

Service Quality, Perceived Gaps, and Predictors of Patient Satisfaction in a Public Hospital: A SERVQUAL-Based Study

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Abstract— The purpose of this study was to determine the quality of service and factors that are related to patient satisfaction on a Level II public hospital based on the SERVQUAL model. A cross-sectional descriptive-analytic design was used in which data were gathered through a structured survey on the patients who took part in answering five dimensions of SERVQUAL, namely, the tangibles, reliability, responsiveness, assurance, and empathy. The qualitative observations were also incorporated in the study to determine gaps in service quality. Perceived service quality was assessed by the use of descriptive statistics such as frequencies and weighted means whereas chi-square tests and multiple linear regression analysis were utilized to assess the factors affecting patient satisfaction. Findings showed that patients were very satisfied with all the dimensions of SERVQUAL with empathy and reliability satisfaction levels being the highest. The areas that were found to have some gaps included missed appointments, less intimate treatment caused by staff shortages and lack of infrastructure. The chi-square analysis indicated that, there were significant relationships between service quality dimensions and patient satisfaction as empathy and reliability showed to be the strong predictors of satisfaction. The main drivers of satisfaction were promptness of care provided, communication and the general healthcare conditions. The study will suggest specific suggestions on how the hospital can be improved including streamlining the patient flow, improving the staff workload and investing in the infrastructure as per such findings. These strategies are capable of increasing service delivery, patient experiences and making long term changes that can improve patient satisfaction. The research study can give useful information to the health care administrators who wish to introduce quality improvement programs in the state hospitals.

Keywords— Service Quality, Patient Satisfaction, SERVQUAL Model, Healthcare Management.

I. INTRODUCTION

Patient satisfaction has emerged to be one of the key indicators of quality of healthcare and performance of the system across the globe. Whereas the conventional method of measuring hospital effectiveness passed more emphasis on clinical outcomes and utilization metrics, new health systems have realized that patient perception of care is also valuable in measuring service success. Satisfaction defines the experience of people in aspects of timeliness, communication, responsiveness, empathy, and the physical care environment, and it offers much-needed feedback regarding whether services are provided as per the expectation of the patients.

Research constantly proves that the presence of the positive patient experience is connected to better treatment adherence, enhanced trust in providers, higher continuity of care, and higher chances of re-referring or reusing health facilities (Aysola et al., 2020; Chaniotakis and Lymperopoulos, 2021; Natan et al., 2024). As a result, patient satisfaction has become a popular

outcome of healthcare delivery as well as a driver of service improvement initiative.

A large accumulation of data on the topic defines that patient satisfaction is influenced by several factors that are interacting and, at the same time, conditioned by the quality of clinical service, the level of interaction between a patient and a provider, organizational processes, and sociodemographic factors. It is known that effective communication and patient-centered relations have been associated with increased satisfaction, involvement, and trust multiple times (Khan et al., 2021; Pérez-Romero et al., 2023). On the same note, cleanliness, accessibility of equipment, and comfort of facilities are aspects of environmental and structural conditions that also contribute to the formation of care quality perceptions (Saha et al., 2023). Age, education, and other background factors as sociodemographic factors may also have an impact on expectations and ratings of care experiences (Djordjević and Vasiljević, 2020; Hu et al., 2020). Such result

indicate that patient satisfaction has many dimensions that cannot be appropriately measured by single or general measures only.

In a bid to measure these dimensions systematically, structured service quality frameworks have been embraced by healthcare researchers and managers. The SERVQUAL model by Parasuraman, Zeithaml, and Berry (1988) is one of the most popular and proven to use in the measurement of the perceived service quality in the sphere of the healthcare as well. The SERVQUAL conceptualizes service quality based on five dimensions, namely reliability, assurance, tangibles, empathy and responsiveness. Reliability is the capacity to deliver true and reliable services; assurance is the competency of the staff and their ability to evoke trust, tangibles deals with physical buildings and equipment, empathy deals with individualized care and caring of patients and responsiveness deals with promptness and being willing to help patients. Such a multidimensional strategy enables healthcare organizations to determine certain strengths and weaknesses instead of using the aggregate satisfaction ratings.

The use of SERVQUAL in healthcare environments in different countries has always proven useful in terms of prioritizing service improvement. Research has demonstrated that reliability and responsiveness can be a good predictor of patient satisfaction, especially in situations where delays, waiting time, or procedural inefficiency is prevalent (Abd-El-Salam et al., 2020; Kumar et al., 2022). Other types of tangibles such as hospital facilities and the environment also affect patient comfort and their trust in care provision (Aljabri and Alzahrani, 2022). In the meantime, such interpersonal aspects as empathy and assurance are correlated with trust, emotional comfort, and perceived professionalism of medical personnel (Khan et al., 2021; Putri et al., 2024). All these studies combined highlight the importance of the role of both technical and relational components of care in satisfaction outcomes.

In addition to determination of the general performance, the service quality measurements are more concerned with detection of the gaps between the desired performance and the actual experience. Gap analysis is useful to find out what patients think are weaknesses in the services that are not meeting their expectations, despite average levels of satisfaction seeming satisfactory. These discrepancies could be due to delays,

lack of information, staff shortage or facilities. The discovery of such gaps gives practical information towards specific quality improvement interventions. Gap analyses identified with SERVQUAL have been implemented in a range of clinical environments to inform reformation of communication practices, care processes, and resource allocation (Hijazi et al., 2024; Takruri et al., 2023). The usefulness of this diagnostic feature is especially high in the situations when resources are scarce and the improvements prioritization is a necessity.

Public hospitals are one of the environments, in which the evaluation of the quality of the service is particularly important. Public facilities often handle greater number of patients, work on tight budgets, and face shortage of workforce that can present challenges in service delivery systems when compared to the private institutions. The given structural problems may contribute to increased wait time, overcrowding, and the lack of individual care, all of which are likely to have a detrimental effect on patient experiences. As comparative studies have reported variations in the satisfaction rates of the patients receiving services provided by the state and by the ones privately, it is crucial that one understands the context-dependent factors that define the quality of the services (Farooq et al., 2020; Jan et al., 2020). Evidence-based assessment is thus critical in resource-constrained environments to guide practical and pragmatic quality improvement policies (Fadeyi et al., 2024).

Studies regarding patient satisfaction in most low- and middle-income countries have shifted towards enhancing accountability and patient-centered care in government hospitals. Nevertheless, the evidence is not distributed evenly throughout regions and levels of hospitals. Although tertiary or urban hospitals may be of more interest, provincial or secondary level public-based hospitals, in which a significant proportion of the population utilizes care, are understudied. Given that the service delivery issues may vary in such settings compared to settings with greater resources, knowledge of patient experiences in such settings can help improve the level of satisfaction and the factors that may drive such satisfaction.

It is against this background that the use of a multidimensional and systematic framework like SERVQUAL would provide a methodical approach towards measuring the performance of the services

offered, as well as areas that require improvement upon, and how various service elements lead to the overall satisfaction. A combination of quantitative evaluation of service quality and the qualitative analyses of perceived gaps can contribute to the better perspective of the patient experiences. Moreover, predictors can be statistically modeled to find out which dimensions are most closely related to the satisfaction and, therefore, contribute to evidence-based decision-making and resource allocation.

Therefore, the present study applied the SERVQUAL framework to evaluate patient satisfaction in a public hospital setting. Specifically, it sought to assess perceived service quality across the five SERVQUAL dimensions—reliability, assurance, tangibles, empathy, and responsiveness; to identify perceived service quality gaps across these dimensions using survey and qualitative findings; and to examine factors associated with patient satisfaction using inferential statistical analysis.

II. METHODOLOGY

This study employed a descriptive-analytical cross-sectional design to evaluate service quality and patient satisfaction in a Level II public hospital. Data were collected from patients who availed hospital services during the study period using a structured questionnaire based on the SERVQUAL framework developed by Parasuraman, A., Zeithaml, V. A., and Berry, L. L. (1988). The instrument assessed perceived service quality across five dimensions: reliability, assurance, tangibles, empathy, and responsiveness. Items were rated on a five-point Likert scale ranging from strongly disagree to strongly agree. Demographic characteristics, including age, sex, marital status, educational attainment, and occupation, were also obtained.

Descriptive statistics, including frequencies, percentages, weighted means, and rankings, were computed to assess perceived service quality across SERVQUAL dimensions and to determine the overall level of patient satisfaction. To further identify perceived service quality gaps, observational notes and documentary reviews were conducted to capture contextual issues related to service processes, environmental conditions, and patient experiences, thereby providing qualitative insights to supplement survey findings.

To examine factors associated with patient satisfaction, SERVQUAL dimension ratings and demographic variables were categorized and analyzed using inferential statistics. Chi-square tests of independence were performed to determine significant associations between service quality dimensions, patient characteristics, and overall satisfaction levels. Statistical significance was set at $p < 0.05$.

This integrated quantitative and qualitative approach enabled comprehensive assessment of perceived service performance, identification of service delivery gaps, and examination of factors associated with patient satisfaction, thereby generating evidence to inform targeted quality improvement strategies within the hospital setting.

III. RESULTS AND DISCUSSION

Perceived service quality across the five SERVQUAL dimensions: reliability, assurance, tangibles, empathy, and responsiveness

Table 1 shows that patients generally perceived hospital services positively, with overall satisfaction rated “Agree” ($\bar{x} = 4.23$). This indicates that the hospital met patient expectations across most aspects of care delivery. High overall satisfaction suggests acceptable performance in both technical and interpersonal domains of healthcare, consistent with studies reporting that perceived service quality is a strong determinant of patient satisfaction and continued utilization of services (Chaniotakis & Lymperopoulos, 2021; Saha et al., 2023).

Empathy was the most important dimension of SERVQUAL ($\bar{x} = 4.34$). This observation explains that personalized care, empathy, and respectful dialogue play a crucial role in helping patients have positive experiences. Behaviors that are more interpersonal like listening to concerns, understanding and showing that one cares are more likely to be recalled better than technical procedures. The same conclusion has been stated in earlier medical research, during which empathy and patient-centered communication positively influenced the satisfaction and trust (Khan et al., 2021; Perez-Romero et al., 2023). Studies have shown that caring staff conduct could be a vital buffer in resource constrained hospitals, that are publicly owned and may be experiencing infrastructural constraints thus maintaining positive perception of patients.

Table 1. Perceived Service Quality and Overall Patient Satisfaction

Dimension	\bar{x}	Interpretation	Rank
Tangibles	4.06	Agree	5
Reliability	4.33	Agree	2
Responsiveness	4.22	Agree	4
Assurance	4.24	Agree	3
Empathy	4.34	Agree	1
Overall Satisfaction	4.23	Agree	—

The second one was reliability (x 4.33) indicating that the patients experienced the hospital services as accurate, consistent, and reliable. This dimension will portray compliance to appropriate procedures, appropriate delivery of treatment, and equity in service delivery. The dominance of reliability is correlated with the evidence that high-quality care with no errors has a strong impact on patient trust in health centers (Abd-El-Salam et al., 2020; Kumar et al., 2022). Patients will be more satisfied when they believe that they are receiving the necessary services in the right manner and without any unnecessary delays or errors in spite of other limits.

Other positive ratings were given to assurance (x =4.24) and responsiveness (x =4.22). These dimensions include competence of staff, courtesy and quickness in response to the needs of patients. The results indicate that the patients appreciate clear explanations, professionalism, and prompt services when they are in the hospital. Other past researches also highlight close relationships between knowledge, confidence, and responsiveness of healthcare providers and positivity and perceived quality of care with patient ratings (Rahim et al., 2021; Woo and Choi, 2021). The service processes can be efficient to minimize the apprehension and frustration caused by waiting, thus improving the experience.

Though the tangibles still fall under the “ Agree category, this dimension was the lowest (x 0 = 4.06). This relatively low rating shows that physical buildings, cleanliness, equipment, and comfort in the environment might not be exactly what the patients expect.

This is not a rare occurrence in the publicly available healthcare environment, where financial limitations and infrastructural limitations tend to influence the healthcare environment more than the staff performance. Research has indicated that the tangibles and their impact on patient impressions can be lower than interpersonal and procedural issues (Aljabri and

Alzahrani, 2022; Saha et al., 2023). However, it is still relevant to enhance the physical environment, where safety and professionalism are developed through factors such as comfort and cleanliness.

Combined, these findings imply that patients place more importance on relational and functional elements of care specifically empathy, reliability, and assurance rather than structural or environmental elements in assessing hospital services. This tendency can be taken as the continuation of the existing literature that suggests that human relationships and service quality are the key factors of satisfaction in a healthcare facility. Thus, although further investment in the facility upgrading is positive, enhancing the skills of the staff members to improve their communication, consistency of the delivered service and timely responsiveness might have more positive effects on the satisfaction of patients and the overall quality of the delivered services.

Perceived service quality gaps

Table 2 shows the service quality gaps identified according to the five dimensions of SERVQUAL based on the comparison of expected care standards with the service delivery problems observed or reported. Although the quantitative results showed relatively positive attitudes towards the hospital services, the qualitative analysis showed that there were a few operational and structural limitations that did not permit the uniform realisation of the standards.

In the dimensions, the gaps were mostly associated with high patient volume, staff-to-patient ratio and resource constraint which influenced timeliness, communication, and the physical care environment.

These results indicate the areas in which service processes do not completely correspond with patient expectations regardless of the positive ratings of the general satisfaction.

Table 2. Perceived service quality gaps

Dimension	Expected Standard	Observed/Reported Issues	Identified Gap
Reliability	Consistent, timely care delivery	Delays in appointments and follow-ups; high patient volume	Inconsistent service delivery
Assurance	Staff competence and patient trust	Workload stress affecting interactions	Reduced confidence/limited time for explanation
Tangibles	Clean, adequate facilities and equipment	Resource limitations and infrastructure constraints	Insufficient physical environment
Empathy	Individualized, compassionate care	Short consultation time due to staffing shortages	Limited personalized attention
Responsiveness	Prompt assistance and minimal waiting	Long waiting times and slow service flow	Delayed response to patient needs

Under the guidance of the SERVQUAL used by Parasuraman, A. and others, gaps were studied based on the reliability, assurance, tangibles, empathy, and responsiveness. Although the quantitative results showed fairly positive attitudes toward service quality, the qualitative evaluation showed that there are operational and structural issues that are likely to impede the constant provision of patient-based care. These inconsistencies indicate that overall job satisfaction may be positive, with situation-related frailties of service execution.

Regarding reliability, the patients anticipated the regularity of the care and its promptness, though, the lack of punctuality in appointments, follow-ups, and the number of patients per session were mentioned. These problems added to the view of inconsistent service provision. Reliability is usually believed to be the key determinant of healthcare quality since it indicates the level of accuracy and reliability of the system to render services. Provided that the schedule is interrupted or the wait time grows, the confidence of the patients in the efficiency of the services may decrease. The same obstacles have been reported within the context of the public hospital, where timely care delivery is impaired due to overcrowding and inefficiency in the workflow (Kumar et al., 2022; Farooq et al., 2020). The existence of such delays in the present study indicates that there is a requirement of better scheduling mechanisms and management of flow of patients.

To ensure this, the patients anticipated effective personnel and proper communication that will bring about trust and confidence. Nevertheless, the pressures of work and staffing seemed to influence interactions causing less access to explanation and reassurance. There is a high possibility of heavy workloads reducing

the time that healthcare professionals spend on patient education and emotional support. The previous literature has shown that rushes or partiality in communication can also lead to a reduction in patient confidence and satisfaction despite satisfactory clinical care (Rahim et al., 2021; Perez-Romero et al., 2023). These results highlight the significance of balancing efficiency with technical issues and spending time with patients.

The most apparent were identified within tangibles. Despite the patients appreciating clean and well-equipped facilities, shortage of resources and infrastructure was witnessed resulting in inadequate physical conditions. The working conditions of the public hospitals are often limited by financial and structural limitations which impact the maintenance, availability of equipment and general comfort. Research has revealed that the cleanliness, space, and facility adequacy are some of the environmental factors that greatly affect service quality and safety perceptions (Aljabri and Alzahrani 2022; Saha et al., 2023). Although tangibles do not seem to be the most prominent source of satisfaction than interpersonal care, the consistent infrastructural deficits can adversely form the impressions of the patients and their confidence to the institution.

Equally, the gaps associated with empathy were as a result of the limited consultation durations that were brought about by staffing deficit. Though employees were overall viewed as caring, time constraints to provide attention individually minimized chances of handling issues of patients in depth. Patient-centered healthcare is based on compassionate, personal care, with a lack of sufficient time to interact with patients potentially becoming a barrier to the formation of rapport between them. Empathy is typically mentioned

as one of the key sources of satisfaction in the previous studies, especially in the environment that provides services to vulnerable or high-volume populations (Khan et al., 2021; Putri et al., 2024). The management of workforce constraints can thus be used to maintain interpersonal strengths already exhibited by the hospital.

Lastly, long waiting time and slow flow of service was linked to responsiveness gaps. Patients were delayed in receiving timely attention due to systemic bottlenecks as the staff were willing to help.

Responsiveness is a measure of staff behaviour and operational efficiency and therefore, the delays might not be caused by staff alone, but since the processes are not eased and the resources allocated.

It has been indicated that waiting time is also among the most commonly mentioned cause of dissatisfaction in hospital environments (Woo and Choi, 2021; Fadeyi et al., 2024). Better queue control, triage, and coordination of services would thus result in better perceived responsiveness and general patient experience.

Combined, these findings demonstrate that service quality gaps in the hospital are mostly systemic and not attitudinal. The overall attitude of patients towards staff members was that they felt competent and supportive; although, operational demands, large patient volumes, and shortages of resources limited the delivery of anticipated standards. This difference matters as it indicates that organizational and process changes can include staffing changes, workflow optimization and facility upgrades and these efforts can significantly decrease the gaps and ensure patient satisfaction without significant behavioral change in the healthcare staff.

Factors associated with patient satisfaction

Table 3 presents the distribution of patient satisfaction levels across the five service quality dimensions and the results of the chi-square test of independence. Satisfaction responses were categorized as satisfied, neutral, and dissatisfied to determine whether variations in perceived service quality were significantly associated with overall patient satisfaction. The analysis examined whether differences in satisfaction levels existed across the SERVQUAL dimensions.

Table 3. Factors Associated with Patient Satisfaction Across SERVQUAL Dimensions

SERVQUAL Dimension	Satisfied	Neutral	Dissatisfied	χ^2	df	p-value	Interpretation
Tangibles	215	54	39	—	—	—	—
Reliability	304	25	6	—	—	—	—
Responsiveness	300	25	10	—	—	—	—
Assurance	319	20	11	—	—	—	—
Empathy	80	11	3	—	—	—	—
Total χ^2	—	—	—	92.84	8	< 0.001	Significant

The chi-square test showed that the SERVQUAL dimensions were significantly related to patient satisfaction ($\chi^2(8) = 92.84, p < 0.001$), which showed that the level of satisfaction varied according to the dimension of service measured. This result indicates that not every service quality dimension matters to patient experiences and that some of them may have a more significant impact on the satisfaction outcomes.

Out of the dimensions, the highest levels of satisfaction were registered in assurance and reliability and closely came responsiveness. These findings suggest that patients attach a lot of importance to the competence of the staff, their professionalism and the consistency of providing true and reliable care. Patients will feel empowered and contented with the hospital services when the health professionals communicate effectively,

display their expertise, and carry out their tasks appropriately. The same conclusions are drawn in the other papers, which discuss reliability and assurance as the main factors that determine patient trust and favorable service ratings (Abd-El-Salam et al., 2020; Kumar et al., 2022). Well-structured and efficient service processes can therefore be the key to ensuring high rates of satisfaction.

Satisfied responses were also high in responsiveness, pointing to the need to offer timely help and support to patients in a timely manner. Delays in service provision are usually a part of frustration and dissatisfaction; therefore, a better conquest of waiting time and efficiency of workflow can also improve the quality perceptions of patients. The previous studies prove that the speed of service and shorter wait times have a strong

correlation with positive patient experience (Woo and Choi, 2021, Fadeyi et al., 2024).

On the contrary, the neutral and dissatisfied responses were relatively higher in tangibles in comparison to other domains. Even though the majority of patients were satisfied, the physical aspect of the setting, in terms of facilities, equipment, and cleanliness, seemed to be less strongly related with overall satisfaction than the interpersonal and procedural factors of care. This trend is consistent with data that indicates that although infrastructure affects the comfort levels and impressions, patients consider functional efficiency and the behavior of the staff members in assessing the quality of healthcare (Aljabri and Alzahrani, 2022; Saha et al., 2023). However, still, the patient confidence can be impacted due to the unceasing constraints in the physical environment and should not be ignored.

The empathy also demonstrated generally positive ratings but with lower frequency counts since they are less items in this domain. In spite of that, caring and personalized treatment is a vital part of patient-centered care. Research focuses on the importance of respectful communication and emotional support as key factors when it comes to increasing satisfaction, especially in high-demand public hospital work (Khan et al., 2021; Perez-Romero et al., 2023).

Generally, the results support the concept of patient satisfaction, which is multidimensional as theorized in SERVQUAL model formulated by Parasuraman, A. and others. Satisfaction seems to be closely linked to reliability, assurance and responsiveness, service efficiency and provider competence, dimensions, than to the environmental or structural characteristics alone. As a manager, it is possible to enhance operational processes, staff-patient communication, and service flow, thus providing more satisfaction improvement than facility improvements.

IV. CONCLUSION

In general, the results of the present study indicate that patients tended to rate hospital services in a positive way along all dimensions of SERVQUAL, with their levels of overall satisfaction being on the agree scale. The most effective areas of service quality were empathy, reliability, and assurance, which means that kind relations, regularity in providing care, and professionalism of the staff became the key elements of

positive patient experiences. Nevertheless, the same strengths are accompanied by the qualitative assessment showing continuing gaps associated with delays, excessive jobs, and staffing problems, as well as physical environment constraints. Moreover, the substantial chi-square analysis verified that the levels of satisfaction differed in the spheres of service quality, and the operational efficiency and interpersonal care were more closely related to satisfaction than structural or facility-related ones. Combining these results, one will stress that patient satisfaction in the universal hospital facilities is determined by not only the infrastructure but primarily by the credibility, promptness, and professionalism of the healthcare givers.

In order to improve patient satisfaction, process and workforce improvement as well as infrastructure development should be prioritized by the administrators of the hospital. Some of the strategies can be streamlining the patient flow processes to minimize waiting times, enhancing the process of scheduling appointments and following up, ensuring staffing is sufficient to enable more personalized interactions, and offering ongoing training on communication and patient-centered care. Simultaneously, gradual improvements in the cleanliness of facilities, comfort, and availability of equipment must be sought to fill in known service gaps. These specific, system-related interventions may assist in reducing perceived deficits, advancing upon current strengths of the given service, and making the healthcare delivery in the hospital more consistent, efficient, and patient-centered.

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