

FACTORS ASSOCIATED WITH PATIENT SATISFACTION IN RADIOLOGY SERVICES

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ABSTRACT

Patient satisfaction is a key indicator of healthcare service quality, including radiology services. Efficient radiology services supported by adequate administrative processes, responsive healthcare personnel, and appropriate facilities contribute to positive patient perceptions and overall hospital performance. However, variations in service delivery may influence patient satisfaction levels. This study aimed to analyse factors associated with patient satisfaction in radiology services at Alimuddin Umar Regional Public Hospital in 2025. A quantitative study with a cross-sectional design was conducted involving 105 patients who had utilised radiology services at least once. Respondents were selected using purposive sampling. Data were collected through structured questionnaires and interviews. Data analysis included univariate analysis, bivariate analysis using the chi-square test, and multivariate analysis using logistic regression. The results showed that 59.0% of patients were satisfied with radiology services. Significant associations were found between patient satisfaction and waiting time ($p < 0.001$; OR=23.833), patient record administration ($p < 0.001$; OR=6.584), healthcare personnel services ($p < 0.001$; OR=8.143), and facilities and infrastructure ($p < 0.001$; OR=7.102). Physician services did not show a significant association with patient satisfaction in multivariate analysis ($p > 0.05$). Waiting time was identified as the dominant factor influencing patient satisfaction. Waiting time is the most influential factor associated with patient satisfaction in radiology services. Improving service efficiency through revision of radiology service standard operating procedures is recommended to enhance patient satisfaction.

Keywords: healthcare quality; hospital management; patient satisfaction; radiology service; waiting time

INTRODUCTION

Patient satisfaction is a widely accepted indicator of healthcare service quality and organisational performance. High patient satisfaction reflects the degree to which healthcare services meet patient expectations, needs, and preferences, and is closely linked to treatment adherence, patient loyalty, and hospital reputation (Donabedian, 1988; Bleich et al., 2009). In hospital settings, patient satisfaction is increasingly utilised as a benchmark for evaluating service effectiveness and guiding continuous quality improvement initiatives (Pohan, 2012).

Radiology services play a critical role in supporting diagnostic accuracy and clinical decision-making. The quality of radiology services is determined not only by technical accuracy but also by service efficiency, communication, and patient-centred care (Parasuraman et al., 1990; Rahmaddian et al., 2019). Prolonged waiting times, inefficient administrative procedures, and inadequate facilities have been reported as major contributors to patient dissatisfaction in radiology units (Muhtadi et al., 2020; Sagita et al., 2023).

The SERVQUAL model conceptualises service quality through five dimensions: reliability, responsiveness, assurance, empathy, and tangibles (Parasuraman et al., 1990). Previous studies have demonstrated that waiting time and administrative accuracy represent key components of reliability, while healthcare personnel responsiveness and facility adequacy strongly influence patient satisfaction (Tjiptono, 2019; Christiani et al., 2021).

In Indonesia, patient satisfaction is a mandatory indicator under the Minimum Service Standards established by the Ministry of Health (Kemenkes RI, 2022). Although some hospitals meet technical service standards, challenges related to service efficiency and administrative completeness persist, potentially affecting patient satisfaction levels (Rahmiati & Femesvari, 2020).

At Alimuddin Umar Regional Public Hospital, internal evaluations have indicated variability in radiology service waiting times and administrative completeness. However, empirical evidence regarding factors associated with patient satisfaction in this setting remains limited. Therefore, this study aimed to analyse factors associated with patient satisfaction in radiology services at Alimuddin Umar Regional Public Hospital in 2025.

METHOD

This study employed a quantitative analytic observational design with a cross-sectional approach (Creswell & Creswell, 2018). The research was conducted at Alimuddin Umar Regional Public Hospital between April and May 2025.

The study population comprised patients who utilised radiology services during the study period. A total of 105 respondents were selected using purposive sampling based on predefined inclusion criteria (Asti, 2023). Data were collected using structured questionnaires adapted from validated patient satisfaction instruments (Tjiptono, 2019).

The dependent variable was patient satisfaction, while independent variables included waiting time, patient record administration, physician services, healthcare personnel services, and facilities and infrastructure. Data were analysed using univariate, bivariate (chi-square test), and multivariate logistic regression analyses, with a significance level of $p < 0.05$ (Hosmer et al., 2013).

Ethical approval was obtained prior to data collection, and informed consent was secured from all participants in accordance with ethical research principles (World Medical Association, 2013).

RESULT AND DISCUSSION

A total of 105 respondents who had utilised radiology services at Alimuddin Umar Regional Public Hospital were included in the analysis. Overall, 59.0% of respondents reported being satisfied with the radiology services, while 41.0% expressed dissatisfaction.

Univariate analysis demonstrated variations in respondent perceptions across service quality dimensions. More than half of the respondents perceived waiting time as acceptable, whereas a substantial proportion reported delays in service delivery. Most respondents rated patient record administration as adequate, although some reported issues related to administrative completeness and service flow. Perceptions of healthcare personnel services were generally positive, particularly in terms of courtesy and responsiveness. Facilities and infrastructure were largely perceived as adequate, although several respondents reported limitations related to waiting area comfort and supporting facilities.

Bivariate analysis using the chi-square test revealed statistically significant associations between patient satisfaction and waiting time ($p<0.001$), patient record administration ($p<0.001$), healthcare personnel services ($p<0.001$), and facilities and infrastructure ($p<0.001$). Respondents who experienced shorter waiting times, efficient administrative processes, responsive healthcare personnel, and adequate facilities were more likely to report satisfaction with radiology services. Physician services showed a statistically significant association in bivariate analysis; however, this association was not retained in the multivariate model.

Multivariate logistic regression analysis was conducted to identify the dominant factors associated with patient satisfaction after controlling for potential confounders. The analysis indicated that waiting time was the most influential factor associated with patient satisfaction ($OR=23.833$), suggesting that respondents who perceived waiting times as acceptable were substantially more likely to report satisfaction. Healthcare personnel services were also strongly associated with patient satisfaction ($OR=8.143$), followed by facilities and infrastructure ($OR=7.102$) and patient record administration ($OR=6.584$). Physician services were not significantly associated with patient satisfaction in the adjusted model ($p>0.05$). These findings indicate that operational efficiency and service support factors play a more prominent role in determining patient satisfaction with radiology services than physician-related factors.

The findings of this study demonstrate that waiting time is the most influential factor associated with patient satisfaction in radiology services. This result is consistent with previous studies indicating that prolonged waiting times significantly reduce patient satisfaction, even when diagnostic accuracy and clinical outcomes are satisfactory (Bleustein et al., 2014; Rahmaddian et al., 2019). Waiting time is a key dimension of service reliability, and delays may increase patient anxiety, frustration, and negative perceptions of overall service quality (Andaleeb, 2001; Parasuraman et al., 1990).

Administrative efficiency, particularly the completeness and accuracy of patient records, was also found to be significantly associated with patient satisfaction. Inefficient administrative processes may lead to service delays, repeated examinations, and decreased patient trust in healthcare providers. These findings support earlier research emphasising that administrative reliability is a critical determinant of perceived healthcare quality and patient satisfaction (Al-Abri & Al-Balushi, 2014; Tjiptono, 2019). Effective patient record management contributes to smoother service flow and improved patient experiences.

Healthcare personnel services, including responsiveness, courtesy, and communication, showed a strong association with patient satisfaction. Patients tend to value respectful interactions, clear explanations, and emotional support during radiological procedures, particularly when experiencing anxiety related to diagnostic outcomes. This finding aligns with studies highlighting the importance of interpersonal aspects of care in shaping patient perceptions and satisfaction (Christiani et al., 2021; Cleary & McNeil, 1988). Responsiveness and empathy from healthcare personnel enhance patient trust and perceived service assurance.

Facilities and infrastructure were also significantly associated with patient satisfaction. Adequate and well-maintained facilities contribute to patient comfort, safety, and confidence in the quality of services provided. Previous studies have reported that clean environments, modern equipment, and comfortable waiting areas positively influence patient satisfaction in hospital and radiology

settings (Xesfingi & Vozikis, 2016; Wirajaya & Dewi, 2022). These factors correspond to the tangibles dimension of the SERVQUAL model (Parasuraman et al., 1990).

Interestingly, physician services were not identified as a dominant factor in the multivariate analysis. This may be attributed to the limited direct interaction between patients and radiologists, as patients are more frequently engaged with radiographers and administrative staff during the service process. Similar findings have been reported in radiology service studies, where patient satisfaction was more strongly influenced by service efficiency and support staff performance than by physician interaction (Swastika et al., 2020; Sagita et al., 2023).

Overall, the results of this study reinforce the applicability of the SERVQUAL framework in evaluating radiology service quality. Reliability, responsiveness, and tangibles were the most prominent dimensions influencing patient satisfaction. These findings suggest that improving operational efficiency, administrative accuracy, and interpersonal communication should be prioritised to enhance patient satisfaction in radiology services. Continuous monitoring and evidence-based service improvement strategies are essential to meet patient expectations and comply with national healthcare quality standards (Donabedian, 1988; Kemenkes RI, 2022).

CONCLUSION

Patient satisfaction in radiology services at Alimuddin Umar Regional Public Hospital is significantly associated with waiting time, administrative efficiency, healthcare personnel services, and the adequacy of facilities and infrastructure. Among these factors, waiting time is identified as the most influential determinant of patient satisfaction. These findings highlight the critical role of service efficiency and organisational processes in shaping patient perceptions of radiology service quality.

Improving patient satisfaction requires systematic efforts to reduce waiting times through optimisation of service flow, improved scheduling, and better coordination between administrative and clinical units. Strengthening administrative procedures, enhancing the responsiveness and communication skills of healthcare personnel, and maintaining adequate facilities and infrastructure are also essential. Continuous monitoring and evaluation of radiology service performance are recommended to support evidence-based quality improvement and ensure sustainable patient-centred care.

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