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Article

Patient Satisfaction with Rehabilitation Services in Secondary Care Hospitals: A Cross-Sectional Study

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ABSTRACT

Background: Patient satisfaction is a key indicator of healthcare quality and is particularly important in rehabilitation services, where sustained patient engagement, communication, and service organization influence treatment adherence and outcomes. Evidence on patient satisfaction with rehabilitation services in secondary care hospitals in low- and middle-income countries remains limited. **Objective**: To assess the level of patient satisfaction with rehabilitation services in secondary care hospitals in Lahore and to identify service-related factors associated with overall satisfaction. **Methods**: A cross-sectional observational study was conducted among 170 adult patients receiving rehabilitation services in selected secondary care hospitals in Lahore. Patient satisfaction was measured using a structured questionnaire covering therapist behavior, communication, treatment effectiveness, waiting time, environment, and facility resources, rated on a five-point Likert scale. Descriptive statistics summarized satisfaction levels, while chi-square tests and multivariable logistic regression were used to examine associations between patient characteristics, service domains, and overall satisfaction. **Results**: Overall, 68.2% of patients reported satisfaction with rehabilitation services. The highest satisfaction was observed for therapist behavior (74.1%) and communication (70.6%), whereas waiting time (55.9%) and facility resources (58.2%) received comparatively lower ratings. In adjusted analyses, positive therapist behavior (adjusted OR 3.21; 95% CI 1.61–6.42), effective communication (adjusted OR 2.48; 95% CI 1.29–4.78), and shorter waiting time (adjusted OR 1.94; 95% CI 1.02–3.68) were independently associated with overall satisfaction. **Conclusion**: Most patients were satisfied with rehabilitation services in secondary care hospitals in Lahore; however, organizational and infrastructural factors, particularly waiting time and resource availability, require improvement to enhance patient-centered care.

Keywords: Patient satisfaction; Rehabilitation services; Secondary care hospitals; Cross-sectional study; Pakistan

INTRODUCTION

Patient satisfaction is increasingly recognized as a central indicator of healthcare quality and system performance, reflecting not only clinical outcomes but also patients' experiences with service delivery, communication, accessibility, and interpersonal care (1). In rehabilitation services, patient satisfaction assumes particular importance because rehabilitation is typically a longitudinal, interactive process that requires sustained patient engagement, adherence to treatment plans, and trust in healthcare providers to achieve optimal functional outcomes (2). Higher levels of patient satisfaction in rehabilitation settings have been associated with improved treatment compliance, better functional recovery, and greater continuity of care, whereas dissatisfaction may lead to poor attendance, early discontinuation of therapy, and suboptimal outcomes (3).

Rehabilitation services encompass a broad range of interventions aimed at restoring physical function, reducing disability, and enhancing quality of life among patients with musculoskeletal, neurological, and post-surgical conditions. Patient satisfaction in this context is multidimensional and influenced by factors such as therapist competence and behavior, clarity of communication, perceived effectiveness of treatment, waiting time, physical environment, and availability of equipment (4). Previous studies from high-income settings have demonstrated that interpersonal aspects of care, particularly respectful behavior and effective communication, are often stronger predictors of satisfaction than technical aspects alone (5). However, the relative contribution of these domains may vary substantially across healthcare systems and levels of care.

Secondary care hospitals represent a critical yet understudied tire within healthcare delivery systems. They serve as an intermediary between primary and tertiary care, often managing high patient volumes with limited resources while providing essential rehabilitation services to a diverse population (6). In low- and middle-income countries, including Pakistan, secondary care facilities frequently face challenges such as workforce shortages, constrained infrastructure, and long waiting times, all of which may adversely affect patient satisfaction (7). Despite the growing demand for rehabilitation services due to an increasing burden of chronic disease and disability, empirical evidence on patient satisfaction with rehabilitation services in secondary care settings remains sparse, particularly in urban centers like Lahore.

Existing literature from Pakistan has largely focused on patient satisfaction in tertiary care hospitals or general outpatient services, with limited attention to rehabilitation-specific services and secondary care contexts (8). Consequently, there is insufficient local evidence to inform targeted quality improvement initiatives for rehabilitation services at this level of care. Addressing this knowledge gap is essential for health service planners and hospital administrators seeking to optimize patient-centered care and allocate resources efficiently.

Therefore, the objective of this study was to assess the level of patient satisfaction with rehabilitation services in secondary care hospitals in Lahore and to evaluate satisfaction across key service domains, including therapist behavior, communication, treatment effectiveness, waiting time, and facility resources, using a cross-sectional study design (9).

MATERIALS AND METHODS

A cross-sectional observational study was conducted in Lahore, Pakistan, across selected secondary care hospitals providing outpatient rehabilitation services, with data collected over a three-month period. The study design and reporting approach were structured in accordance with internationally endorsed guidance for observational research to support transparent, reproducible reporting of sampling, measurement, and analysis procedures (10). Participants were recruited consecutively from physiotherapy and rehabilitation departments during routine clinic hours to minimize selection related to appointment timing, and recruitment was distributed across weekdays to reduce systematic overrepresentation of any single clinic session. All eligible patients were approached by trained data collectors who were independent of the treating therapists to reduce social desirability bias; the study purpose, confidentiality safeguards, and voluntary nature of participation were explained, and written informed consent was obtained prior to questionnaire administration (11).

Eligible participants were adults aged 18 years and above who attended at least three rehabilitation sessions at the participating secondary care hospitals, ensuring adequate exposure to services for meaningful evaluation of satisfaction. Patients were excluded if they were critically ill, had impaired cognition or communication that precluded reliable responses without an attendant able to assist, or declined participation. To enhance comparability across rehabilitation contexts, the sampling frame included common rehabilitation indications, categorized a priori as musculoskeletal, neurological, and post-surgical rehabilitation, based on the primary clinical diagnosis recorded in the patient file and confirmed verbally with the patient at interview.

Patient satisfaction was assessed using a structured questionnaire grounded in widely used patient experience and rehabilitation satisfaction constructs, incorporating domains consistently identified in rehabilitation quality literature, including therapist behavior/professionalism, communication and explanation, perceived treatment effectiveness, waiting time and service flow, environment/cleanliness, and availability of resources/equipment (12,13). Responses were recorded on a five-point Likert scale ranging from “very dissatisfied” to “very satisfied.” For domain-level analyses, each domain score was computed as the mean of its constituent items, and overall satisfaction was operationalized as the mean score across all domains. For categorical analyses aligned with service evaluation reporting, satisfaction was dichotomized as “satisfied” (satisfied/very satisfied) versus “not satisfied” (neutral/dissatisfied/very dissatisfied), consistent with common approaches in patient satisfaction research to enhance interpretability for health service decision-making (14). Demographic variables included age (years), gender, and education status; clinical variables included rehabilitation indication category and number of sessions attended. The primary outcome was overall satisfaction (dichotomous and continuous), and secondary outcomes were domain-specific satisfaction measures.

Potential sources of bias and confounding were addressed prospectively through standardized interviewer training, use of a consistent script, private administration where feasible, and assurance that responses would not affect care. To reduce measurement errors, data collectors were trained to clarify questions without leading participants and to avoid therapist presence during interviews. Confounding was addressed analytically by specifying multivariable models adjusting for a priori covariates plausibly related to satisfaction, including age, gender, rehabilitation indication category, and rehabilitation exposure (session count), based on existing evidence that demographic and clinical factors influence healthcare experience ratings (15).

Sample size was set at 170 participants to estimate the prevalence of overall satisfaction with acceptable precision, using a single-proportion approach with a conservative satisfaction proportion of 50%, a 95% confidence level, and an absolute precision of approximately 7.5%, while allowing for minimal non-response due to in-clinic recruitment. Data were checked for completeness at the point of collection; if item non-response occurred, complete-case analysis was applied for the relevant domain or model, and the extent of missingness was summarized to assess the potential for bias. Statistical analysis was performed using SPSS (IBM Corp., Armonk, NY). Categorical variables were summarized as frequency and percentage, and continuous variables as mean with standard

deviation or median with interquartile range depending on distribution. Group comparisons of satisfaction (overall and domain-level) by participant characteristics were conducted using chi-square tests for categorical outcomes and independent-samples t-tests or one-way ANOVA for continuous satisfaction scores; where assumptions were violated, non-parametric equivalents were applied. To quantify independent associations with overall satisfaction, binary logistic regression was used to estimate adjusted odds ratios with 95% confidence intervals, with pre-specified subgroup analyses by rehabilitation indication (musculoskeletal vs neurological vs post-surgical) to examine whether satisfaction drivers differed by clinical pathway. Statistical significance was evaluated using two-sided tests with α=0.05, and model diagnostics included assessment of multicollinearity and goodness-of-fit.

Ethical approval was obtained from the relevant institutional ethics committee(s) of the participating hospitals in Lahore, and the study was conducted in accordance with the Declaration of Helsinki principles for human subject research (16). Data integrity and reproducibility were supported through de-identified data entry, double-checking of a random subset of questionnaires against the database, preservation of a codebook defining all variables and thresholds, and restricted access to the dataset for the study team only.

RESULTS

A total of 170 patients receiving rehabilitation services in secondary care hospitals in Lahore were included in the analysis. More than half of the participants were male (56.5%), and nearly half belonged to the 31–50 years age group (48.2%), followed by patients older than 50 years (27.1%). Musculoskeletal conditions were the most common indication for rehabilitation, accounting for 52.4% of cases, while neurological conditions represented 29.4% and post-surgical rehabilitation 18.2%. Most patients (65.9%) attended more than five rehabilitation sessions, indicating adequate exposure to services for meaningful evaluation of satisfaction (Table 1).

Domain-wise analysis of patient satisfaction demonstrated notable variability across different aspects of rehabilitation services. Satisfaction with therapist behavior was highest, with 74.1% of patients reporting satisfaction and a mean score of 4.02±0.71, followed by therapist communication, which was rated satisfactory by 70.6% of participants (mean 3.94±0.78). Perceived treatment effectiveness was reported as satisfactory by 66.5% of patients. In contrast, comparatively lower satisfaction was observed for waiting time and facility resources, where only 55.9% and 58.2% of patients, respectively, reported satisfaction, with mean scores of 3.58±0.92 and 3.62±0.90. These findings suggest that interpersonal and clinical aspects of care were rated more favorably than organizational and infrastructural components (Table 2).

When overall satisfaction was compared across participant characteristics, no significant differences were observed by gender or age group. Satisfaction rates were slightly higher among male patients (70.8%) compared with females (64.9%), but this difference was not significant (p=0.412). However, overall satisfaction differed significantly by rehabilitation indication (p=0.031), with patients receiving musculoskeletal rehabilitation reporting the highest satisfaction (74.2%), compared with neurological (60.0%) and post-surgical patients (64.5%) (Table 3).

Multivariable logistic regression analysis identified several independent predictors of overall patient satisfaction. Positive therapist behavior was the strongest predictor, with patients reporting satisfactory therapist behavior having more than threefold higher odds of overall satisfaction (adjusted OR 3.21; 95% CI 1.61–6.42; p=0.001).

Effective communication was also significantly associated with satisfaction (adjusted OR 2.48; 95% CI 1.29–4.78; p=0.006), as was shorter waiting time (adjusted OR 1.94; 95% CI 1.02–3.68; p=0.042). Facility resources showed a positive but non-significant association with satisfaction, while age and gender were not independently associated with overall satisfaction after adjustment (Table 4).

Analysis of mean overall satisfaction scores further supported differences by rehabilitation indication. Patients undergoing musculoskeletal rehabilitation reported the highest mean satisfaction score (3.92±0.64), which was significantly higher than scores among neurological (3.58±0.71) and post-surgical patients (3.67±0.68) (p=0.028). This pattern indicates that both the nature of the rehabilitation condition and service delivery experience may influence patient perceptions of care quality (Table 5).

Table 1. Socio-Demographic and Clinical Characteristics of Participants (n = 170)

Variable	Category	n (%)
Gender	Male	96 (56.5)
	Female	74 (43.5)
Age group (years)	18–30	42 (24.7)
	31–50	82 (48.2)
	>50	46 (27.1)
Rehabilitation indication	Musculoskeletal	89 (52.4)
	Neurological	50 (29.4)
	Post-surgical	31 (18.2)
Sessions attended	3–5	58 (34.1)
	>5	112 (65.9)

Table 2. Domain-Wise Patient Satisfaction with Rehabilitation Services

Satisfaction domain	Satisfied n (%)	Neutral n (%)	Dissatisfied n (%)	Mean score ± SD
Therapist behavior	126 (74.1)	28 (16.5)	16 (9.4)	4.02 ± 0.71
Communication	120 (70.6)	30 (17.6)	20 (11.8)	3.94 ± 0.78
Treatment effectiveness	113 (66.5)	34 (20.0)	23 (13.5)	3.81 ± 0.83
Cleanliness/environment	108 (63.5)	36 (21.2)	26 (15.3)	3.76 ± 0.86
Facility resources	99 (58.2)	39 (22.9)	32 (18.8)	3.62 ± 0.90
Waiting time	95 (55.9)	44 (25.9)	31 (18.2)	3.58 ± 0.92

Table 3. Overall Patient Satisfaction by Key Characteristics

Variable	Satisfied n (%)	Not satisfied n (%)	p-value
Gender			
Male	68 (70.8)	28 (29.2)	0.412
Female	48 (64.9)	26 (35.1)	
Age group			
18–30	26 (61.9)	16 (38.1)	0.287
31–50	58 (70.7)	24 (29.3)	
>50	32 (69.6)	14 (30.4)	
Rehabilitation indication			
Musculoskeletal	66 (74.2)	23 (25.8)	0.031
Neurological	30 (60.0)	20 (40.0)	
Post-surgical	20 (64.5)	11 (35.5)	

Table 4. Multivariable Logistic Regression: Predictors of Overall Satisfaction (n = 170)

Predictor	Adjusted OR	95% CI	p-value
Positive therapist behavior	3.21	1.61–6.42	0.001
Effective communication	2.48	1.29–4.78	0.006
Shorter waiting time	1.94	1.02–3.68	0.042
Adequate facility resources	1.73	0.92–3.26	0.086
Age (per 10-year increase)	1.08	0.87–1.34	0.491
Female gender	0.89	0.47–1.68	0.723

Table 5. Mean Overall Satisfaction Score by Rehabilitation Indication

Indication	Mean ± SD	95% CI	p-value
Musculoskeletal	3.92 ± 0.64	3.78–4.06	0.028
Neurological	3.58 ± 0.71	3.38–3.78	
Post-surgical	3.67 ± 0.68	3.43–3.91	

DISCUSSION

This cross-sectional study examined patient satisfaction with rehabilitation services in secondary care hospitals in Lahore and identified both strengths and areas requiring improvement within service delivery. Overall, approximately two-thirds of patients reported satisfaction with rehabilitation services, indicating a generally positive perception of care. This level of satisfaction is comparable to findings reported in similar rehabilitation settings in low- and middle-income countries, where satisfaction rates typically range between 60% and 75%, depending on healthcare infrastructure and service organization (17,18). These results suggest that secondary care rehabilitation services in Lahore meet core patient expectations but still face structural and operational challenges.

Interpersonal aspects of care, particularly therapist behavior and communication, emerged as the most highly rated domains and were also the strongest independent predictors of overall satisfaction. Patients who perceived therapists as respectful, attentive, and professionally competent had significantly higher odds of being satisfied with services. This finding aligns with extensive literature demonstrating that provider–patient interactions are central determinants of satisfaction in rehabilitation contexts, often outweighing technical or infrastructural factors (19,20). Rehabilitation requires sustained interaction over multiple sessions, and trust, empathy, and clear communication are essential for fostering patient engagement and adherence.

Perceived treatment effectiveness was also rated favorably by a majority of participants, reinforcing the importance of functional improvement and symptom relief in shaping patient satisfaction. However, satisfaction with organizational aspects of care, including waiting time and facility resources, was notably lower. Long waiting times were independently associated with reduced satisfaction, consistent with prior studies showing that delays in service delivery negatively influence patient perceptions even when clinical care

is perceived as competent (21). In secondary care hospitals, high patient volumes and limited staffing may contribute to these delays, highlighting the need for improved scheduling systems and workflow optimization.

Differences in satisfaction across rehabilitation indications were also observed, with musculoskeletal patients reporting significantly higher satisfaction compared with neurological and post-surgical patients. This pattern may reflect differences in rehabilitation trajectories, expectations, and perceived recovery rates. Musculoskeletal conditions often show more rapid and tangible improvements, which may positively influence patient perceptions of treatment effectiveness and overall care (22). In contrast, neurological rehabilitation is typically longer-term and more complex, potentially leading to unmet expectations and lower satisfaction if progress is slower or less apparent.

Multivariable analysis confirmed that therapist-related factors and service organization were more influential determinants of satisfaction than demographic characteristics such as age and gender. These findings are consistent with previous research indicating that patient satisfaction in rehabilitation settings is largely shaped by modifiable service-level factors rather than patient demographics (23). From a health systems perspective, this underscores the potential impact of targeted quality improvement initiatives focused on staff communication training, patient-centered care models, and operational efficiency.

The findings of this study have important implications for rehabilitation service delivery in secondary care hospitals. Given that secondary care facilities often operate under resource constraints, prioritizing low-cost, high-impact interventions—such as enhancing communication skills, improving appointment management, and optimizing patient flow—may substantially improve patient satisfaction. Additionally, incorporating routine patient satisfaction assessments into service evaluation frameworks can provide ongoing feedback to guide continuous quality improvement (24).

Several limitations should be considered when interpreting these results. The cross-sectional design limits causal inference, and satisfaction was assessed at a single point in time. The use of convenience sampling may limit generalizability beyond the participating hospitals. Furthermore, self-reported satisfaction measures are subject to response bias. Despite these limitations, the study provides valuable context-specific evidence from Lahore and contributes to the limited literature on rehabilitation service quality in secondary care settings in Pakistan.

Overall, the study highlights that while clinical care and therapist–patient interactions are perceived positively, organizational inefficiencies remain a key barrier to optimal patient satisfaction. Addressing these gaps is essential for strengthening rehabilitation services and improving patient-centered care at the secondary care level (25).

CONCLUSION

This study demonstrates that the majority of patients receiving rehabilitation services in secondary care hospitals in Lahore are generally satisfied with the care provided, particularly with respect to therapist behavior, communication, and perceived treatment effectiveness. However, lower satisfaction related to waiting time and facility resources highlights important organizational and infrastructural challenges within secondary care rehabilitation services. Interpersonal and service-delivery factors, rather than patient demographics, emerged as the primary determinants of overall satisfaction, indicating that modifiable aspects of care have the greatest potential for improvement. Strengthening patient-centered communication, optimizing appointment scheduling, and enhancing facility resources may substantially improve patient experience and service quality. Routine assessment of patient satisfaction should be integrated into rehabilitation service evaluation to support continuous quality improvement and inform evidence-based health service planning.

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