

Satisfaction of patients in government medical teaching institutes of Peshawar Khyber Pakhtunkhwa, Pakistan: a cross-sectional analytical study

Muhammad Mushtaq¹, Khadim Shah², Yasir Rahman Khattak³, Nouman Khattak⁴, Hooria Farheen⁵, Sabiha Akhtar⁶

Abstract

Objective: To evaluate patient satisfaction and its associated factors in teaching hospitals.

Method: The cross-sectional, analytical study was conducted from September to December 2022 at three public-sector medical teaching hospitals in Peshawar, Pakistan, and comprised adult patients of either admitted to various hospital wards for at least 2 days. Data was collected using a predesigned a closed-ended questionnaire assessing patient satisfaction in different domains like, facilitation at the admission, professional knowledge and skills of the attending doctors, quality of diagnostic and nursing services, and basic amenities. Data was analysed using SPSS version origin Pro 2022a.

Results: There were 473 patients with a male-female ratio of 3:1, with mean age 43.3+14.7 years (range: 11-85 years), and mean hospital stay 5.96+3.37 days (range: 2-18 days). Of the 2,365 response statements for facilitation at the admission counter, 2,051(87%) were positive; of the 2,365 statements for attending doctors, 2,012(85%) were positive; of the 2,838 statements for nursing care, 2,122(75%) were positive; of 946 statements for diagnostic services, 627(66%) were positive; and of the 3,311 statements for basic amenities at the hospital, 1,246(38%) were positive. Overall, of the 11,825 response statements, 8058(68%) were positive. The patient satisfaction was significantly co-related with education and hospital stay ($p < 0.05$).

Conclusion: Patients were found to be generally satisfied with healthcare services, but not with the provision of basic amenities.

Key Words: Patient satisfaction, MTI Peshawar, Quality of healthcare, Tertiary care facility, Inpatient services. (JPMA 74: 701; 2024) DOI: <https://doi.org/10.47391/JPMA.9990>

Introduction

The quality of patient care in hospitals is a combination of technical, interpersonal and organisational aspects that can be viewed as a reflection of the values and goals of the healthcare system.¹ Healthcare and medical care should be knowledge-based, safe, patient-centred, effective, equitable and timely.² Patient satisfaction is a measure of quality of care, and gives the providers insight into many aspects of healthcare, such as effectiveness and empathy.^{3,4} Patient satisfaction measurement is, therefore, an excellent tool to devise and implement new methods that may improve the management of a healthcare system.⁵ The Donabedian theory of patient satisfaction is a guiding framework for the healthcare system that is widely considered to be the most comprehensive conceptualisation with respect to patient satisfaction.^{6,7} As the delivery of and access to health

.....
1,3 Department of Oral and Maxillofacial Surgery, Khyber Girls Medical College, 2,6 Hayatabad Medical Complex, 4 Department of Physiology, Rahman Medical College, 5 Department of Gastroenterology, Rahman Medical College, Peshawar, Pakistan.

Correspondence: Muhammad Mushtaq. Email: meetmeshi@yahoo.com

ORCID ID: 0009-0009-2963-2849

Submission complete: 03-06-2023

Review began: 26-07-2023

Acceptance: 27-12-2023

Review end: 11-11-2023

systems has increased significantly, the focus has shifted to the quality of health services. A simple and direct approach is to ask patients themselves to rate their healthcare system.^{8,9}

The Medical Teaching Institution (MTI) Reforms Act, 2015¹⁰ was introduced in the Khyber Pakhtunkhwa (KP) province of Pakistan with the aim of giving tertiary care teaching hospitals full administrative and financial autonomy along with budgetary allocations to provide better healthcare to the patients. The main focus of reforms was on patient care, but, our knowledge, no study has measured patient satisfaction in the province. The current study was planned to fill the gap by determining patient satisfaction and its associated factors in an urban tertiary care setting.

Subjects and Methods

The cross-sectional, analytical study was conducted from September to December 2022 at three public-sector medical teaching hospitals in Peshawar, the capital of KP province in Pakistan. After approval from the ethics review committee of Gandhara University, Peshawar, the sample size was calculated through G*Power formula with 95% confidence interval (CI), 4 dispersion and 73% prevalence.^{11, 12}

$$n = \frac{pqZ_{1-\frac{\alpha}{2}}^2}{d^2}$$

The sample was raised using randomised systemic interval sampling technique. The Kth systematic sampling interval was $2662/473 = 5.628$, or 6. All adult patients of either gender admitted to routine hospital wards for at least 2 days were targetted at 3 medical teaching institutes (MTIs); Hayatabad Medical Complex (HMC), Lady Reading Hospital (LRH), and Khyber Teaching Hospital (KTH). These are tertiary care hospitals with a capacity of more than 1,000 beds each, and cater to patients from all parts of the KP province as well as those coming from Afghanistan. Paediatric patients, and those admitted to intensive care unit (ICU), coronary care unit (CCU), or wards designated for coronavirus disease-2019 (COVID-19) and Congo fever patients were excluded, and so were those in psychiatry and oncology wards.

Data was collected after taking written informed consent from all the subjects.

A questionnaire was developed with closed-ended statements. The reliability and validity of the questionnaire were checked by piloting the study with Cronbach's alpha (α) (6.34). Other than covering the demographic variables, the questionnaire comprised 25 statements across 5 domains: facilitation at the time of admission (5 items), professional knowledge and skill of the attending doctors (5 items), quality of diagnostic services (2 items), quality of services provided by nursing and paramedical staff (6 items), and evaluation of basic amenities at the hospital (7 items), including the availability of medicines, clean drinking water, fans and lights in the wards, car parking facility, meals and retiring/waiting room for caregivers and attendants of the patients. For each of the five domains, the sample size was multiplied by the number of statements to quantify complete response from which satisfaction and dissatisfaction levels were calculated.

Data was coded and analysed using Excel and SPSS version Origin Pro 2022a. Chi-square test was used to assess the correlation of patient satisfaction with age, gender, education and length of hospital stay (LOS). $P < 0.05$ was considered significant.

Results

There were 473 patients with a male-female ratio of 3:1, with mean age 43.3 ± 14.7 years (range: 11-85 years), and

Table-1: Quantification of patient satisfaction

Domain	No. of statements (N)	Sample size (n)	Complete response (N x n)	Satisfaction	Dissatisfaction
1	05	473	2365	2051 (87%)	314 (13%)
2	05	473	2365	2012 (85%)	353 (15%)
3	02	473	946	627 (66%)	319 (34%)
4	06	473	2838	2122 (75%)	716 (25%)
5	07	473	3311	1246 (38%)	2065 (62%)
Total patient satisfaction			11825	8058 (68%)	3767 (32%)

mean hospital stay 5.96 ± 3.37 days (range: 2-18 days). The rural-urban distribution of patients was 51% and 49%, respectively. Most patients (59%) had up to 10 years of formal education.

Of the 2,365 response statements for facilitation at the admission counter, 2,051(87%) were positive; of the 2,365 statements for attending doctors, 2,012(85%) were positive; of the 2,838 statements for nursing care, 2,122(75%) were positive; of 946 statements for diagnostic services, 627(66%) were positive; and of the 3,311 statements for basic amenities at the hospital, 1,246(38%) were positive. Overall, of the 11,825 response statements, 8058(68%) were positive (Table 1).

The differences in patient satisfaction with the services offered by nurses and paramedical staff at the three hospitals were extremely significant and patients were less satisfied at KTH ($p=0.0003$).

Regarding the availability of basic amenities at the hospital, the differences in patient satisfaction levels at the three hospitals were significantly different ($p=0.008$) (Table 2).

Table-2: Patient satisfaction regarding the availability of basic amenities at the participating hospitals

Hospital	Satisfied %	Unsatisfied %	p-value
HMC	37	63	0.008
KTH	25	75	
LRH	52	48	

HMC: Hayatabad medical complex, KTH: Khyber Teaching Hospital, LRH: Lady Reading Hospital.

The patient satisfaction was significantly positively related with education (Figure 1) and significantly inversely related to LOS (Figure 2). Patient satisfaction level was not significantly associated gender ($p=0.948$) and urban-rural status ($p=0.938$).

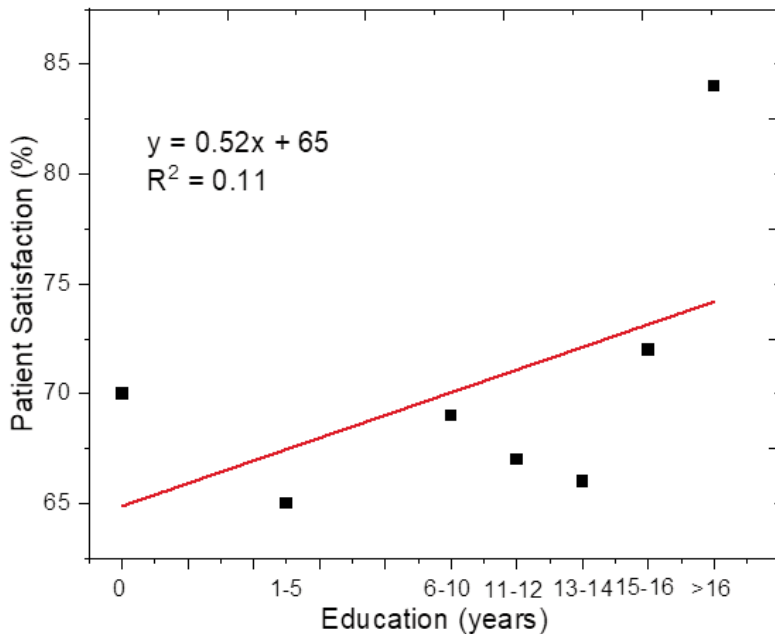


Figure-1: Association between patient's education and satisfaction.

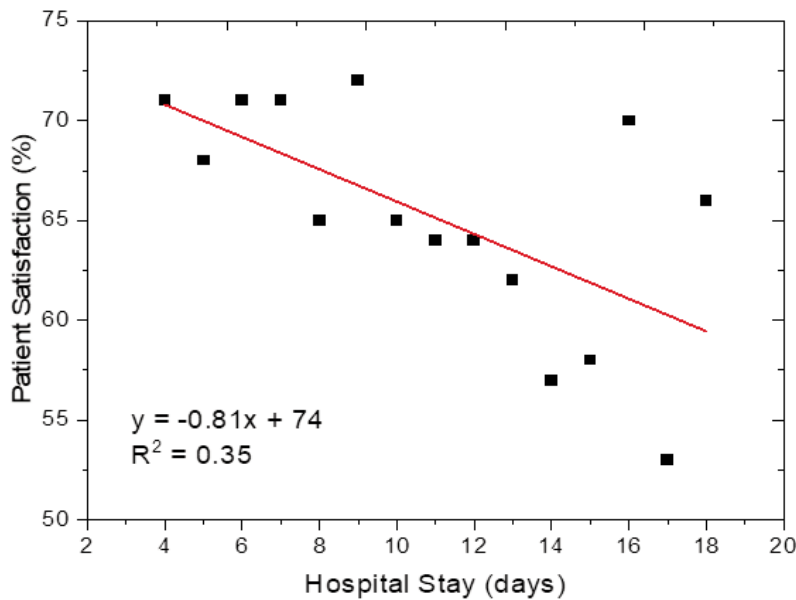


Figure-2: Association between hospital stay and patient satisfaction.

Discussion

In the KP province of Pakistan, new reforms were introduced in tertiary care teaching hospitals aimed at improving accessibility and effectiveness as benchmark parameters to measure patient care quality. The current study's goal was to ascertain the degree of patient satisfaction with the medical care and services received in

tertiary care facilities in Peshawar, the provincial capital, especially at MTIs.

In the current study, 288 (61%) patients were aged 31-60 years. Patients aged <30 years constituted only 13% of the cohort. It is speculated that patients of young age express high expectations compared to old patients, and that explains the higher level of satisfaction noted in the study. This is an agreement with an earlier study.⁹

The level of patient education is another vitally important factor that influences patient satisfaction. It is more challenging to satisfy highly educated patients compared to patients with low or no education.¹³ In the current study, the education level of majority (59%) of the patients was up to 10th grade, while the number of patients with graduation were only 9%. The large number of patients with low-level education may have contributed to the high level of patient satisfaction in the study. Interestingly, the results were in agreement with respect to age and educational level with other studies in several developed countries.¹⁴ The present study showed disagreement with one study in which patients with higher education were more satisfied compared to those with low-level education. This may be due to using digital healthcare information system in the hospital.¹⁵

Moreover, there was a large variation in LOS, ranging 02-18 days. Nevertheless, about 75% of the patients were admitted at the hospital for up to 7 days. Patients with longer stay in hospital were less satisfied compared to those having a short stay, and the finding was in agreement with another study.¹⁶

The observed trends in patient satisfaction can be interpreted within each domain of the questionnaire and the statements therein. For example, the high satisfaction of patients with the services offered by the admission counter and the doctors may be attributed to multiple factors, such as the high level of education of the staff,

competence, good attitude, and respect towards patients. Literature also suggests that social and relational link, communication skills, emotional intelligence quotient and behaviours of healthcare provider towards patients are directly related to patient satisfaction.^{17,18} There was no significant difference among the three participating hospitals in these two domains of satisfaction.

There was low level of satisfaction across the 3 hospitals regarding the services of ward boys while carrying the patients for laboratory investigation from the ward to the main laboratory. This may be due to increased workload and shortage of staff. There was highly significant difference among the 3 hospitals with respect to nurses and paramedics. There was minimal satisfaction at KTH regarding such services, which may be due to the absence of proper orientation training after recruitment and overload at KTH.

On the other hand, minimal patient satisfaction was seen with respect to the availability of basic amenities at the hospitals. Future studies should replace all the caregiver-specific statements with patient-specific statements. Alternatively, satisfaction of the caregivers may be considered as a separate domain in the development of the questionnaire.

A study carried out at a government hospitals in France showed that the accommodation and facilities of the hospitals were the main source of patient dissatisfaction.¹⁹ Since most of the patients cannot reliably differentiate between good observations with the material environment from positive experiences with care, it has been suggested that an improvement and refinement, such as clean, lighted environment, attendant-friendly facilities, well-equipped rooms and wards, and all basic amenities on the premises would result in high satisfaction level among patients and healthcare workers.²⁰ Therefore, attention should be given to providing basic amenities. The presence of premium services in hospitals, such as a single room with on-call nurses/doctor has also been documented as a reason for higher patient turnout.²¹

Several studies have investigated and evaluated patient satisfaction in Pakistan, assessing patient satisfaction from various angles, such as the provision of free medicines in public hospitals, comparing satisfaction between public and private hospitals, patient satisfaction at the medical, surgical, outdoor, registration departments, etc.²² A study comparing patient satisfaction at two major hospitals in Lahore, revealed that patient satisfaction was significantly better ($p=0.03$)

at one compared to the other.²³ A cross-sectional study interviewed 150 participants in the outpatient department of a hospital in Rawalpindi, and reported that overall satisfaction score was 61.4%²⁴, while the current study had overall satisfaction rate of 68%.

The current study has its limitations. Although the respondents were patients themselves, but in case the patients were unable to respond personally, their close attendants were interviewed. Due to cultural and other barriers, the women in this area were reluctant to be interviewed, and, therefore, mostly their male attendants were interviewed. Besides, the study had closed-ended Yes-No questions and there was no choice for the respondents to grade an element or express their fuller view. Satisfaction is a subjective feeling, and the study did not include questions about the desires, expectations and health and socioeconomic status of the participants. Therefore, it was not possible to assess the impact of different values on satisfaction levels.

Conclusion

Patients were found to be generally satisfied with healthcare services, but not with the provision of basic amenities.

Disclaimer: None.

Conflict of Interest: None.

Source of Funding: None.

References

1. Dixon J. Improving the quality of care in health systems: towards better strategies. *Isr J Health Policy Res* 2021;10:15. doi: 10.1186/s13584-021-00448-y.
2. Engle RL, Mohr DC, Holmes SK, Seibert MN, Afbale M, Leyson J et al. Evidence-based practice and patient-centered care: Doing both well. *Health care Manage Rev.* 2021;46:174-84. doi: 10.1097/HMR.0000000000000254
3. Rahim AI, Ibrahim MI, Musa KI, Chua SL, Yacoob NM. Patient Satisfaction and Hospital Quality of Care Evaluation in Malaysia Using SERVQUAL and facebook. *Healthcare (Basel)* 2021; 9: 1369. doi: 10.3390/healthcare9101369
4. Balkaran RL, Osoba T, Rafeek R. A cross-sectional study of patients' satisfaction with dental care facilities: A survey of adult treatment at the University of the West Indies, School of Dentistry. *West Indian Med J.* 2014;63:490-98. doi: 10.7727/wimj.2013.197
5. Habib S, Ramalingam S. Patient 's satisfaction with the dental care provided by dental students. *J Ayub Med Coll Abbottabad.* 2014;26(3):353-6.
6. Holt JM. Patient Experience in Primary Care: A Systematic Review of CG-CAHPS Surveys. *J Patient Exp.* 2019;6:93-102. DOI: 10.1177/2374373518793143
7. Bergh K, Bishu S, Taddese HB. Identifying the determinants of patient satisfaction in the context of antenatal care in Kenya, Tanzania, and Malawi using service provision assessment data. *BMC Health Serv Res.* 2022; 22:746. <https://doi.org/10.1186/s12913-022-08085-0>.
8. Xesfingi S, Vozikis A. Patient satisfaction with the healthcare

- system: Assessing the impact of socio-economic and healthcare provision factors. *BMC Health Serv Res.* 2016;16:94. DOI: 10.1186/s12913-016-1327-4
9. Simsekler MCE, Alhashmi NH, Azar E, King N, Luqman RAMA, Al Mulla A. Exploring drivers of patient satisfaction using a random forest algorithm. *BMC Med Inform Decis Mak.* 2021;21:157. DOI: <https://doi.org/10.1186/s12911-021-01519-5>.
 10. Javaid A. Autonomy to the teaching hospitals in light of MTI 2015 reform act; way forward. *J Postgrad Med Inst.* 2016;30:1.
 11. Kang H. Sample size determination and power analysis using the G*Power software. *J Eduuc Eval Health Prof.* 2021; 18:17. doi: 10.3352/jeehp.2021.18.17
 12. Qadri SS, Pathak Dr R, Singh M, Ahluwalia SK, Saini S, Garg PK. An assessment of patients satisfaction with services obtained from a tertiary care hospital in Rural Haryana. *Int J Collab Res Intern Med Public Health.* 2012;4:1524–37.
 13. Alharabi HF, Alzahrani NS, Almarwani AM, Asiri SA, Alhowaymel FM. Patients' satisfaction with nursing care quality and associated factors: A cross-section study. *Nursing Open.* 2023;10: 3253-62. DOI: <https://doi.org/10.1002/nop2.1577>
 14. Ayranci E, Atalay N. Demographic Determinants of Patient Satisfaction: A Study in a Turkish Context. *Int J Acad Res Bus Soc Sci.* 2019; 9: 837 – 47. <http://dx.doi.org/10.6007/IJARBS/v9-i6/6041>
 15. Aljarallah NA, Almuqbil M, Alshehri S, Khormi AMS, Alreshaidan RM, Almorani FA, et al. Satisfaction of patients with health care services in tertiary care facilities of Riyadh, Saudi Arabia: A cross-sectional approach. *Front Public Health.* 2022; 10:1077147. doi: 10.3389/fpubh.2022.1077147
 16. Maina MN. Effect of Customer Perfection on Performance of Private Hospital in Nairobi: A Case Study of Karen Hospital. *Business Med.* 2016; 4: 60-71.
 url={<https://api.semanticscholar.org/CorpusID:36492620>}
 17. Aiken LH, Sloane DM, Ball J, Bruyneel L, Rafferty AM, Griffiths P. Patient satisfaction with hospital care and nurses in England: An observational study. *BMJ Open.* 2018;8: <https://doi.org/10.1136/bmjopen-2017-019189>.
 18. Shan L, Li Y, Ding D, Wu Q, Liu C, Jiao M, et al. Patient satisfaction with hospital inpatient care: Effects of trust, medical insurance and perceived quality of care. *PLOS One.* 2016;11: :e0164366 . doi.org/10.1371/journal.pone.0164366.
 19. Hemadeh R, Hammoud R, Kdouh O, Jaber T, Ammar L. Patient satisfaction with primary healthcare services in Lebanon. *Int J Health Plann Manage.* 2019;34: e423-e435. doi.org/10.1002/hpm.2659.
 20. Young C, Chen X. Patients as Consumers in the Market for Medicine: The Halo Effect of Hospitality. *Social Forces.* 2020; 99: 504–31. doi. <https://doi.org/10.1093/sf/soaa007>
 21. Hwang J, Vu GT, Tran BX, Thi Nguyen TH, van Nguyen B, Nguyen LH, et al. Measuring satisfaction with health care services for vietnamese patients with cardiovascular diseases. *PLoS One.* 2020;15:e0235333. DOI: <https://doi.org/10.1371/journal.pone.0235333>.
 22. Naseer M, Zahidie A, Shaikh BT. Determinants of patient ' s satisfaction with health care system in Pakistan : a critical review. *Pakistan J Public Heal.* 2012;2:56–61. http://ecommons.aku.edu/pakistan_fhs_mc_chs_chs/135
 23. Farooq A, Khaliq MA, Toor MA, Amjad A, Khalid W, Butt F. Assessment of Patient Satisfaction in a Military and Public Hospital: A Comparative Study. *Cureus.* 2020;12. DOI: 10.7759/cureus.10174.
 24. Afzal M, Khan A, Rizvi F, Umer A. Patients Satisfaction Levels in Out Patient Department of a Teaching Hospital. *JIMDC.* 2012;1211:26–9.

Author's Contributions

MM: Conception, design, acquisition, analysis, interpretation of data, final approval.

KS: Conception, design, acquisition, analysis, interpretation of data.

YRK: Statistical analysis.

NK: Drafting, revising it critically.

HF: Drafting, revising it critically.

SA: Data acquisition.