Dey et al., 2006). Therefore, managerial strategies should focus on optimizing workflows, improving queue systems, and strengthening communication to reduce perceived delays and inequality (Dey et al., 2006).

Implications

The findings support the theoretical model of expectation–perception gaps in healthcare quality (Chakravarty, 2011). Practically, hospital management should prioritize equity improvement through standardized service protocols for all patients, better scheduling systems, patient education regarding treatment duration, and staff training in patient-centered communication (Chakravarty, 2011). Continuous monitoring and evaluation are essential to ensure sustained quality improvement and enhanced patient satisfaction (Chakravarty, 2011).

CONCLUSION

This study demonstrates that the quality of services at the Dental Clinic of Bhayangkara Lemdiklat Police Hospital is generally perceived as satisfactory, especially in terms of effectiveness, safety, and patient-centered care. Patients feel that clinical procedures are appropriate, safe, and supported by adequate communication and attention from healthcare providers. These dimensions represent the dental clinic's main strengths and should be consistently maintained.

Nevertheless, several aspects still require improvement, particularly equity, efficiency, and timeliness. The lowest performance was found in equity, indicating that patients may still perceive differences in treatment or service processes. In addition, delays in service flow and procedural complexity contribute to inefficiency and longer waiting times. These gaps between patient expectations and actual performance may reduce overall satisfaction if not addressed.

The strong correlations among the IOM dimensions indicate that service quality is holistic; improvements in efficiency and fairness are likely to enhance perceptions of effectiveness and patient-centered care. Therefore, hospital management should prioritize standardizing service procedures, optimize queue and schedule systems, enhancing communication with patients, and strengthening staff capacity to ensure equal, timely, and efficient services. Continuous evaluation using the IOM framework is recommended to support sustainable quality improvement and higher patient satisfaction in dental healthcare services.

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